

ROWLAND WARD'S RECORDS OF BIG GAME



SEVENTH EDITION
1914

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ROWLAND WARD'S
RECORDS OF BIG GAME

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ROWLAND WARD'S RECORDS OF BIG GAME

WITH
THEIR DISTRIBUTION, CHARACTERISTICS, DIMENSIONS,
WEIGHTS, AND

HORN & TUSK MEASUREMENTS

SEVENTH EDITION

EDITED BY

R. LYDEKKEK, F.R.S.

AND

J. B. BURLACE, F.R.G.S., F.Z.S.



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1914



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FRASER OLIVER
BET RE
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TO THE
SPORTSMEN OF THE WORLD
WITHOUT WHOSE ENTERPRISE THESE RECORDS
COULD NOT HAVE BEEN COMPILED
THIS BOOK IS DEDICATED

PREFACE TO THE SEVENTH EDITION

THERE are three main points the great-game sportsman generally wants to ascertain:—1st, the name of his quarry; 2nd, how it compares in point of size with other specimens of the same species; and, 3rd, what is the extent of its geographical range. All these he will be able to ascertain from the present work.

As in former editions, the finest known specimens of antlers, horns, tusks, and skins are, so far as possible, recorded. It is to be regretted that one pair of hands and a steel-tape are not responsible for the measurements of all the actual “records.” But it has been found impracticable in some instances to verify the measurements of trophies, especially in distant parts of the world; and such records must accordingly be taken on the responsibility of their respective owners or those who have been good enough to measure them. One of the many difficulties in connection with compilations of this nature is due to the circumstance that different measurements of the same specimen are sometimes received, this often arising from the use of a tape or string instead of a steel-measure.

Great care has been taken with regard to the accuracy of the dimensions given; and, considering the number of measurements, it will be readily understood the task attempted has been one of no ordinary difficulty.

In the case of the horns of freshly killed hollow-horned ruminants an allowance for shrinkage should be made when comparing with older trophies. An average specimen of an *Ovis ammon* horn, for instance, will frequently shrink half an inch in length and proportionately in girth after it has left the field. Ivory tusks also deteriorate in weight.

Among the deer tribe many difficulties have arisen as to comparison ; and it may be pointed out that although length of antlers is invariably put at the top of the list, other particulars, such as *number of tines, general symmetry, spread, and weight of antlers*, go in many instances to the making of a good trophy.

A notebook for use on the field will be found in a pocket at the end of this volume.

Acknowledgments are due to a number of sportsmen (especially to Sir Edmund G. Loder) and naturalists all over the world for the help they have afforded.

As in the three previous editions, Mr. Lydekker is responsible for the technical nomenclature and descriptions. Since the text was printed off he has ascertained that *Sika* is the proper sub-generic name of the deer of the Sika group, and *nippon* the earliest specific designation of the type species. The amended names of the various members of this group will consequently stand as follows :—

1. *Cervus (Sika) nippon*, p. 49.
 - (a) *C. nippon typicus*, p. 50.
 - (b) *C. nippon manchuricus*, p. 50.
2. *Cervus (Sika) taiwanus*, p. 51.
3. *Cervus (Sika) hortulorum*, p. 52.

THE EDITORS.

ABBREVIATIONS AND SIGNS

— Owner's measurements and particulars, or other known authority.

♂ Male.

♀ Female.

... Unrecorded.

R, Right horn or antler.

L, Left horn or antler.

G.S. Greatest spread.

Measurements are usually on the outside of the longest horn from base to tip; but in Deer from the bottom outside edge of the burr, or coronet, to the highest tip-point, except when notified to the contrary.

Circumference is at the base; in most Deer above brow-tine, but in the Red-Deer and Wapiti group between bez and trez tines.

Length is expressed in inches, when not otherwise stated, and the tape should be laid on the centre of the front curve of antelope horns such as Reed-buck, etc.

Weights taken in the field should be accepted as approximate, and, unless the contrary is stated, are those of adult males.

Heights are in most cases taken at the shoulder of adult males (see p. 517).

N.B.—Unless the contrary is stated, the specimens and illustrations are those of males.

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RECORDS OF BIG GAME



Shot by Mr. Walter Jones.

The RED DEER (*Cervus elaphus*).

THE red deer of Western Europe is the typical representative of the genus *Cervus*, in which the antlers of the stags are set on the skull at an oblique angle to the middle line of the forehead, and have a true brow-tine, while they are generally more or less nearly cylindrical. There is always a large bare portion on the muzzle, the face is long, the ears are generally large, and the tail is comparatively short, often extremely so. Although there is almost always a gland and tuft on the hind cannon-bone, usually situated high up, there is none on the hock

itself. The coat may be spotted in the adult, and is almost invariably so in the young.

In the red deer the antlers are subcylindrical and complex, generally with a bez-tine, and always with a trez, the number of points exceeding five, and the crown frequently forming a cup. The tail is relatively long and pointed, and there is an orange-coloured patch on the buttocks, which includes or surrounds the tail. The general colour of the adult summer coat is reddish brown, and that of the winter dress greyish brown, often with a dark dorsal stripe; stags frequently showing a throat-fringe. The young, in which the ground-colour is of a richer tint, are profusely spotted with white.

Red deer, in the widest sense of the term, are inhabitants of Europe, North Africa, Asia Minor, and Northern Persia. In the typical red deer (*C. elaphus typicus*) of Sweden, and its representatives in Western, Northern, and Central Europe, the antlers attain their maximum degree of complexity, sometimes having twenty or even more points, although in many Scotch examples the bez-tine is wanting. The Swedish red deer is the typical *Cervus elaphus* of Linnæus, in other words, *Cervus elaphus typicus*. From this race the Norwegian red deer differs by its inferior size, the lighter colour of the summer coat, and the presence of a distinct dark border to the rump-patch. The general colour of the Swedish race is dark reddish brown, almost chestnut, with the legs sooty or blackish brown; while in the Norwegian animal the colour is yellowish brown tinged with grey, the legs being paler and of a brownish slaty grey. The rump-patch is also lighter in the Norwegian race, being reddish yellow with a blackish border, while that of the Swedish red deer is less distinct, sometimes scarcely differing in colour from the flanks. There are also differences in the skulls of the two races, especially noticeable in the case of hinds. The Norwegian red deer has been named *Cervus elaphus atlanticus*; and the Scotch red deer, *C. e. scoticus*, is closely allied. Several races of red deer have been named in Germany, but these may be included under one heading as *C. e. germanicus*. This is a large deer, with a very light, and usually black-bordered, rump-patch. The Spanish race (*C. e. hispanicus*), which is smaller, with a greyer coat and narrower skull, is said to lack the abundant neck-fringe of Scotch deer.

The red deer (*C. elaphus corsicanus*) of Corsica and Sardinia is a small race, without a bez-tine to the antlers, and the general colour of the upper-parts dark brown in summer, with the upper side of the tail coloured like the rump-patch, and blackish in the winter. Nearly allied is the North African red deer (*C. elaphus barbarus*), which is of rather larger dimensions, with a greyish-brown streak down the middle of the back, and small irregular whitish spots on the flanks

and sometimes on the back; traces of such spots being occasionally observable in the summer coat of hinds of the typical race. The bez-tine seems to be very generally wanting.

The Eastern red deer (*C. elaphus maral*) is a large race, described on page 28.

In a red deer killed at Spetchley Park the weight was 419 lbs. gross, and 216 when cleaned; while in one shot at Knowsley many years ago the clean weight was no less than 424 lbs. The height at the shoulder reaches about 4 feet. H.R.H. the Duke of Braganza saw a Continental stag shot which scaled 584 lbs., and shot a 10-pointer with a spread of 55 inches.

The late Lord Tweedmouth gave the following dimensions of a fine Scotch stag, shot October 9, 1880:—

Widest span over all, 39½ inches; span inside below cups, 34 inches; span outside below cups, 37 inches.

Right antler.—Length, 39 inches; length of brow, 10½ inches; of bez, 10 inches; of trez, 13 inches. Length of tines in cup, 10, 7, 4½ inches. Circumference at coronet, 8½ inches; between bez and trez, 7½ inches; above trez, 6 inches.

Left antler.—Length, 38 inches; of brow, 10 inches; of bez, 8 inches; of trez, 11 inches. Length of tines in cup, 8, 6, and 4 inches. Circumference at coronet, 9 inches; between bez and trez, 7½ inches; above trez, 6½ inches.—Weight, 303 lbs. clean; but stag was much run.

A.—BRITISH AND IRISH RED DEER (*C. elaphus scoticus*).

a.—Scottish Specimens.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
40½	5	22	33	...	7+7	lbs. ...	Inverness, 1794	Col. W. Hall Walker.
40¼	6½	...	...	...	8+8	...	Glenartney	Mrs. Campbell of Dunstaffnage.
¹ 40	6	...	30	...	10	203	Glentilt	Duke of Atholl.
39½	5	...	25	...	6+6	...	Ardverkie	E. J. Wythes.
39½	4¾	26	33	35½	5+5	266	Kinveachy	Major J. J. Porteous.
39	6	...	34	39¼	6+6	303	Guisachan	The late Lord Tweedmouth.
39	6	27½	34	39¾	6+6	...	?	Duke of Portland.
38½	4¾	...	26	...	11	...	Isle of Rum	Sir George Bullough.
38½	6¼	7¾	19½	30½	9+8	...	Glenfiddich	Duke of Richmond and Gordon.
38½	5½	...	31	...	5+6	...	Strathvaich	J. C. Williams.
38¼	5¾	14	27¾	33	6+5	246	Meoble	Walter Jones.
38¼	6	26	33¾	40¾	7+6	...	?	Duke of Beaufort.
38¼	5¾	...	...	...	5+5	...	Kinlochewe	Sir Kenneth Mackenzie, Bart.

- Owner's measurements.

¹ Recorded by J. G. Millais.

RECORDS OF BIG GAME

Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight. lbs.	Locality.	Owner.
38 $\frac{1}{4}$	5 $\frac{1}{2}$	...	30 $\frac{3}{4}$	...	7+7	...	?	The Hon. Mrs. Gordon-Cumming.
38	4 $\frac{7}{8}$	...	29 $\frac{1}{2}$	...	6+6	...	Fannich	V. J. Watney.
37 $\frac{1}{2}$	4 $\frac{7}{8}$	...	28 $\frac{1}{2}$	36 $\frac{3}{4}$	6+5	...	Barrisdale	W. Parrott.
37 $\frac{1}{2}$	5	...	26	...	6+5	...	Mar	Mrs. E. Ross.
37 $\frac{1}{2}$	4 $\frac{1}{2}$	...	30 $\frac{1}{4}$	...	5+5	...	Wyvis	R. Shoolbred.
37 $\frac{1}{2}$	5 $\frac{1}{2}$	...	...	...	10	...	Conaglen	Lord Morton.
-37 $\frac{1}{2}$	6 $\frac{1}{8}$	13	28 $\frac{1}{2}$	...	8+8	...	Glenmoriston	J. M. Grant.
37 $\frac{1}{4}$	4 $\frac{1}{2}$	...	32 $\frac{1}{2}$	...	6+6	...	Brodick	Marquis of Graham.
-37 $\frac{1}{8}$	5 $\frac{1}{2}$	...	24	27 $\frac{1}{2}$	5+5	...	Forfarshire	R. L. Scott.
37	4 $\frac{3}{4}$	...	23	...	6+6	378	Brodick	Marquis of Graham.
-37	4 $\frac{3}{4}$	...	30	...	5+4	...	Lettermorar	W. A. Dewhurst.
-36 $\frac{1}{2}$	4 $\frac{3}{4}$	...	35	...	6+6	...	Glenmoriston	The Hon. Mrs. Gordon-Cumming.
36 $\frac{1}{2}$	5	34	37	41	5+6	...	Glenstrath-farrar	W. Radcliffe (shot by the late R. Gordon-Cumming).
-36 $\frac{1}{2}$	...	...	...	...	...	...	Auchnasheen	Sir Edmund G. Loder, Bart.
-36 $\frac{1}{2}$	4 $\frac{3}{4}$	...	31 $\frac{1}{2}$	...	6+6	...	Rhidorroch	Countess of Cromartie.
-36 $\frac{1}{2}$	5 $\frac{1}{4}$	...	30 $\frac{1}{4}$	...	11	280	Benmore, Mull	Earl of Eglinton.
-36 $\frac{1}{2}$	4 $\frac{3}{4}$	...	27 $\frac{1}{2}$	...	11	...	Glomach	The late Col. Baldock.
-36 $\frac{1}{2}$	5	...	26	...	6+6	...	Ben Klibreck	J. W. Baxendale.
-36 $\frac{1}{4}$	4 $\frac{1}{2}$	...	27	...	10	...	Affarie	S. Dennis.
-36 $\frac{1}{4}$	4 $\frac{1}{2}$	...	25 $\frac{1}{2}$	...	6+5	235	Cluanie	A. H. Straker.
36 $\frac{1}{4}$	5 $\frac{1}{2}$	...	24 $\frac{3}{4}$	...	5+5	...	Gaick	G. Hargreaves.
-36 $\frac{1}{4}$	4 $\frac{5}{8}$	...	24 $\frac{3}{4}$	...	6+6	...	Arran	H.R.H. Prince Arthur of Connaught.
36 $\frac{1}{8}$	5	...	22	...	6+5	...	Kintail	S. Loder.
36	5 $\frac{3}{8}$	...	33 $\frac{1}{4}$	...	5+5	...	Corrour	Sir J. M. Stirling-Maxwell, Bart.
36	4 $\frac{3}{4}$	8 $\frac{1}{4}$	28	33 $\frac{3}{4}$	7+7	...	Knoydart	A. S. Bowlby.
-36	5 $\frac{1}{4}$	...	27 $\frac{1}{4}$	...	6+6	...	Dunrobin	Duke of Sutherland.
36	4 $\frac{3}{4}$	...	26 $\frac{1}{2}$	...	6+6	...	Langwell	Duke of Portland.
36	4 $\frac{1}{4}$	21 $\frac{1}{2}$	27	...	6+6	...	Caenlochan	Mrs. Henry Tate.
-36	4 $\frac{3}{4}$	...	32 $\frac{1}{4}$	...	5+5	...	Inchbaie	F. L. Davis.
36	4 $\frac{1}{2}$	17	28 $\frac{3}{4}$	31 $\frac{1}{4}$	5+5	225	Meoble	E. M. Crosfield.
35 $\frac{3}{4}$	4 $\frac{5}{8}$	22 $\frac{1}{4}$	31 $\frac{1}{4}$	34	5+5	...	Strathvaich	Do.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
36	4 $\frac{5}{8}$	10 $\frac{3}{4}$	28 $\frac{3}{4}$	30 $\frac{1}{2}$	5+4	... lbs.	Ardgour	Lord H. Vane Tempest.
36	5 $\frac{1}{4}$	13 $\frac{3}{4}$	28 $\frac{3}{4}$	32 $\frac{1}{4}$	5+5	...	Glenkingie	W. M. Christy.
36	4 $\frac{1}{4}$	...	31	...	5+5	308	N. Uist	W. Brigstock.
36	4 $\frac{5}{8}$	...	26 $\frac{1}{2}$	...	5+6	...	Morar	W. A. Dewhurst.
-36	5 $\frac{5}{8}$	...	30 $\frac{1}{2}$	...	6+7	...	Glenquoich	J. E. B. Baillie.
-36	4 $\frac{3}{4}$	...	27	...	2+2	276	Glenfinnan	F. Fenwick.
-35 $\frac{3}{4}$	4 $\frac{3}{4}$	...	26	...	6+6	...	N. Uist	C. H. Dendy.
-35 $\frac{3}{4}$	4 $\frac{1}{4}$	...	32 $\frac{1}{2}$	...	5+5	...	Affarie	L. A. Ballance.
-35 $\frac{5}{8}$	4 $\frac{5}{8}$	23	28 $\frac{1}{2}$	31	4+4	...	Dalnamein	C. T. Garland.
35 $\frac{3}{4}$	4 $\frac{1}{2}$	...	29 $\frac{1}{4}$	...	6+5	...	Garrygualach	Major H. G. Fenton-Newall.
-35 $\frac{1}{2}$	4 $\frac{1}{2}$	...	31	...	5+5	...	Loch Choire	Duke of Sutherland.
-35 $\frac{1}{2}$	4 $\frac{3}{4}$	...	27 $\frac{3}{4}$	...	12	...	Ardnamurchan	R. C. Donaldson-Hudson.
35 $\frac{1}{2}$	5 $\frac{1}{2}$	...	25 $\frac{1}{2}$	...	6+6	244	Sutherland	Abel Chapman.
-35 $\frac{1}{2}$	4 $\frac{3}{4}$	...	27	...	5+5	...	Branlen	Earl of Derby.
35 $\frac{1}{2}$	4 $\frac{1}{2}$	11 $\frac{1}{2}$	26 $\frac{1}{4}$	30	6+6	...	Isle of Mull	W. Mure.
35 $\frac{1}{2}$	4 $\frac{3}{4}$	...	26 $\frac{1}{2}$	...	10+10	...	Glenquoich	Dowager Lady Burton.
35 $\frac{1}{2}$	4 $\frac{1}{2}$	...	24 $\frac{3}{4}$	...	6+6	...	Craiganour	H. Samuelson.
35 $\frac{1}{2}$	4 $\frac{3}{4}$	...	31 $\frac{3}{4}$	...	5+5	...	Benula	Stanley M. Dennis.
35 $\frac{1}{2}$	4 $\frac{1}{2}$	24 $\frac{1}{2}$	29 $\frac{3}{4}$	32 $\frac{1}{2}$	5+5	...	Ben Alder	Lord Hythe.
-35 $\frac{1}{2}$	6	...	38 $\frac{1}{2}$	...	5+5	...	Kinlochewe	Sir Kenneth Mackenzie, Bart.
-35 $\frac{3}{8}$	4 $\frac{1}{2}$	...	30	...	4+4	...	Gaick	J. Hargreaves.
35 $\frac{1}{4}$	5	25	30 $\frac{1}{4}$	35	6+4	...	Coignafern	J. Bradley Firth.
35 $\frac{1}{4}$	5	...	25 $\frac{1}{4}$	...	7+8	...	Ardverikie	Sir J. W. Ramsden, Bart.
-35 $\frac{1}{4}$	...	...	27 $\frac{3}{8}$	...	14	...	Glenfeshie	Sir G. A. Cooper, Bart.
35 $\frac{1}{4}$	4 $\frac{1}{2}$	...	29 $\frac{1}{2}$	...	6+6	248	Invercauld	L. Neumann.
-35 $\frac{1}{4}$	5	...	24 $\frac{3}{4}$	...	6+5	...	Eskadale	Major A. Robinson.
-35 $\frac{1}{4}$	5 $\frac{1}{4}$	...	27 $\frac{1}{4}$	...	6+6	...	Blackmount	Countess of Sefton.
-35 $\frac{1}{4}$	4 $\frac{7}{8}$	7 $\frac{3}{8}$	22	27 $\frac{3}{8}$	7+7	...	Killiechonate	F. Cooper.
-35 $\frac{1}{4}$	5 $\frac{1}{2}$	...	26 $\frac{1}{4}$	...	5+5	...	Glenfinnan	G. Bainbridge.
-35 $\frac{1}{4}$	4 $\frac{7}{8}$	31 $\frac{7}{8}$	30	...	6+6	...	Deanich, Ross-shire	G. P. V. Aylmer.

- Owner's measurements.

RECORDS OF BIG GAME

Length on outside curve.	Circumference between bez and trez	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
-35 $\frac{1}{4}$	5 $\frac{1}{4}$	...	26	...	7+7	...	Glenartney	Dowager Countess of Ancaster.
-35 $\frac{1}{4}$	5	...	32 $\frac{1}{2}$	...	6+6	...	Ardnamurchan	C. D. Rudd.
35 $\frac{1}{8}$	4 $\frac{1}{4}$	...	33	...	4+3	...	Caenlochan	J. J. de Knoop.
35	4 $\frac{5}{8}$	13 $\frac{3}{8}$	24 $\frac{1}{2}$	29	5+5	...	Glenkingie	W. M. Christy.
35	4 $\frac{3}{4}$	22	28	...	7+6	...	Talladh-a-Bheithie, Rannoch	E. Weller-Poley.
-35	...	...	...	34	10	225	N. Morar	Major T. W. Gill.
-35	...	...	29	41 $\frac{1}{4}$	7+6	...	Monymusk	Sir Arthur Grant, Bart.
-35	4 $\frac{3}{4}$	...	38 $\frac{1}{4}$	...	5+4	...	Invermark	Earl of Dalhousie.
35	4 $\frac{1}{2}$	12 $\frac{3}{4}$	24 $\frac{5}{8}$	27	6+6	...	Glenbruar	A. M. Thomas.
35	4 $\frac{3}{8}$	...	29 $\frac{1}{2}$	...	6+5	...	Glenartney	V. Fleming.
¹ -35	5 $\frac{3}{4}$	26	33 $\frac{1}{2}$	37 $\frac{1}{2}$	12	...	Guisachan	The late Lord Tweedmouth.
35	4 $\frac{1}{2}$	19 $\frac{1}{4}$	26 $\frac{3}{4}$	28 $\frac{1}{2}$	5+5	...	Glenkingie	Sir Henry Hoare, Bart.
-35	4 $\frac{3}{4}$	...	29	...	4+4	...	Ledgowan	L. A. Ballance.
34 $\frac{3}{4}$	4 $\frac{1}{4}$	13 $\frac{1}{4}$	26	28 $\frac{1}{4}$	5+5	...	Dibiedale	H. Hinton.
34 $\frac{3}{4}$	4 $\frac{3}{4}$	...	32 $\frac{1}{4}$	...	6+6	...	Glenborrodale	Captain N. Money.
34 $\frac{3}{4}$	4 $\frac{1}{4}$	31	36 $\frac{3}{8}$	38 $\frac{1}{4}$	4+3	...	Ledgowan	H. B. Moser.
34 $\frac{3}{4}$	4 $\frac{1}{4}$	23 $\frac{1}{2}$	29	31 $\frac{1}{2}$	5+4	...	Kildermorie	H. Graeme.
-34 $\frac{1}{2}$	4 $\frac{7}{8}$	...	33 $\frac{1}{2}$	...	5+5	...	Fannich	V. Watney.
-34 $\frac{1}{2}$	5	...	25 $\frac{1}{2}$	...	7+8	...	Cluanie	A. H. Straker.
¹ 34 $\frac{1}{2}$	4 $\frac{1}{4}$	26 $\frac{1}{2}$	31	33 $\frac{1}{4}$	5+5	...	Dalnaspidal	Mrs. Hall Walker.
34 $\frac{1}{2}$	4 $\frac{1}{2}$	...	23	...	6+6	...	Glentannar	Ean Cecil.
34 $\frac{1}{2}$	5 $\frac{1}{2}$	18	26 $\frac{1}{4}$	34	6+5	...	?	W. Brodrick Cloete.
34 $\frac{1}{2}$	5 $\frac{1}{4}$	37 $\frac{1}{2}$	34 $\frac{1}{2}$	...	12	...	Braemore	Sir John Fowler, Bart.
34 $\frac{1}{2}$	4 $\frac{1}{4}$	18 $\frac{1}{4}$	27	...	6+5	...	N. Morar	J. R. Hutchison.
34 $\frac{1}{2}$	4 $\frac{1}{4}$	...	33	...	6+5	...	Isle of Skye	W. H. Lindsay.
² -34 $\frac{1}{2}$	5	...	...	34 $\frac{1}{2}$	12	231 (clean)	Glentilt	Duke of Atholl.
34 $\frac{1}{4}$	4 $\frac{3}{4}$	13	25	27	3+3	...	Glenfeshie	P. K. Smiley.
34 $\frac{1}{4}$	4 $\frac{5}{8}$	22	28 $\frac{1}{2}$	31 $\frac{5}{8}$	6+4	204	Cluanie	St. George Littledale.
34 $\frac{1}{4}$	4 $\frac{1}{2}$	...	26 $\frac{1}{2}$	...	6+5	...	Mamore	F. Bibby.
34 $\frac{1}{4}$	4 $\frac{3}{4}$	...	29	...	9+8	...	Ardverikie	Viscount Iveagh.
-34 $\frac{1}{4}$	4 $\frac{1}{4}$	...	26	28 $\frac{1}{4}$	4+4	...	Wyvis	J. F. Wilkin.

- Owner's measurements.

¹ Above trez.² Recorded by J. G. Millais.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
34 $\frac{1}{4}$	4	21 $\frac{3}{4}$	29 $\frac{1}{4}$	31 $\frac{3}{4}$	6+5	...	Glenquoich	Duchess of Bedford.
-34 $\frac{1}{4}$	4 $\frac{1}{4}$	8 $\frac{3}{8}$	21 $\frac{3}{4}$	29 $\frac{5}{8}$	5+5	...	Glence	J. Bayly.
-34 $\frac{1}{8}$	5	...	31 $\frac{1}{2}$	...	5+5	...	Knoydart	Capt. H. V. S. A. Bowlby.
34	4	28 $\frac{1}{2}$	30 $\frac{3}{4}$	...	5+4	...	Glenmuick	Lieut.-Col. J. Ponsonby.
34	4 $\frac{3}{8}$	...	27 $\frac{1}{4}$	...	6+6	...	Balmoral	His Majesty the King.
-34	5	...	26 $\frac{1}{2}$	...	12	...	Achnacarry	J. C. Kennedy.
34	4 $\frac{3}{4}$	...	36	...	5+5	308	Jura	Lord George Campbell.
-34	4 $\frac{1}{8}$	...	28	...	7+7	...	Kildermorie	L. Wilkin.
-34	4 $\frac{3}{8}$	...	34 $\frac{1}{2}$	36 $\frac{1}{2}$	6+6	...	Glenbrnar, Perthshire	Sir W. Ogilvy-Dalgleish, Bart.
-34	...	...	...	...	6+6	268 (clean)	...	S. Loder.
-34	4 $\frac{3}{4}$	...	27 $\frac{7}{8}$	...	6+5	...	...	Col. Stephenson R. Clarke.
33 $\frac{3}{4}$	4 $\frac{1}{4}$	30 $\frac{1}{2}$	35	38 $\frac{1}{4}$	7+6	...	Glenkingie	W. M. Christy.
33 $\frac{3}{4}$	4	...	24 $\frac{1}{4}$	...	7+8	...	Ardverkie	E. J. Wythes.
-33 $\frac{3}{4}$	4 $\frac{1}{2}$	...	26	...	5+6	...	Ardnamurchan	Mrs. R. Fleming.
-33 $\frac{1}{2}$	5	...	34 $\frac{1}{2}$	...	5+5	280	Dalness	J. G. Millais.
33 $\frac{1}{2}$	4 $\frac{1}{4}$	...	34	...	5+5	...	Gaick	R. Hargreaves.
33 $\frac{1}{2}$	4	16 $\frac{1}{2}$	25	29	5+5	...	Caenlochan	H. C. Pilkington.
33 $\frac{1}{2}$	4 $\frac{7}{8}$	25 $\frac{5}{8}$	24 $\frac{1}{2}$	35 $\frac{1}{4}$	9+8	...	Glenfiddich	Duke of Richmond and Gordon.
33 $\frac{1}{2}$	4 $\frac{1}{2}$	22	28	30 $\frac{1}{2}$	6+5	...	Auchnasheen	A. G. Dickson.
-33 $\frac{1}{2}$	5 $\frac{5}{8}$	...	25 $\frac{3}{4}$	...	6+6	...	Eskadale	Hon. L. Hardy.
33 $\frac{1}{2}$	4 $\frac{1}{2}$	...	27	...	12	...	Kintail	Sir Edmund G. Loder, Bart.
-33 $\frac{1}{2}$	5	...	24 $\frac{3}{4}$	...	11	...	Forest Lodge	Lieut.-Col. H. Kays.
33 $\frac{1}{2}$	5	...	30	...	5+7	...	Dalness	Hon. Sir Schomberg M'Donnell.
-33 $\frac{3}{8}$	3 $\frac{7}{8}$	26	31	34 $\frac{1}{2}$	6+5	...	Dundonnell	R. B. Loder.
33 $\frac{1}{4}$	4	19 $\frac{3}{4}$	26	32	6+6	...	Ben Alder	Sir R. W. Buchanan Jardine, Bart.
33 $\frac{1}{4}$	4 $\frac{1}{4}$	...	19 $\frac{3}{4}$	...	7+7	...	Glendoe	Mrs. E. Ross.
33 $\frac{1}{4}$	4 $\frac{1}{4}$	17 $\frac{1}{4}$	28	29 $\frac{1}{2}$	5+5	...	Ardverkie	Col. W. Hall Walker.
33 $\frac{1}{4}$	4 $\frac{3}{8}$	...	26	...	5+5	285	Inverailort	J. Cameron Head.
-33 $\frac{1}{4}$	4 $\frac{3}{4}$	...	23 $\frac{1}{2}$	...	6+6	...	Ainisdale	T. Drake.
33 $\frac{1}{4}$	4	12 $\frac{5}{8}$	22 $\frac{3}{4}$	25	5+4	233	Glencoul	Lieut. - Col. A. Weston Jarvis.

The spread of the six widest heads in the late Duke of Fife's collection is as follows:—

40 38 37 35 35 35

The six longest measuring—37 36 35 $\frac{1}{2}$ 35 $\frac{1}{2}$ 35 35

- Owner's measurements.

The antlers of one of the red deer in Mr. C. Lucas's park at Warnham Court, Sussex, in 1889, had 35 points; 1890, 34 points; 1891, 38 points; 1892, 47 points, and weighed 17 lbs.; 1893, 44 points, 16½ lbs.

b.—Irish Specimens (wild and park).

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Weight.	Locality.	Owner.
1-42½	...	...	...	...	12	315	Colebrooke	The late Sir Douglas
-41	6	17½	23	...	10+9	325	Do.	Brooke, Bart. Do.
-40	5½	28	29½	...	8+8	355	Do.	Do.
39½	5¼	14½	26¾	...	7+7	375	Do.	Do.
38	5½	15¼	26¼	32¼	7+7	...	Do.	W. Campbell.
38	5½	9¾	23¾	...	8+8	...	Roscommon	Earl of Kingston.
37½	5¼	23¾	28½	34½	6+5	380	Muckcross	A. Vincent.
35¾	5¾	...	35	...	5+5	264	Glenveagh	W. E. Laurie.
35¾	5¾	...	20¼	...	7+7	...	Muckcross	Ralph Sneyd.
35	5	22	30¼	36¾	6+5	343	Roscommon	Earl of Kingston.
35	4¾	...	30	...	9	...	Ireland	Hon. A. Charteris.
-35	4¾	25¼	30	37½	6+6	260	Glenveagh	A. Arthur.
35	5½	19½	26¾	...	6+5	282	Powerscourt	Viscount Powerscourt.
34¼	5	...	29	...	7+6	348	Glenveagh	G. W. Hartley.
34	4½	25½	28½	...	6+6	...	Powerscourt	Viscount Powerscourt.
34	4¾	...	31½	...	6+5	372	Muckcross	Ralph Sneyd.
34	4½	13½	25	...	5+5	...	Colebrooke	Major J. M. Rogers.
33¼	5	24	29½	34¼	8+7	360	Muckcross	A. Vincent.
33	4¾	...	24	...	5+5	346	Glenveagh	Col. W. Hall Walker.
33	5	20	28¼	...	5+5	281	Do.	W. W. Ashley.
32½	5¼	...	24¾	...	7+6	422	Glena	Earl of Kenmare.
32¼	4¼	...	32¼	...	5+6	...	Killarney	G. Douglas.
31¾	5	25¾	31¾	...	5+6	...	Donegal	Col. W. Hall Walker.
31¾	4¾	...	21¾	...	7+7	...	Muckcross	Lord Mayo.
31¾	4½	15	25¾	29¼	5+4	...	Do.	F. G. Menzies.
31½	5	14¾	25¾	27¾	6+5	276	Do.	C. E. Russell.

- Owner's measurements.

¹ See Millais's *British Deer and their Horns*.



Head of Exmoor Red Deer. Mr. R. A. Sanders.

c.—West of England Specimens.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Locality.	Owner.
41	5 $\frac{1}{4}$	21 $\frac{1}{2}$	32 $\frac{1}{4}$	...	5+5	Exmoor	Sir John Heathcoat-Amory, Bart.
40	5 $\frac{7}{8}$	10	28	38	7+6	Do.	Do.
39	5 $\frac{3}{4}$	15 $\frac{3}{4}$	28 $\frac{1}{2}$	...	6+6	Do.	R. A. Sanders.
39	5 $\frac{3}{8}$	13 $\frac{1}{4}$	27 $\frac{1}{4}$	34 $\frac{3}{4}$	4+4	Do.	P. F. Hancock.
38 $\frac{1}{2}$	5 $\frac{1}{8}$	17 $\frac{7}{8}$	31 $\frac{1}{2}$	...	6+6	Quantock Hills	Earl Fortescue; killed in 1885.
38 $\frac{1}{2}$	5	22 $\frac{1}{4}$	30 $\frac{1}{4}$	...	7+7	Exmoor	C. Nelder; killed in 1803.
38 $\frac{1}{4}$	6	8 $\frac{1}{2}$	24	32	6+6	Kiloe	Hon. Mrs. Stanley.
37 $\frac{3}{4}$	5	7	29 $\frac{1}{2}$	34	5+5	?	J. James.
37 $\frac{1}{2}$	5 $\frac{1}{2}$	27 $\frac{1}{2}$	35 $\frac{5}{8}$	48	6+5	Exmoor	Sir John Heathcoat-Amory, Bart.
37 $\frac{1}{4}$	4 $\frac{3}{4}$	20	31 $\frac{3}{4}$	36	6+5	Quantock	E. A. V. Stanley.
37	5	23	33 $\frac{1}{2}$	39 $\frac{3}{4}$	6+7	Bembridge Wood	Capt. H. H. Amory.

¹ Weight, 333 lbs. clean. Length of brow-tine, 17 inches.

RECORDS OF BIG GAME

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Locality.	Owner.
36 $\frac{3}{4}$	6	21 $\frac{1}{2}$	28 $\frac{7}{8}$	...	6+7	Exmoor	Lord St. Audries; killed in 1893.
36 $\frac{1}{2}$	5 $\frac{5}{8}$	12	23 $\frac{5}{8}$	30 $\frac{1}{2}$	7+6	Stoodleigh	Ian H. Amory.
-36 $\frac{1}{2}$	..	19	28 $\frac{3}{8}$	39	6+6	Haddon	M. Greig.
36	4 $\frac{3}{4}$	10	24 $\frac{3}{8}$	30 $\frac{1}{4}$	9+7	Exmoor	R. A. Sanders.
36	5 $\frac{1}{4}$	12 $\frac{1}{8}$	23	29 $\frac{1}{2}$	6+5	Do.	Capt. H. H. Amory.
36	5 $\frac{3}{8}$	14 $\frac{3}{4}$	26	34 $\frac{1}{2}$	7+6	Do.	M. Greig.
35 $\frac{3}{4}$	5	15 $\frac{1}{4}$	27	33	6+6	Do.	Hon. G. Bampfylde.
35 $\frac{1}{2}$	5	20 $\frac{7}{8}$	27 $\frac{1}{2}$	...	6+6	Do.	Earl Fortescue; killed in 1812.
35 $\frac{1}{2}$	5	14 $\frac{3}{4}$	27 $\frac{3}{4}$	34	6+6	Cudden Hoyes	Capt. H. H. Amory.
35	5	15 $\frac{3}{4}$	27	...	6+5	Exmoor	Com. G. F. Inglefield, R.N.
35	4 $\frac{7}{8}$	25 $\frac{1}{2}$	32 $\frac{1}{4}$	...	5+6	Do.	Sir C. T. D. Acland, Bart.; killed in 1893.

d.—English and other Park Specimens.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight (clean).	Locality.	Owner.
45	7 $\frac{1}{8}$	...	...	...	11+11	lbs.	Warnham	C. J. Lucas.
¹ 44	5 $\frac{3}{4}$	23 $\frac{1}{4}$	33 $\frac{1}{2}$	51 $\frac{1}{4}$	12+9	...	Woburn	Duke of Bedford.
43 $\frac{3}{4}$	5 $\frac{1}{2}$	24 $\frac{1}{4}$	35 $\frac{1}{4}$	39	6+6	...	Windsor	His Majesty the King.
42 $\frac{1}{2}$	6 $\frac{3}{4}$	...	...	40	12	...	Melbury, Dorset	Earl of Ilchester.
42 $\frac{1}{2}$	5 $\frac{5}{8}$	...	27	...	11+10	...	Ashridge Park	Earl Brownlow.
41 $\frac{1}{4}$	5 $\frac{1}{2}$	18 $\frac{3}{4}$	28 $\frac{3}{4}$	37 $\frac{3}{4}$	9+8	...	?	Lord Hastings.
¹ 41 $\frac{1}{4}$	5	22 $\frac{3}{4}$	32	...	7+6	...	Langley Park	J. G. Millais.
40 $\frac{3}{4}$	5 $\frac{1}{2}$	18 $\frac{3}{4}$	31	41	5+5	...	?	R. V. Berkeley.
40 $\frac{1}{2}$	5 $\frac{3}{4}$	...	...	...	10+8	...	Vaynol	J. Whitaker.
*40	5	...	34 $\frac{3}{4}$	...	8+7	330	Caithness-shire	T. Pilkington.
40	...	...	39	...	32	...	Warnham	J. G. Millais.
40	4 $\frac{3}{4}$	25	33 $\frac{1}{2}$	40 $\frac{1}{2}$	6+7	...	?	W. Cooper.
² 39 $\frac{1}{2}$	5 $\frac{3}{4}$	23 $\frac{1}{2}$	26 $\frac{3}{4}$	35 $\frac{3}{4}$	5+5	...	Woburn	Duke of Bedford.
³ 39	5 $\frac{1}{2}$	...	25 $\frac{1}{4}$	...	5+6	...	Ditchley Park	Viscount Dillon.
-39	5 $\frac{1}{2}$	...	23 $\frac{1}{2}$	...	...	...	Bushey Park	R. Shoolbred.
39	5 $\frac{1}{4}$	18 $\frac{1}{2}$	27 $\frac{3}{4}$	33 $\frac{1}{2}$	6+6	...	?	W. Cooper.
39	4 $\frac{3}{4}$	18 $\frac{1}{2}$	28 $\frac{1}{2}$	37	8+8	...	Osmaston	Sir Peter Walker, Bart.
-38 $\frac{1}{4}$	5	17	27 $\frac{1}{4}$	32 $\frac{1}{2}$	6+6	...	Whittlebury	Sir Edmund G. Loder, Bart.
37 $\frac{1}{2}$	5 $\frac{1}{2}$	22	29 $\frac{1}{2}$	41 $\frac{1}{2}$	8+7	...	Stowe	H.R.H. le Duc d'Orléans.

- Owner's measurements.

¹ Shed antlers.² White Stag.³ Killed by King James I. in 1602.

* Semi-feral.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight (clean).	Locality.	Owner.
* 37½	5	...	29½	42¼	6+7	lbs.	Warnham	C. J. Lucas.
-37½	7½	29½	27½	36½	10+9	...	Welbeck	Duke of Portland.
¹ 37½	5⅝	...	33¼	...	6+7	...	Ditchley Park	Viscount Dillon.
-37	6⅝	18½	24	43	20+19	...	Warnham	C. J. Lucas.
37	6	26	33½	...	11+13	...	Do.	Do.
36¼	4⅝	19	29¼	32½	4+4	...	Wood Norton	H.R.H. le Duc d'Orléans.
35½	5	22¾	28¾	33¼	6+6	...	Do.	H.R.H. the Comtesse de Paris.
35½	5	7½	20	25	6+6	...	?	H. S. O'Brien.
35	5¼	19½	24¼	29½	10+9	...	?	Hon. M. Egerton.
34½	7	32	29½	52¼	11+15	...	Warnham	C. J. Lucas.
34¼	4½	22	27¾	34½	6+6	...	Windsor	G. L. Harrison.
34	4½	...	23	...	6+6	...	Stowe	H.R.H. the Comtesse de Paris.
34	5⅝	21¾	28½	...	7+7	...	Dorset	Earl of Ilchester.
34	6	24½	32	37½	10+10	...	?	Earl of Warwick.
² 33½	5	20¼	24¼	31½	5+5	...	Surrenden	W. Winans.
33½	4⅞	...	33	...	6+6	...	Stowe	H.R.H. le Duc d'Orléans.

Some of the above measurements are recorded by Mr. J. G. Millais in *British Deer and their Horns*.

- Owner's measurements. ¹ Killed by King James I. in 1610. ² White Stag. * Semi-feral.

e.—Ancient British and Irish Specimens.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Where found.	Owner.
-47½	8	35	...	...	5+8	Manchester Ship Canal excavations	Sir R. M. Brooke, Bart.
46	5½	18¾	31¼	37½	9+8	Achvarasdal	T. Pilkington.
40¼	5½	21½	27	38½	...	Forfarshire	Sir Edmund G. Loder, Bart.
40	7½	22¼	28½	43¼	12+9	Combermere	Duke of Westminster.
38½	5	18	30	39¼	8+6	Ireland	Viscount Powerscourt.
38½	6¼	30	36¼	45⅝	7+5	N. Wales	Sir R. Williams-Bulkeley, Bart. (See illustration.)
-37	5½	23½	...	39¼	13+8	Co. Leitrim	J. Ormsby Lawder.
36½	5	24	25	35½	8+8	Ireland	Viscount Powerscourt.
36	5½	23	27	37½	10+9	Kerry, Ireland	Sir Edmund G. Loder, Bart.
35½	5¼	18½	25½	32½	7+7	Lincolnshire	C. W. Tindall.
35½	5¼	26½	32¾	42½	13+11	South Ireland	Sir Victor Brooke's Collection.
33	5¼	23	28	41	7+6	Cardigan Bay	H. Marshall.
30½	5	10½	20	24¾	9+8	?	Duke of Bedford.

- Owner's measurements.



Head of New Zealand Red Deer. Shot by Mr. H. E. Hodgkinson.

f.—New Zealand Specimens (introduced).

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
48	6½	7¼	32¾	40¼	6+5	...	Rakaia.	C. Williams.
47½	7	...	...	37½	6+6	...	Do.	G. Garrard.
-46	5¼	...	37½	42	6+6	...	N. Otago	H. E. Hodgkinson.
-46	5½	...	31	38½	6+6	...	Do.	Melville Gray.
-45	6	...	27¾	36	6+6	...	Do.	H. E. Hodgkinson.
45	5¾	16½	31	40¾	6+7	...	Do.	P. F. Hadow.
-45	5	...	...	34	6+6	...	Do.	Major Cliff.
-45	5½	...	...	37½	13	...	Do.	J. Forbes.
44½	5	8¼	30	36¾	6+6	...	Do.	H. M. Cliff.
-44¼	5½	...	33½	37½	7+7	...	Do.	C. D. Hodgkinson.
44¼	5	...	...	39¾	7+6	...	Do.	P. F. Hadow.
-44	5½	...	...	40	15	...	Do.	A. Cowie.
-44	5½	...	...	38	5+6	...	Do.	A. E. Leatham.
43½	5¾	...	30	37	7+7	...	Do.	C. E. Lucas.
-43	5¼	...	...	38½	6+6	...	Do.	J. Horn.
-43	5½	...	...	33	7+7	...	Do.	J. Grindells.
42¾	5¾	22	32¾	40¼	7+7	...	Do.	W. H. Milburn.
-42½	5¼	...	...	37½	6+6	...	Do.	R. E. Clouston.
42¼	5	...	29½	...	6+6	...	Do.	G. N. Horlick.
-42	4¾	...	32	...	6+6	...	Do.	D. Fraser.
-42	5¾	...	38¾	50	7+7	...	Do.	J. Faulks.

- Owner's measurements.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
42	5½	24⅝	33½	37¼	6+5	...	?	A. D. Whatman.
-41¾	5¼	...	...	38¾	7+8	...	N. Otago	H. E. Hodgkinson.
-41½	5	...	...	37½	6+7	...	Do.	J. Forbes.
-41½	5½	...	...	36½	6+6	...	Do.	The late B. Armytage.
-41½	5½	...	...	34¾	7+6	...	Do.	Melville Gray.
-41½	5¼	...	35	...	5+4	...	Do.	H. F. Wallace.
-41¼	5¼	...	33½	39½	7+7	...	Do.	C. D. Hodgkinson.
-41	5	...	...	39½	6+7	...	Do.	R. M. Morten.
-41	6¼	...	...	36½	6+5	...	Do.	J. S. Handyside.
-41	6	...	...	38	5+4	...	Do.	D. Bell.
-41	5⅝	...	...	38	18	...	Do.	Baron von Kusserov.
-41	6	...	...	37	7+6	...	Do.	C. R. Westmacott.
-40½	6	...	...	38	5+5	...	Do.	R. Nicholson.
40½	5¼	31¾	37½	40	6+6	...	Do.	Capt. I. Macdougall.
-39½	5½	...	...	29½	10+10	...	Do.	J. Faulks.
-39	7	...	30½	35½	6+6	...	Wairarapa	C. P. Skenett.
38¾	5¼	15	26	31½	6+6	...	Do.	E. N. Senior.
38½	6¼	...	...	33	6+6	...	Do.	A. Pilkington.
38½	6½	...	28	36	17	...	Do.	E. W. Bunny.
-38	5	...	...	33	6+6	...	Do.	E. C. Studholm.
37¾	5½	15¾	21¼	26	5+5	...	Otago	P. M. Stewart.
36½	5½	18¼	29½	32¾	5+5	...	Wairarapa	A. Murray.

- Owner's measurements.



Antlers of Ancient British Red Deer, belonging to Sir Richard Williams-Bulkeley, Bart.



Head of Spanish Red Deer,
shot by H.R.H. Prince Arthur of Connaught.

B.—SPANISH RED DEER (*C. elaphus hispanicus*).

Length on outside curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
43	5½	15¾	33½	35	6+6	Sierra Morena . . .	J. M. Power.
41¾	4½	18	34	37¾	6+4	El Pardo	Duke of Arion.
¹ -40	...	...	36½	...	17	Sierra Morena . . .	Abel Chapman.
38⅝	4¾	16⅜	28	35	8+7	El Pardo	H.M. The King of Spain.
-37½	...	...	34½	...	15	Sierra Morena . . .	Abel Chapman.
36	4¼	26	33¼	37½	7+6	El Pardo	H.R.H. Prince Arthur of Connaught.
-35¼	5¼	20⅞	31⅞	41⅝	7+7	Sierra Morena . . .	Duke of Arion.
-34⅝	4⅞	13⅝	26⅞	31½	6+5	Do.	Do.
33	4⅝	21½	30	37	13	?	Prince E. Demidoff.

- Owner's measurements.

¹ A mountain head. There are two races in Spain. By far the largest are those of the "sierras" (or mountains), where good heads run from 30 to 40 inches. The stags of the "cotos" (or wooded plains) seldom reach, and rarely exceed, 30 inches in antler-length, and the heaviest weighed 205 lbs. clean.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
-32½	...	...	...	...	13	Plains of Andalusia .	W. J. Buck.
-31½	4 $\frac{9}{16}$	18 $\frac{5}{16}$	24 $\frac{15}{16}$	30 $\frac{3}{4}$	7+7	Valle de Viejas .	Duke of Arion.
-31	4 $\frac{15}{16}$	18 $\frac{15}{16}$	24½	34½	9+7	Montes de Toledo .	Do.
-31	4 $\frac{5}{8}$	28	...	...	15	Coto Doñana .	P. Garvey.
-29	5½	...	25	...	12	Andalusia .	Abel Chapman.

C.—NORWEGIAN RED DEER (*C. elaphus atlanticus*).

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
-34½	6½	...	...	34 $\frac{5}{8}$	...	lbs.	Norway .	J. S. Brunn.
-34	...	...	...	...	7	...	Do. .	J. H. Thomas.
31 $\frac{3}{4}$	4 $\frac{3}{4}$	...	25½	...	6+5	...	Do. .	A. Brassey.
31½	4½	...	24½	...	5+5	...	Do. .	Sir H. Seton-Karr.
31½	4 $\frac{3}{4}$	...	28	...	4+3	...	Do. .	E. M. Denny.
31	5½	27½	24 $\frac{1}{8}$	33 $\frac{3}{4}$	8+4	...	Do. .	J. H. Thomas.
30	5	...	29	...	12	280	Do. .	E. M. Denny.
30	4½	29½	30 $\frac{3}{4}$	33	5+4	...	Do. .	Sir H. Seton-Karr.
29½	4 $\frac{5}{8}$	26	30½	...	6+5	...	Do. .	G. L. Denman.

- Owner's measurements.

D.—GERMAN (*C. elaphus germanicus*) and CARPATHIAN RED DEER.

The Carpathian red deer, as represented in the Marmoros Forest, appear to be in some degree intermediate between the western and eastern races, having the short face and red-brown summer coat of the former, but tending to blackness on the under-parts as in the latter. West Carpathian deer, at any rate, may however be inseparable from *C. e. germanicus*. In Marmoros there is a second deer, the Polish, or wandering stag, reported to be an immigrant from Galician Poland, which has been regarded as a dwarf form of the maral. In the Bukowina district of the Galician Carpathians there occurs a large grey stag in the plains and a smaller and darker one in the mountains.



Skulls and Antlers of Carpathian Red Deer killed on the estate of the late Prince Henry of Liechtenstein at Tartarow, Galicia.



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Skull and Antlers of Carpathian Red Deer shot by the late Prince Henry of Liechtenstein at Tartarow, Galicia, 1895. Length of antler, 46 inches. Weight, 20 lbs. 14 oz.

Number of points.	Weight avoidupois, lbs. or	Length along curve.	Circum- ference of burr.	Circum- ference above burr.	Circumfer- ence above middle point.	Circumfer- ence below crown.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Weight of stag.	Locality.	Owner.
16	23 0 $\frac{1}{2}$	53 $\frac{3}{8}$	9 $\frac{1}{2}$	8 $\frac{3}{8}$	7 $\frac{3}{8}$	7 $\frac{3}{8}$	...	...	...	...	526	Zemplen, Hungary	Count Géza Andrassy.
-18	over 20 lbs.	53 $\frac{9}{16}$	11 $\frac{1}{2}$	10	15 $\frac{1}{2}$	15 $\frac{1}{2}$	10	...	...	...	453	Galicia	H. R. H. D. Miguel, Duke of Braganza.
11	...	52 $\frac{1}{2}$	...	...	...	...	6 $\frac{5}{8}$	14 $\frac{3}{8}$	34 $\frac{1}{2}$	40	...	Transylvania	Rhys Williams.
-18	20 5	52	...	...	...	...	7-25	...	32-75	45	504	Galicia	E. N. Buxton.
-18	19 1	51 $\frac{5}{16}$	10 $\frac{5}{8}$	8 $\frac{1}{2}$	61 $\frac{1}{16}$	8 $\frac{1}{2}$	...	...	...	...	...	Ungvár	Count Béla Szcéhenyi.
-14	23 0	51	11	8 $\frac{1}{2}$	7	9	7-20	27	38	47	519	Zemplen Comitat	Count Géza Andrassy.
1 14	21 0	51	11 $\frac{1}{16}$	9 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	7 $\frac{1}{2}$	28	39	50	...	Hungary	Sir Edmund G. Loder, Bart.
-16	...	50 $\frac{7}{16}$	11 $\frac{1}{16}$	...	...	...	...	...	...	...	...	Do.	Count Géza Andrassy
-21	21 3	50-4	...	6-08	...	...	...	30	...	55-9	...	Pilis Moun- tains	Duke of Ratibor.
-14	20 8	50	11 $\frac{1}{16}$	9 $\frac{1}{2}$	71 $\frac{1}{16}$	6 $\frac{1}{2}$	...	...	...	...	418	Hungary	Archduke Frederick.
-14	...	50	...	...	...	...	6	42	40	...	...	La Mandria	J. I. S. Whitaker.
-18	...	50	...	...	...	...	7 $\frac{1}{2}$	...	...	48	...	Galicia	Rudolph Pick.
-10	...	50	10 $\frac{1}{4}$	7 $\frac{5}{8}$	...	6 $\frac{1}{2}$	...	...	...	...	...	Hungary	Count Béla Szcéhenyi.
-14	31 and an oz. or two	49 $\frac{3}{8}$	...	...	...	...	...	...	39 $\frac{3}{8}$	...	...	Radauc	Prince Lulu Kohan.
21	...	49 $\frac{1}{2}$	10 $\frac{1}{2}$	...	...	...	6 $\frac{1}{2}$	...	37	47 $\frac{1}{2}$	...	Poland	J. G. Millais.
-16	20 0	49-6	10-8	9-3	7-11	9-7	6-8	55-4	43-11	...	433	Hungary	Count Rudolf Erdödy.
-18	...	49 $\frac{1}{8}$	10 $\frac{1}{4}$	91 $\frac{1}{16}$	61 $\frac{1}{16}$	9 $\frac{1}{8}$	...	...	...	48 $\frac{3}{8}$	354	Do.	Count Joseph Hoyos.
13	...	49	...	...	6 $\frac{3}{8}$	...	...	21 $\frac{3}{8}$	33	42 $\frac{1}{2}$	...	Carpathians	P. B. Vander Byl.
-12	21 0	49	101 $\frac{5}{16}$	...	...	...	...	...	...	...	...	Hungary	Prince Philip of Saxe-Coburg and Gotha.
-20	25 3	48-8	...	...	...	...	...	...	...	...	...	S. W. Hun- gary	Prince Hugo Windischgrätz.
14	...	48 $\frac{1}{2}$	...	...	...	...	6 $\frac{1}{4}$	34	30	37 $\frac{1}{2}$	...	Carpathians	Lieut.-Col. L. Marshall.

-19	...	48	...	8 $\frac{7}{8}$	...	...	...	...	...	...	...	...	Moravia .	The late Prince John of Liechtenstein.
-19	...	48	...	9	...	...	...	...	...	27	48	...	Gotha .	H.R.H. the Duke of Saxe-Coburg and Gotha.
20	18 $\frac{3}{4}$	48	9 $\frac{3}{4}$	8 $\frac{3}{4}$	6 $\frac{1}{2}$	7 $\frac{1}{4}$	6 $\frac{1}{2}$	41 $\frac{1}{2}$	33 $\frac{1}{2}$	41 $\frac{1}{2}$	51 $\frac{3}{4}$	...	Germany .	Sir Edmund G. Loder, Bart.
1 18	23 $\frac{1}{2}$	48	10 $\frac{3}{4}$	9 $\frac{1}{2}$	6 $\frac{1}{4}$	8	7	43	38	43	58	...	Hungary .	Do.
-14	23 0	48	10	9 $\frac{1}{2}$	7 $\frac{1}{4}$	12	7 $\frac{1}{2}$	25	13	25	32	519	Galicia .	H.R.H. D. Mignel, Duke of Braganza.
-16	20 9 $\frac{1}{2}$	47 $\frac{3}{8}$	11 $\frac{1}{8}$	9 $\frac{1}{8}$	7 $\frac{1}{16}$	7 $\frac{1}{16}$	...	...	...	...	...	455	Hungary .	Prince Philip of Saxe-Coburg and Gotha.
-16	...	47 $\frac{1}{4}$	11 $\frac{1}{2}$	8 $\frac{1}{4}$	7 $\frac{3}{8}$	8 $\frac{1}{2}$	...	25 $\frac{1}{2}$	35 $\frac{3}{8}$	25 $\frac{1}{2}$	29 $\frac{0}{10}$	532	Do. .	Count Ferdinand Trauttmansdorff.
-13	...	47	...	...	...	...	6 $\frac{1}{4}$	31 $\frac{1}{2}$	12 $\frac{3}{4}$	31 $\frac{1}{2}$	...	...	Galicia .	A. von André.
15	...	47	...	...	...	...	7 $\frac{1}{2}$	39 $\frac{1}{2}$	31 $\frac{1}{2}$	39 $\frac{1}{2}$	48 $\frac{1}{2}$	...	Hungary .	Duke of Portland.
-16	...	46 $\frac{1}{8}$	9 $\frac{1}{2}$	8 $\frac{7}{8}$	...	7 $\frac{1}{2}$	...	...	...	...	...	...	Do. .	Antal Réh.
-12	...	46 $\frac{1}{8}$	11 $\frac{3}{8}$	10 $\frac{1}{4}$	...	6 $\frac{1}{8}$	...	...	...	...	...	...	Do. .	Count Esterhazy.
-18	19 13	46 $\frac{7}{8}$	11	9 $\frac{1}{8}$	6 $\frac{3}{8}$	7 $\frac{1}{2}$	...	...	...	...	...	523	S.W. Hun- gary	Count László Májláth.
-16	22 14 $\frac{1}{2}$	46 $\frac{7}{8}$	12 $\frac{5}{8}$	...	...	...	...	...	...	...	...	...	N.E. Hun- gary	Head-keeper Ganovszky.
-20	20 13	46 $\frac{1}{2}$	9 $\frac{7}{8}$	7 $\frac{11}{16}$	7 $\frac{1}{16}$	7 $\frac{11}{16}$	...	...	...	...	...	583	Do. .	Count Francis Nádasdy.
-16	19 6	46 $\frac{1}{2}$	9 $\frac{1}{4}$	8 $\frac{1}{2}$	6 $\frac{1}{16}$	6 $\frac{1}{16}$	...	...	...	...	...	590	S.W. Hun- gary	Count László Májláth.
-16	...	46 $\frac{1}{2}$	10 $\frac{3}{4}$	...	...	6 $\frac{7}{8}$	...	42	...	42	55	...	Hungary .	J. G. Millais.
-14	...	46 $\frac{3}{8}$	9 $\frac{1}{8}$	8 $\frac{1}{4}$	...	6 $\frac{1}{4}$	...	...	...	...	...	...	Do. .	Count Pal Dégenfeld.
-16	20.68	46.46	11.02	9.45	8.07	6.89	...	...	...	...	...	...	Do. .	Prince Victor Ratibor.
-22	...	46 $\frac{1}{4}$	9 $\frac{11}{16}$	9 $\frac{1}{2}$	6 $\frac{3}{4}$	8 $\frac{11}{16}$	...	39 $\frac{3}{4}$	52 $\frac{7}{8}$	39 $\frac{3}{4}$	42 $\frac{7}{8}$	479	Do. .	Count Max Hoyos.
-20	22 9	46 $\frac{1}{8}$	10 $\frac{5}{8}$	9 $\frac{1}{16}$	6 $\frac{1}{16}$	8 $\frac{5}{16}$	...	...	...	...	...	508	Do. .	Count Béla Széchenyi.
-14	17 11 $\frac{1}{2}$	46 $\frac{1}{8}$	9 $\frac{11}{16}$	8 $\frac{5}{8}$	...	6 $\frac{1}{4}$	...	...	...	...	...	523	?	Count Jenő Zichy.
-16	19.91	46.06	11.81	9.25	6.89	7.28	...	...	...	...	...	...	Hungary .	Count Mitrovsky.
-14	...	46	...	...	...	...	...	36	...	...	...	...	Galicia	The late Prince Henry of Liechtenstein.

1 Found in a marsh.

- Owner's measurements. Many of these specimens are uneven pointers.

Number of points.	Weight avoirdupois, lbs. oz.	Length along curve.	Circumference of burr.	Circumference above middle point.	Circumference below crown.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Weight of stag, lbs.	Locality.	Owner.
-18	...	46	...	9	...	...	...	36	60	...	Gotha	H. R. H. the Duke of Saxe-Coburg and Gotha.
-13	...	46	...	...	...	7½	...	29½	37	...	Carpathians	Prince Altenburg.
18	...	46	10	...	...	...	...	35	54½	...	Bukowina	Count Erlach.
-16	...	45¾	10¾	9½	6¾	...	...	...	...	...	Hungary	Count Emil Széchenyi.
-10	...	45¾	10	8¾	7½	...	...	...	...	...	Do.	Albert Tuhász.
10	19 10½	45½	11½	9¾	7½	...	...	...	...	...	Do.	Count Michael Esterhazy.
14	19 11½	45½	10¾	9½	7½	8½	...	...	...	...	Do.	Archduke Joseph Augustus.
16	19 8	45½	11	9½	7½	...	...	...	...	...	Do.	Head-keeper Ganovszky.
-17	23½	45½	11	9¾	7	7½	41¾	42½	49	...	Do.	Sir Edmund G. Loder, Bart.
-14	...	45¾	9½	8¾	7¾	...	15¾	...	32	...	Do.	Dr. Albert von Stephani.
24	23 4	45½	10¾	8¾	7½	...	...	...	...	...	Do.	Count T. Eitz.
12	20 8	45½	9½	6½	6½	...	...	...	...	572	Do.	Count Béla Széchenyi.
12	20 6	45½	11½	9½	7½	6½	...	...	...	640	Do.	Archduke Joseph Augustus.
-20	17-05	45-27	10-04	8-07	7-28	7-48	...	...	...	...	Do.	Count George Erdödy.
14	19 8	45½	10½	8¾	6½	6½	...	...	...	433	Do.	Archduke Joseph Augustus.
15	...	45½	9½	...	...	...	23¾	34½	...	...	Rumania	Prince Demeter Ghika.
-22	28 10	45½	12	9¾	7	14½	29½	34½	...	...	Hungary	Prince Montenuovo.
-14	...	45	9	7½	5½	6	18¾	34½	41½	...	?	W. H. Wilson.
-11	...	45	8½	7¾	...	5¾	21½	33	41	...	Galicia	Prince E. Demidoff.
14	...	44½	10½	9¾	...	5½	...	...	...	...	Hungary	Archduke Frederick.
14	...	44¾	...	...	...	6	30½	29½	39	...	Do.	Hon. Walter Rothschild.
22	20 4½	44½	12½	10½	7½	6½	...	...	...	418	Do.	Archduke Frederick.

-20	15'73	44'49	9'05	7'87	9'05	12'21	...	...	...	Count Tassilo Festetics.
20	24½	44½	11½	10¼	5½	7¼	14½	28¾	44½	S.W. Hun- gary Carpathians Sir Edmund G. Loder, Bart. (See illustration, page 24.) N. Hungary Count Béla Széchényi.
-14	16'17	44'49	10'63	9'45	6'49	8'07	...	...	...	Transylvania S. H. Whitbread.
10	...	44½	...	...	...	...	5½	40	...	S.W. Hun- gary Archduke Frederick.
-12	18 3	44½	11½	9½	7½	6½	...	...	352	N. Hungary Prince Philip of Saxe-Coburg and Gotha.
1-22	18 4½	44½	10½	9½	6½	7½	...	...	...	Carpathians Count Michael Esterhazy.
-8	17'38	44'09	11'41	9'84	7'68	7'68	...	...	...	Do. Jeno Kund.
14	18'37	44'09	11'41	10'24	7'28	6'89	...	...	...	Hungary Count Fer. Nádasdy.
-16	...	44½	10½	10½	...	6¼	...	...	...	Sesawski Dohha Hungary Count Rudolf Erdödy.
2 12	...	44	...	...	...	...	25½	36¼	42½	Do. F. Pausinger.
-18	19'14	43'7	10'04	8'46	7'09	9'64	...	...	...	Do. Count Tassilo Festetics.
-14	20'24	43'7	10'43	8'27	7'09	7'28	...	...	...	Galicja A. von André.
-20	18 0	43'6	10'02	8'03	...	12'23	36'06	25'12	...	Hungary Count Tassilo Festetics.
12	...	43½	11	...	6¼	5¾	15	29½	36	Do. Count B. Keglevich.
-20	17'6	43'31	10'04	8'07	7'28	8'27	...	...	...	Do. Count László Májláth.
-14	20 1½	42½	9½	8½	7½	7½	...	...	...	Do. Count Henry Fünfkirchen.
-16	22 0½	42½	12¼	10¾	7½	...	...	...	...	Do. G. Jankovich.
-20	...	42½	9¼	8¼	7½	9½	47½	29¾	36½	Do. Count Rudolf Erdödy.
-16	16'06	42'91	9'84	8'27	6'69	7'09	...	...	...	Do. Count Bombelles.
-18	20'5	42'8	10'4	8'9	8'1	11	51'6	39'1	...	Hungary Archduke Frederick.
-18	19 1	42'7	...	8'5	...	...	...	...	...	Galicja Prince E. Demidoff.
-20	20 13	42½	10½	9½	7½	7½	...	...	363	
11	...	42½	...	...	...	...	38	43¼	50½	

- Owner's measurements. Many of these specimens are uneven pointers.

¹ "Pickled-up" specimen.

² Brown-points 20 in. long.

Number of points.	Weight, avoirdupois, lbs. oz.	Length along curve.	Circumference of burr.	Circumference above burr.	Circumference above middle point.	Circumference below crown.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Weight of stag, lbs.	Locality.	Owner.
-18	...	42½	10½	8½	...	6¾	...	...	...	...	...	Rapoli	Marquis Pallavicini.
-20	...	42½	9½	8½	...	...	...	...	...	...	...	Galicia	Count Széchenyi.
-16	17 6	42½	11'61	10'24	7'09	7'68	...	...	...	...	583	Carpathians	Count Fer. Nádasdy.
-20	18 8	42'1	...	9½	...	...	...	...	...	...	...	Munkacs	Count Jose Hoyos.
-10	...	42½	7	5½	...	...	5½	11½	30½	32½	...	Styria	Sir Clement Hill.
-18	...	42½	9½	8½	...	6½	...	...	...	...	...	Hungary	Archduke Frederick.
-12	...	42½	9½	9½	...	6½	...	...	...	...	...	Do.	Count László Májláth.
12	...	42	...	...	...	...	...	...	35½	40	...	Galicia	E. N. Juxton.
17	18 0	42	8½	...	...	...	...	42	...	...	...	?	Count Henry Coudenhove.
12	...	41½	...	...	...	...	5½	...	25½	...	...	Germany	British Museum.
18	18 3	41½	10½	8½	7½	7¾	...	...	...	...	391	Hungary	Archduke Frederick.
18	22 11	41½	10½	9½	7½	8½	...	...	...	...	429	Do.	Do.
18	19 2½	41½	10½	9½	7½	6½	...	...	...	...	330	Do.	Do.
-18	18'26	41'73	10'24	9'25	7'09	8'07	...	...	...	...	...	Do.	Count Fer. Nádasdy.
12	...	41½	...	...	...	...	5½	22½	32	...	...	Do.	H. R. H. the Duc d'Orléans.
-14	20 0	41	...	10½	7½	9½	...	...	31½	...	...	Do.	Prince Philip of Saxe-Coburg and Gotha.
-12	21'01	40'94	12'21	10'63	7'09	8'27	...	...	...	...	552	Do.	Do.
-11	...	40½	...	...	...	8¾	...	28¾	31½	...	...	Rumania	Prince Nicholas Ghika.
26	18 3	40½	10¾	8½	6½	...	...	...	...	...	...	Hungary	Count Michael Esterhazy.
11	12½	40½	...	...	...	...	5½	29½	35½	44	...	Do.	J. D. Cobbold.
-13	...	40½	...	...	...	...	5	20¾	27¾	...	...	Tyrol	H. R. H. the Duke of Saxe-Coburg and Gotha.



Antlers of Carpathian Red Deer in the Collection of Sir Edmund G. Loder, Bart.

Hungary, 1868

Styria, 1881.



Hungary, 1873.

Hungary, 1873.

Carpathian Red Deer heads belonging to His Imperial Majesty the Emperor of Austria.



Eastern Red Deer heads in the possession of His Imperial Majesty the Emperor of Austria.

Specimens from the Plains of Hungary.

Date.	Tips.	Length.		Widest		Circumference		Locality.	
		Outside curve.	Purr to highest point.	Tip to Tip.	Inside.	Outside.	of Antler.		of Burr.
24th September 1874	6+7	41½	35¾	21¼	33	31¾	7¼	...	Szent Kiraly.
28th "	6+6	40¾	34	15¼	28¾	32	5¾	...	Do.
6th October 1868	6+7	40½	36	35½	35½	42¼	6¾	9	Babat.
" " 1873	7+10	39¾	35½	29¾	32¾	33½	5¾	8¾	Szent Kiraly.
7th " "	8+6	39½	36	21¾	27	35½	6½	...	Do.
" " "	7+8	37¾	34	25½	31¾	41	6	...	Do.

Specimens of the Mountain Form.

8th August 1892	5+5	141¾	33	12½	27¾	23¾	7	8	Brachberg (Upper Austria)
1st October 1885	4+4	41¼	28	18	32½	...	47	...	Graben, Styria.
30th September 1885	5+4	37¾	31¼	24¾	31¾	28	6	...	Taschl, do.
2nd October 1881	10+7	36¾	30¾	27¼	31¾	40½	7½	...	Mürzsteg, do.
3rd " 1884	6+6	36	31¼	14¾	27	...	6¾	...	Grasleiten, do.
5th " 1889	7+8	34¾	33	14¾	23¾	25¾	6	...	Graben.

¹ This is the finest head of Alpine Red Deer known.



Antlers of German Red Deer. From a specimen in the Castle at Moritzburg.
After Dr. A. B. Meyer.

Ancient Continental Specimens.

Length (on curve)	Circum- ference.	Tip to Tip.	Spread.	Points.	Locality.	Owner.
-47½	9	...	75¾	14 + 14	?	H.M. the King of Saxony, Moritzburg.
-46½	8¾ above trez	5 ft. 2¼	...	22	?	Count Erbach-Erbach.
...	...	...	... inside	22	Switzerland	Do.
39½	6½	22	31½ 39 outside	6 + 6	Germany	Viscount Powerscourt.

- Owner's measurements.



Skull and Antlers of Eastern Red Deer shot in the Western Caucasus by
Mr. St. George Littledale.

Length of Antler, 45 in.

E.—EASTERN RED DEER or MARAL (*C. elaphus maral*).

In this race of the red deer, which may intergrade with some of the western races by means of the Carpathian form, the height at the shoulder reaches to about $4\frac{1}{2}$ feet, and the build is stouter, the neck thicker, and the face in the hinds longer and more pointed than in typical red deer. The summer coat of immature animals is very generally marked with numerous yellowish spots, and at all ages is much less red than in the British race, being, in fact, grey in September. The colour of the winter coat is dark slaty grey on the back, with the rump-patch of a very bright yellow, and a large amount of black on the shoulders, thighs, and under-parts; this blackness of the under-parts also characterising the summer coat. The large and massive antlers are generally less complex than those of the western races, the number of points being seldom more than eight on a side, and frequently only six; while the bez-tine, which may be wanting, is often shorter than the long and

upwardly curved brow-tine, and the fourth tine is generally more distinct from the crown. The average weight is given as about 560 lbs.

The typical locality of the maral is the Caspian provinces of Northern Persia, whence this or allied races extend into the Crimea, Asia Minor, and so on into Transcaucasia, the Caucasus, and probably Circassia. It is noteworthy that specimens from the Caucasus have shorter faces than those from Northern Persia, and thus approximate to the western types. Sportsmen call this race the Hungarian red



Antlers of Eastern Red Deer from the Caucasus, in the Collection of Sir Edmund G. Loder, Bart.

deer, but this is scarcely legitimate, as Hungary is not the typical locality. (For other specimens, see p. 18 *et seq.*) The Crimean red deer have very massive, few-tined antlers.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
48 $\frac{3}{4}$	6 $\frac{1}{2}$	34	36	42 $\frac{1}{2}$	8+6	Asia Minor	H. O. Whittall.
48 $\frac{1}{2}$	6	30	41 $\frac{1}{2}$	...	5+6	Ichater Dagh, Crimea	H.R.H. the Duke of Saxe-Coburg and Gotha.
48 $\frac{1}{2}$	7 $\frac{1}{4}$	(single antler)	...	...	12	Asia Minor	British Museum (Lord A. Hay).
48	7 $\frac{1}{4}$	...	...	...	...	Caucasus	St. George Littledale (Liverpool Museum).

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
47 $\frac{1}{8}$	7 $\frac{1}{4}$	33 $\frac{1}{2}$	43 $\frac{1}{4}$	54 $\frac{3}{4}$	10+9	Persia?	St. George Littledale.
47 $\frac{1}{8}$	5 $\frac{3}{4}$	18 $\frac{1}{2}$	36 $\frac{1}{4}$	41 $\frac{1}{4}$	6+5	Caucasus	Sir Edmund G. Loder, Bart.
46 $\frac{3}{4}$	5 $\frac{3}{8}$	18	33	...	8+8	Do.	British Museum.
-46 $\frac{3}{4}$	6 $\frac{5}{8}$	...	39	...	8+6	Asia Minor	F. E. Whittall.
45 $\frac{1}{2}$	5 $\frac{3}{4}$	42 $\frac{3}{4}$	49	52	6+6	Caucasus	S. H. Whitbread.
-45 $\frac{1}{2}$	8 $\frac{1}{8}$	65 $\frac{1}{4}$	...	...	14	Do.	Grand Duke Mikhael.
45 $\frac{1}{2}$	7 $\frac{1}{4}$	32 $\frac{3}{4}$	40 $\frac{1}{2}$	46	8+8	Do.	Prince E. Demidoff.
-45 $\frac{1}{4}$	...	17 $\frac{1}{4}$	31 $\frac{1}{2}$	39 $\frac{1}{2}$	10+8	Do.	J. C. Phillips.
¹ 45 $\frac{1}{8}$	7 $\frac{3}{4}$	...	...	...	9+6	Asia Minor	Sir Edmund G. Loder, Bart.
² -45	8	36	42	...	11+10	Caucasus	Prince E. Demidoff.
45	6 $\frac{1}{4}$	30 $\frac{1}{2}$	38 $\frac{1}{2}$	44 $\frac{1}{2}$	7+6	Asia Minor	H. O. Whittall.
44 $\frac{1}{2}$	6 $\frac{3}{4}$	31	39 $\frac{1}{2}$	47 $\frac{1}{2}$	8+7	?	Duke of Bedford.
44 $\frac{1}{2}$	7 $\frac{1}{8}$	19 $\frac{1}{4}$	26	36 $\frac{1}{4}$	7+6	Asia Minor	F. W. Baker.
44 $\frac{1}{4}$	6 $\frac{7}{8}$	(single antler)	...	9		Do.	British Museum (C. G. Danford).
44	5 $\frac{3}{4}$	28 $\frac{3}{4}$	36	40 $\frac{1}{2}$	8+7	Ak-Dagh	J. L. Rees.
43 $\frac{1}{2}$	6 $\frac{1}{2}$	26 $\frac{3}{4}$	35 $\frac{3}{4}$	46 $\frac{1}{2}$	10+8	Do.	D. Forbes.
43 $\frac{1}{2}$	6	...	40	...	8+6	Asia Minor	M. Le C. Findlay.
43 $\frac{1}{2}$	5 $\frac{3}{4}$	16	28	...	6+6	Crimea	Earl of Dunmore.
43	5 $\frac{3}{4}$	38	39 $\frac{3}{4}$	49	7+7	Ak Dagh	J. W. Williamson.
43	5 $\frac{1}{4}$	22 $\frac{3}{4}$	32 $\frac{3}{4}$	37 $\frac{1}{2}$	7+6	Do.	H. Williamson.
42 $\frac{1}{4}$	6	22 $\frac{3}{4}$	31	36 $\frac{3}{4}$	6+6	Do.	H. O. Whittall.
42	6 $\frac{1}{4}$	28	33 $\frac{1}{2}$	44 $\frac{1}{2}$	9+8	?	R. A. Cooper.
42	6	26 $\frac{1}{4}$	34 $\frac{1}{2}$	42	7+6	Ak Dagh	T. Bowen Rees.
42	6 $\frac{1}{4}$	24	30	35	7+7	Asia Minor	Capt. J. B. Jenkinson.
37	5 $\frac{3}{4}$	31 $\frac{1}{2}$	34 $\frac{3}{4}$	40 $\frac{1}{2}$	7+6	N. Persia	Capt. C. T. Daukes.
-37	5 $\frac{1}{4}$	21 $\frac{1}{2}$	30	...	14	Macedonia	H. J. Elwes.
36	5 $\frac{3}{4}$	15	25	37 $\frac{1}{2}$	7+7	Persia	Major P. M. Sykes.

- Owner's measurements.

¹ Weight, 23 lbs.² Estimated weight, 746 lbs.



North African Red Deer : Sir Edmund G. Loder's Specimen.

F.—N. AFRICAN RED DEER (*C. elaphus barbarus*).

For characters, see page 2.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
38 $\frac{1}{8}$	5 $\frac{3}{8}$	27 $\frac{1}{2}$	28	36	6+5	North Africa	Sir Edmund G. Loder, Bart.
36 $\frac{1}{2}$	4 $\frac{3}{4}$	22 $\frac{7}{8}$	28 $\frac{3}{4}$	...	4+4	Do.	British Museum.
30 $\frac{1}{2}$	3 $\frac{3}{4}$	...	...	...	4+3	?	Duke of Bedford.
24 $\frac{1}{4}$	3 $\frac{3}{4}$	20 $\frac{3}{4}$	21 $\frac{1}{2}$	...	4+4	Tunis	Major R. Rankin.



Skull and Antlers of Hangul or Kashmir Barasingha.
Shot by Mr. P. B. Vander Byl.

The HANGUL or KASHMIR BARASINGHA (*Cervus cashmirianus*).

In this very distinct species the first, or brow, tine arises at a considerable distance above the burr, or coronet, of the antlers, instead of close to it, as in the red deer; the bez-tine is usually longer than the brow; the total number of points is generally only five a-side, although a third tine may occasionally be added to the normal terminal pair, thus forming an imperfect cup; and the beam of each antler is much curved in towards the middle line of the head. The terminal fork is placed obliquely. The tail is short, and not included in the light patch on the rump, which is very small; and the tuft on the hind cannon-bone is situated lower down than in the red deer. In winter the general colour of the coat is brown, brownish ash, or liver-colour, with the hairs speckled; the light area on the inner side of the buttocks being dirty white, with a blackish line on the inner sides of the thighs, the upper side of the tail black, and the lips, chin, and inner surface of the ears white or whitish. In the fawns the spotting is stated to remain much longer than in the red deer. In the pairing season the old stags squeal like wapiti, instead of roaring in red-deer fashion.

The hangul inhabits the forest-districts of the north side of the vale of Kashmir and some of the neighbouring valleys, at elevations ranging from 9000 to 12,000 feet in summer, but descending to about

5000 feet in winter. The height at the shoulder varies from about 4 feet to 4 feet 4 inches; the average weight being about 450 lbs.

The pale-coloured *C. macneilli*, of Sze-chuan, and *C. m. kansuensis*, of Kan-su and Yun-nan, are nearly related deer.

The finest pair of antlers appears to be one given by Raja Gulab Singh many years ago to Colonel King, then commanding the 14th Hussars, at whose death they passed to Captain Prettyjohn of the same regiment. What became of these antlers the late Mr. A. O. Hume, who measured them at Meerut in 1852 or 1853, could not ascertain. The record stands, R. 52, L. $53\frac{1}{2}$, measured along the curve inside. Girth, 10 inches at burr and 7 half-way between bez and trez tines. They were a wide-branching, symmetrical pair.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
$-53\frac{1}{2}$	7	...	...	...	...	See above.
48	$6\frac{1}{8}$	14	$33\frac{1}{4}$	6+5	Lidar Valley, Kashmir	K. S. Laurie.
$47\frac{1}{2}$	6	22	39	6+6	Kashmir . . .	P. B. Vander Byl. (See illustration, p. 32.)
-47	$7\frac{3}{8}$	21	36	7+5	Do. . . .	Bombay Natural History Society.
47	$6\frac{3}{4}$	$21\frac{1}{4}$	$36\frac{3}{4}$	5+5	Do. . . .	Sir Edmund G. Loder, Bart.
47	$6\frac{1}{4}$	30	$35\frac{1}{2}$	8+8	Do. . . .	Duke of Wellington.
47	6	20	$34\frac{3}{4}$	6+5	Do. . . .	Lieut.-Col. H. R. Cook.
46	$5\frac{3}{8}$	13	$34\frac{3}{4}$	5+5	Do. . . .	Capt. W. F. Brayne.
$45\frac{7}{8}$	8	35	41	6+6	Do. . . .	British Museum (Hume Collection).
$45\frac{3}{8}$	6	$25\frac{3}{4}$	36	8+8	Do. . . .	Sir Victor Brooke's Collection.
$45\frac{1}{2}$	$6\frac{1}{4}$	$16\frac{1}{2}$	34	6+5	Do. . . .	Brig.-Gen. E. H. Molesworth.
$45\frac{1}{4}$	$5\frac{3}{8}$	$17\frac{1}{4}$	34	5+5	Do. . . .	P. Radclyffe.
45	$6\frac{3}{4}$	19	34	6+6	Do. . . .	Lieut. - Gen. Sir R. Pole-Carew.
45	$5\frac{1}{4}$	$23\frac{1}{4}$	36	6+6	Do. . . .	J. V. E. Lees.
45	$6\frac{1}{4}$	23	40	4+4	Do. . . .	Capt. H. F. Bidder.
$44\frac{3}{4}$	$5\frac{1}{2}$	$17\frac{1}{2}$	33	6+6	Do. . . .	Col. A. E. Ward.
$-44\frac{3}{4}$	6	20	43	5+5	Lidar Valley . . .	Queen's Own Corps of Guides.
$-44\frac{3}{8}$	$6\frac{1}{2}$	$31\frac{1}{2}$	$44\frac{3}{4}$	5+5	Kishenganga Valley . . .	Do.
$44\frac{1}{2}$	6	$27\frac{3}{4}$	$38\frac{3}{4}$	4+4	Sind Valley, Kashmir	J. V. Phelps.
44	$7\frac{1}{4}$	$30\frac{3}{4}$	$40\frac{7}{8}$	5+5	Do. . . .	Major P. H. G. Powell-Cotton.
44	$6\frac{3}{4}$	$23\frac{1}{4}$	$36\frac{1}{2}$	5+5	Do. . . .	Naval and Military Club.

- Owner's measurements.

RECORDS OF BIG GAME

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
44	6	27	36	5+5	Kashmir	Hon. Walter Rothschild.
44	6 $\frac{3}{4}$	34 $\frac{1}{2}$	47 $\frac{1}{2}$	5+5	Do.	Major V. Rickard.
44	5 $\frac{3}{4}$	18	31	5+5	Do.	C. E. Bryant.
43 $\frac{3}{4}$	6 $\frac{1}{4}$	25 $\frac{3}{4}$	37 $\frac{3}{4}$	6+5	Do.	Capt. A. E. Cathcart.
43 $\frac{3}{4}$	6 $\frac{1}{4}$	11	32 $\frac{3}{4}$	7+6	Do.	A. Danson.
43 $\frac{3}{4}$	5 $\frac{7}{8}$	18 $\frac{1}{2}$	29	5+5	Do.	C. H. Smith.
43 $\frac{1}{2}$	6 $\frac{1}{2}$	19	31	5+5	Do.	Sir J. Prestcott Hewett.
43 $\frac{1}{2}$	6	10 $\frac{3}{4}$	32 $\frac{1}{2}$	7+6	Do.	A. Williams.
43 $\frac{1}{2}$	6	31 $\frac{1}{4}$	38	5+5	Do.	Sir R. Douglas Powell, Bart.
43 $\frac{1}{2}$	6	15 $\frac{1}{2}$	29 $\frac{3}{4}$	7+7	Do.	Capt. C. M. Truman.
43 $\frac{1}{2}$	5 $\frac{3}{4}$	15 $\frac{1}{4}$	31 $\frac{1}{4}$	6+6	Do.	Capt. A. M ^c B. Woodside.
43 $\frac{1}{4}$	7 $\frac{1}{2}$	23 $\frac{1}{2}$	37 $\frac{1}{4}$	5+5	Do.	R. E. Mess, Roorkee.
43	5 $\frac{1}{2}$	34	41 $\frac{1}{2}$	5+4	Do.	His Majesty the King.
43	5 $\frac{7}{8}$	26 $\frac{1}{8}$	37 $\frac{7}{8}$	6+5	Do.	Martyn Kennard.
43	5 $\frac{1}{4}$	19 $\frac{3}{4}$	34 $\frac{1}{2}$	6+6	Do.	Major F. W. H. Walshe.
42 $\frac{3}{4}$	5 $\frac{1}{2}$	18	33 $\frac{3}{4}$	6+5	Do.	Major R. Baker-Carr.
42 $\frac{3}{4}$	5 $\frac{1}{2}$	17 $\frac{1}{4}$	33 $\frac{3}{4}$	5+6	Do.	Major-Gen. H. D'U. Keary.
42 $\frac{3}{4}$	6	15	32 $\frac{1}{4}$	5+5	Do.	Major C. A. Vivian.
42 $\frac{1}{2}$	6 $\frac{1}{4}$	11 $\frac{1}{2}$	26 $\frac{3}{4}$	5+5	Do.	Capt. A. H. Wilson.
42	5 $\frac{3}{4}$	13 $\frac{1}{2}$	26 $\frac{1}{2}$	5+5	Do.	E. L. Phelps.
42	5 $\frac{1}{2}$	20	35 $\frac{1}{2}$	6+5	Do.	W. A. Conduitt.
42	6	22	34	5+5	Do.	Major W. Furnivall.
41 $\frac{3}{4}$	6	23	36 $\frac{1}{4}$	6+6	Do.	F. V. B. Witts.
41 $\frac{3}{4}$	5 $\frac{3}{4}$	23 $\frac{1}{2}$	35	5+5	Do.	Major Kingsley Foster.
41 $\frac{3}{4}$	6	18 $\frac{1}{2}$	31 $\frac{1}{2}$	6+5	Do.	H. A. Attenborough.
41 $\frac{3}{4}$	5 $\frac{1}{2}$	12 $\frac{1}{4}$	29 $\frac{3}{4}$	5+5	Do.	Major R. A. N. Tytler.
41 $\frac{1}{2}$	6	25 $\frac{1}{4}$	36 $\frac{1}{2}$	5+5	Do.	Col. F. H. Hancock.
41 $\frac{1}{2}$	6 $\frac{1}{2}$	36	41 $\frac{1}{2}$	5+5	Do.	C. Arthur.
41 $\frac{3}{8}$	5 $\frac{3}{4}$	23	33 $\frac{1}{2}$	6+5	Do.	Capt. H. C. H. O'Brien.
41 $\frac{1}{4}$	6	15 $\frac{5}{8}$	29	7+6	Do.	P. W. Cobbold.
41 $\frac{1}{4}$	5 $\frac{1}{2}$	...	...	6+3	Do.	Lady Jenkins.
41	5 $\frac{3}{4}$	23 $\frac{1}{2}$	35	5+5	Do.	Hon. H. G. O. Bridgeman.



Skull and Antlers of Yarkand Stag. From specimen bequeathed by Mr. A. O. Hume to the British Museum.

The YARKAND STAG (*Cervus yarcandensis*).

This stag, which inhabits the Tarim Valley and Maralbashi in Eastern Turkestan, differs markedly from the hangul by the large and well-defined light rump-patch, which includes the tail, and by the general colour being light rufous fawn. The antlers are usually 5-tined, but by the development of a third snag to the crown may become (as in the figure) 6-tined. They differ from those of the hangul in that the terminal fork is placed at right angles to the middle line of the head so as to look directly forwards. The fifth

tine, which is generally inclined inwards, is larger than the fourth, and the whole upper part of the antlers is often bent forwards in the manner of those of the shou.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
41½	6	31¼	31¼	44	6+6	Maralbashi . . .	British Museum.
40¼	5½	23¾	31¾	...	5+5	Do. . . .	British Museum (Hume Collection).
40	5½	25	31	...	6+5	Do. . . .	E. L. Phelps.
39½	6	24½	25	...	7+6	Do. . . .	British Museum (Hume Collection). See illustration.
39¼	5¾	16½	28¾	...	6+6	Do. . . .	The late David T. Hanbury.



Kashmir Barasingha Head.



Skull and Antlers of Sikhim Shou. From a specimen bequeathed by Mr. A. O. Hume to the British Museum.

The SHOU (*Cervus wallichi*).

A very large stag with antlers, at least in the Sikhim race, of the general type of those of the hangul, but larger, and with the beam bent suddenly forwards at the trez-tine, so that the upper half overhangs the face, the number of points being usually five. The brow-tine is less constantly longer than the bez, the fifth tine is large and inclined inwards, and the terminal fork looks almost directly forwards. In the typical race, which inhabits the neighbourhood of the Mansarowar Lake, Tibet, the white rump-patch is large, but it is smaller in the true shou (*C. wallichi affinis*), which inhabits the upper

part of the Chumbi valley and some of the neighbouring valleys in Bhutan. An identical or nearly allied deer is also found in the Tsan-po basin, near Lhasa.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
55 $\frac{3}{4}$	6 $\frac{1}{2}$	17 $\frac{1}{4}$	40 $\frac{3}{4}$	7+6	Tibetan Frontier	British Museum (Hume Collection). See illustration.
55 $\frac{3}{4}$	6 $\frac{2}{3}$	26 $\frac{1}{8}$	44	5+5	Do.	British Museum (B. H. Hodgson).
54 $\frac{3}{8}$	6 $\frac{2}{3}$	21 $\frac{5}{8}$	37 $\frac{1}{4}$	5+5	Do.	British Museum (Dr. Campbell).
54 $\frac{1}{4}$	7 $\frac{3}{4}$	10 $\frac{1}{4}$	35 $\frac{1}{2}$	5+5	Do.	His Majesty the King.
53 $\frac{1}{4}$	6 $\frac{2}{3}$	30	45 $\frac{3}{4}$	4+5	Do.	British Museum (Hume Collection).
-52 $\frac{1}{2}$	7	18 $\frac{1}{2}$	38	5+5	Do.	Sir Edmund G. Loder, Bart.
52	8	...	...	...	Do.	Hon. Walter Rothschild.
50	6 $\frac{1}{4}$	21 $\frac{3}{8}$	35 $\frac{1}{4}$	8+6	Do.	H. J. Elwes.
49 $\frac{1}{2}$	7 $\frac{1}{2}$	38	45 $\frac{1}{2}$	5+5	Do.	Col. J. Biddulph.
-49 $\frac{1}{2}$	...	39 $\frac{1}{2}$	...	5+4	Do.	Bombay Natural History Society.
-48	6	30	42 $\frac{1}{4}$	5+5	Chumbi Valley.	Lord Curzon.
-48	6 $\frac{3}{4}$	30 $\frac{3}{4}$	¹ 39	5+5	Tibetan Frontier	H. J. Elwes.
48	6 $\frac{2}{3}$	17	34 $\frac{1}{2}$	6+5	Do.	H. R. H. the Duc d'Orléans.
47 $\frac{7}{8}$	5 $\frac{5}{8}$	30 $\frac{3}{8}$	40 $\frac{1}{2}$	5+5	Do.	British Museum.

- Owner's measurements.

¹ Spread.

THOROLD'S DEER (*Cervus albirostris*).

Thorold's deer is of the same approximate dimensions as the hangul, from which it is readily distinguished by the more flattened antlers, which have no bez-tine, and do not curve inwards, but are suddenly bent backwards at the point of origin of the trez; the total number of points being either five or four. Equally distinctive are the pure white muzzle and chin; the white inner surface of the ears; the reversal of the hair on the middle of the back, so as to form a kind of hump on the withers with the points of the hairs directed towards the neck; the low position and large size of the gland-tuft on the hind cannon-bone; and the shortness of the tail, which is included in the very large straw-coloured area of the buttocks. The general colour of

the coat is uniformly dark brown, with the hairs, which are remarkable for their coarse and brittle nature, minutely speckled. The antlers are smooth and white nearly throughout.

The Tibetan plateau, north of Lhasa, is the home of this fine species of deer, which was originally described by the late Colonel Przewalski under the scientific name given above. Subsequently two examples were obtained by Dr. W. G. Thorold, to the north-east of Lhasa, at an elevation of between 13,000 and 14,000 feet, which, under the impression that they indicated a new species, were named *C. thoroldi* by Dr. W. T. Blanford.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
47	...	...	...	...	N. of Lhasa . . .	British Museum.
38½	4½	37	27	5+4	Central Tibet . . .	Hon. Walter Rothschild.
38	5¼	28	31	5+5	Do. . . .	British Museum.
1-36	4½	32	32	5+5	?	Indian Museum.

— Owner's measurements.

¹ Bought at Darjiling, thither brought by Tibetans.

The WAPITI DEER (*Cervus canadensis*).

Wapiti are large deer of the red deer group easy of recognition by the form of their antlers, which are of great size, carrying, when fully developed, more than five tines, curving backwards, and being much flattened in the upper half. They always have the bez-tine developed, but their most characteristic feature is the great size of the fourth tine, which is larger than any of the others, and, with the fifth, which is also long, forms a nearly regular fork; the fourth, fifth, and sixth tines being situated almost in the plane of the portion of the beam immediately below them, so that they more or less completely hide one another when viewed from the front aspect. The brow-tine rises close to the burr, and is nearly as long as the bez. The tail is extremely short; the light rump-patch is very large and includes the tail; the neck and under-parts are blackish; and the general colour of the summer coat is yellowish brown on the upper-parts.

Wapiti (known in America as elk) range from North America to North-eastern and Central Asia, the typical form being the Rocky Mountain wapiti. The height at the shoulder is about 5 feet 4 inches, and the weight from 700 to 1000 lbs.

A.—ROCKY MOUNTAIN WAPITI (*C. canadensis typicus*).

Distribution.—N. America, east of the Rockies, inclusive of that range.

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside beam of horn.	Widest outside.	Points.	Locality.	Owner.
64½	S	...	31½	45	52	7+6	?	Sir Edmund J. Loder, Bart.
63½	S	...	39	45½	52	7+7	Wyoming	H. A. C. Darley.
62½	S	13¼	...	46½	55½	17	Do.	J. G. Millais.
62	7¾	...	33¼	50½	...	7+7	Snake River, Colorado	Ernest Farquhar.
61	S	...	35¼	45½	53¾	6+6	Bighorn Mts., Wyoming	Sir H. Seton-Karr.
61	S	...	36½	46½	55	8+8	Do.	Viscount Powerscourt.
61	S	...	...	...	...	8+7	Do.	Prince Nicolas Ghika.
60½	8¼	...	...	55	...	7+6	Do.	E. Grant.
60½	7¼	...	43	46¼	...	6+6	Do.	Major C. C. Ellis.
60	8¼	...	36	37½	45	6+6	Do.	W. Winans.
59½	7	...	38	48½	52	8+7	Do.	L. E. Sackville West.
59½	8½	13	37¼	47	...	8+8	S.E. Wyoming	His Majesty the King.
59½	8½	16¼	...	43	53	7+6	?	J. G. Millais.
59	6½	...	30½	45½	51¼	6+6	Rocky Mts.	T. J. Burrough.
59	7¾	...	39	46	53	9+7	Wyoming	Sutton Timmis.
58½	...	9 between brow and bez.	...	46½	50½	10+7	Do.	Lord Hythe.
58	...	9¼	42	47¼	...	7+6	Do.	A. H. Straker.
58	7¾	...	43½	49	...	9+8	Do.	W. Moncreiffe.
57¾	7	...	36	43½	47	6+6	?	R. Fleming Crooks.
57½	6¾	...	24¼	35½	...	6+6	Montana	Capt. Addy.
57¼	...	9¾	32	42¼	...	7+7	Do.	Sir Humphrey de Trafford, Bart.
57	6¾	10	52½	55	57½	6+6	Do.	T. D. M. Cardeza.
57	7¼	...	...	...	...	7+7	Do.	Count F. Trauttmansdorff.
57	7½	15	53	49½	61	8+9	Montana	Sir Edmund G. Loder, Bart.
57	7¼	...	35½	41½	...	6+6	Yellowstone Park	British Museum.
56½	7¼	...	37	39½	43½	7+6	?	Duke of Bedford.
56½	6¾	...	34	49	...	6+6	Montana	Andrew Jameson.
56	7	...	31	39	42½	6+7	Wyoming	J. V. Colby.



Head of Rocky Mountain Wapiti.

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RECORDS OF BIG GAME

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
56	7	...	...	50½	51½	7+6	Wyoming .	Royal Automobile Club.
55½	7	...	43½	47½	...	6+5	Do. .	Major G. Dalrymple White.
55½	7¼	...	40	46¼	50	6+6	Do. .	P. B. Vander Byl.
55½	7	...	29½	40½	45½	6+6	Do. .	T. P. Kempson.
55½	6½	...	44	45½	...	6+6	?	A. H. Pollen.
55½	7½	...	46¼	...	...	7+6	?	St. George Little-dale.
55½	6½	...	43½	47½	50½	6+6	Wyoming .	G. L. Harrison.
55	8	...	...	45½	...	7+6	Do. .	Major Maitland Kirwan.
55	7½	...	...	47½	...	6+5	Do. .	E. N. Buxton.
55	7	...	52	50	54½	6+6	Do. .	W. E. T. Bolitho.
55	7½	...	38	47	52½	7+7	Do. .	Viscount Powerscourt.
¹ 55	6½	...	...	...	...	14	?	Duke of Bedford.
54¾	6½	...	50½	51	60	6+6	?	E. S. Crasten.
54½	7½	...	37	43¼	48	7+6	Montana .	E. L. P. Burke.
54½	...	...	...	...	...	14	Colorado .	Sir Peter Walker, Bart.
54½	9	...	...	palmed	...	11+7	Montana (?)	G. Wrey.
54½	6½	...	28	37	46	6+6	?	F. I. Mitchell.
54½	6½	...	43	43½	47	7+7	Wyoming .	Duke of Roxburghe.
54¾	6½	...	38¾	44¼	...	7+6	Do. .	E. N. Buxton.
54¼	7½	...	49½	...	...	9+7	Do. .	Hon. Walter Rothschild.
² 54	7¼	...	...	48	...	8+7	Do. .	Earl of Lonsdale.
54	6½	...	43½	44¼	47½	7+7	Do. .	H. H. Dutton.
54	7½	...	43	42	45	8+7	Do. .	P. Niedieck.
54	7¼	...	...	48	...	7+8	Do. .	Earl of Lonsdale.
54	6½	...	25	36¾	42¾	6+6	Sierra Nevada .	P. Grace.
54	7¼	...	48	44	...	12	?	M. P. Grace.
53¾	8	...	35	42	...	6+6	...	His Majesty the King.
53½	7¼	...	27½	35½	42¼	7+6	Wyoming .	P. Radclyffe.
53¼	7½	...	34	39	47¾	8+7	Do. .	Rudolph de Goldschmidt.
53½	7½	...	47	49¾	...	8+7	Do. .	Ford G. Barclay.
53	6¼	...	36	40¼	45	7+6	palmed Do. .	Lord Falconer.

¹ Shed antlers weighed 20 lbs.² Shot by Sir G. Gore, Bart.

OWNER'S MEASUREMENTS.

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
66	...	...	...	...	60	6+6	Wyoming	J. Darley.
65	7 $\frac{5}{8}$	...	...	...	40	7+7	Laramie Plains, Wyoming	Schoverling, Daly, and Gales.
64 $\frac{3}{4}$	...	9 $\frac{3}{4}$	41 $\frac{1}{2}$	49	...	6+7	Wyoming	Col. J. J. Harrison.
64 $\frac{1}{4}$	8	...	...	48	...	7+7	N.W. Wyoming	A. Rogers.
63 $\frac{3}{4}$	8 $\frac{1}{4}$	...	49 $\frac{1}{4}$	48 $\frac{1}{2}$	...	7+9	North Prong	Frank Cooper.
63 $\frac{1}{2}$	8 $\frac{5}{8}$	...	34 $\frac{1}{2}$	50 $\frac{1}{2}$	64	6+6	Wyoming	J. C. Phillips.
59 $\frac{1}{2}$	...	10 $\frac{1}{2}$	...	37 $\frac{1}{2}$	59	...	Bighorn Mts.	Sir Savile Crossley, Bart.
58 $\frac{1}{2}$	8 $\frac{1}{2}$	...	...	44 $\frac{1}{2}$	...	6+6	Do.	J. D. Cobbold.
58 $\frac{1}{2}$	8 $\frac{1}{4}$	...	48	...	50	6+6	?	F. B. Tolhurst.
58	...	10	41	...	49 $\frac{1}{2}$	7+7	Do.	American National Collection.
58	10 $\frac{1}{2}$	12	...	...	...	7+8	?	P. F. Collier.

B.—WEST AMERICAN WAPITI (*C. canadensis occidentalis*).

Apparently very closely allied to the typical Rocky Mountain race, but with the head, neck, and limbs blacker in the winter dress. The antlers show considerable tendency to cupping and palmation, and in some cases the portion above the fifth tine is aborted. The range of this form extends from British Columbia and Vancouver to Oregon.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
52	8½	37	40	...	6+6	Vancouver . . .	Barclay Bonthron.
51¾	6¾	35	36½	39¼	6+6	Do. . . .	J. M. Hanbury.
-49¼	6½	38	46¼	...	10+7	Do. . . .	A. E. Leatham.
48	7¼	32¾	36¼	34½	6+7	Do. . . .	W. R. Thompson.
47	6¾	37	34	41½	8+7	Do. . . .	J. M. Hanbury.
-45	7¼	37	37	...	7+8	Do. . . .	Clive Phillips-Wolley.
-45	6¾	37	39	42	6+4	Do. . . .	J. C. Phillips.
-44½	...	33½	28	32	6+6	Do. . . .	Capt. C. R. E. Radclyffe.

Two other forms of wapiti have been described from North America, namely, *C. canadensis merriami*, of the White Mountains, Arizona, and *C. canadensis nannodes*, of the San Joaquin Valley, California. The latter is a small, pale-coloured race, with much white on the ears, a small rump-patch, and the front of the legs and feet golden fulvous.



Skull and Antlers of Tien Shan Wapiti, shot by Mr. P. Church at Tarbagatai.

C.—TIEN-SHAN WAPITI (*C. canadensis songaricus*).

Judging by the mounted specimen in the British Museum and numerous examples of the antlers, this race differs from the typical wapiti by the rump-patch being narrower, more orange in colour, and not including the middle line of the tail, which is coloured like the back. There is more black on the borders of the rump-patch, the thighs, and the flanks, and the general colour is greyer. The antlers are very large and have the fourth tine shorter and stouter. This wapiti inhabits the Tien-Shan range in the neighbourhood of Kulja; it was first described by Dr. Severtzow under the name of *C. maral*, var. *songarica*, and subsequently by Dr. Blanford, on

the evidence of detached antlers obtained by the Second Yarkand Mission, as *C. custephanus*. Weight (W. Winans), 837 lbs.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
60	8½	62¼	45½	70	10+9	Tien Shan . .	Capt. J. N. Price Wood.
56½	7¼	37½	37½	40½	6+6	Do. . .	G. L. Harrison.
¹ -55	8	...	...	...	6+7	Bought at Kashgar .	Earl of Northbrook.
54	7¼	49	46¾	50½	7+6	Tien Shan . .	P. Church.
-53	9 burr	...	...	...	8+6	?	American National Collection.
53	6¾	30½	39	46	6+6	Tien Shan . .	J. V. Phelps.
53	6⅞	46	41	49	8+8	Do. . .	Duke of Bedford.
52	6¼	24½	31¼	...	8+7	Do. . .	Capt. J. F. Turner.
52	6	45¼	40¼	45	6+6	Do. . .	Capt. the Hon. G. H. Douglas Pennant.
51	6½	39¾	40¾	50½	6+5	Do. . .	A. Ezra.
51	6¾	43¼	44½	46¾	7+6	Do. . .	St. George Littledale.
51	6½	44½	38	49	10+8	Do. . .	C. C. Tower.
51	8	44½	51	55	8+7	Do. . .	Col. H. Appleton.
50¾	6½	41¾	42½	45	6+6	Do. . .	C. H. Bury.
50	6¾	39	43	51	6+6	Do. . .	Lord Osborne Beauclerk.
50	6½	26	35	38	7+6	Do. . .	A. Bayley-Worthington.
49½	7¼	28	33	41½	8+7	Do. . .	T. P. Miller.
49¼	6⅞	45¾	54	55	6+6	Do. . .	Capt. J. N. Price Wood.
-49	...	42¾	...	48	6+6	Do. . .	Lt.-Col. H. M. Biddulph.
48¼	6½	39¼	42½	45½	6+6	Do. . .	Major A. D. Greenhill-Gardyne.
47¼	6¾	42¼	44¾	47½	6+6	Do. . .	Lieut.-Col. G. E. Pereira.
47	6¾	24¾	32½	41	7+6	?	Col. H. G. C. Swayne.
46½	6	36	40½	43	6+6	?	S. W. Carpenter.
46½	7	37½	39¾	44	8+7	Tien Shan . .	P. F. Hadow.

- Owner's measurements.

¹ Shed antlers bought by the late Sir Douglas Forsyth.

D.—**BAIKAL WAPITI** (*C. canadensis sibiricus*).

Antlers less massive and lighter coloured than those of the Tien-Shan race, with the fourth tine inclined outwards instead of inwards, and having only a slight bend at the tip, and with the beam at this point curving gradually inwards and backwards, so that the backward inclination is less marked than in the latter. Typically from the Sayansk and Baikal Mountains west of Lake Baikal. Also known as *C. c. asiaticus*.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
50 $\frac{3}{4}$	6	29 $\frac{1}{2}$	38 $\frac{1}{2}$	...	8+7	? Altai . . .	Duke of Bedford.
48 $\frac{1}{2}$	7 $\frac{3}{4}$	...	single horn	...	7	?	British Museum.
46 $\frac{1}{4}$	6 $\frac{1}{4}$	34	40 $\frac{1}{2}$	...	6+6	Upper Yenisei Valley	J. C. Phillips.
45 $\frac{1}{2}$	6 $\frac{1}{4}$	34 $\frac{1}{4}$	39 $\frac{1}{2}$	47	5+5	? Altai . . .	H. J. Elwes.
45	6	51 $\frac{1}{2}$	...	...	6+6	Upper Yenisei Valley	Sir Edmund C. Loder, Bart.
43 $\frac{3}{4}$	6 $\frac{1}{4}$	37	35	...	6+6	Do.	Dublin Museum.

E.—**BACTRIAN WAPITI** (*C. canadensis bactrianus*).

Named on the evidence of a specimen formerly living in the Zoological Gardens at Moscow, which was at first regarded as related to the shou, although its wapiti-affinities were subsequently revealed by specimens from Chenkend, Turkestan, the head of one of which is now mounted in the British Museum. The colour is very light grey, and the dark markings on the lips differ from those of other wapiti. Has also been named *C. hagenbecki*.

Distribution.—Chenkend and adjacent districts. The antlers of the British Museum specimen are somewhat malformed, and have therefore not been measured.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
40	6	26 $\frac{1}{4}$	...	...	6+4	Turkestan . . .	Duke of Bedford.

F.—MANCHURIAN WAPITI (*C. canadensis xanthopygus*).

Antlers of a shorter and stouter type than in the Tien-Shan wapiti, with the fourth tine relatively smaller in immature specimens, and the portion above it less developed at all ages. In the 5-tined antlers of sub-adult stags the tips of the fourth and fifth tines curve towards one another like crabs' claws. General colour in winter brownish grey, in summer bright reddish brown, with the dark winter mane and under-parts of other wapiti. Also known as *C. bedfordi*.

Distribution.—Northern Manchuria in the Upper Ussuri district.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
41 $\frac{1}{4}$	6 $\frac{3}{4}$	23	33	...	6+6	Upper Yenisei Valley	J. C. Phillips.
40 $\frac{1}{2}$	6 $\frac{1}{4}$	23	32 $\frac{3}{4}$	35 $\frac{3}{4}$	7+6	Do.	Sir Edmund G. Loder, Bart.
-38 $\frac{1}{2}$	7 $\frac{5}{8}$	...	...	...	6+6	?	American National Collection.
33 $\frac{1}{2}$	5	23	26 $\frac{3}{4}$	28 $\frac{1}{4}$	6+5	N. E. Manchuria	A. J. A. Douglas.
33	5	25	24	26 $\frac{1}{2}$	5+5	Do.	Capt. H. L. Archer-Houblon.
33 $\frac{1}{4}$	5 $\frac{3}{4}$	18 $\frac{1}{2}$	21 $\frac{1}{2}$	...	6+6	?	H. J. Elwes.
32 $\frac{1}{4}$	5 $\frac{1}{4}$	26 $\frac{7}{8}$	26 $\frac{3}{8}$	29 $\frac{7}{8}$	7+5	?	Do.
31 $\frac{3}{4}$	6	17	25 $\frac{3}{4}$	29	8+7	?	Duke of Bedford.

- Owner's measurements.

Luehdorf's Wapiti (*C. luehdorfi*) appears to have been founded on aged individuals of this race. The type specimens came from Transbaikalia, and were probably brought from the Bureatish Steppe of Northern Manchuria.

The Obi Wapiti (*C. c. biedermani*) comes from Lake Teletzh at the source of the Obi, and Barnoul, lower down the same valley.



Skull and Antlers of Japanese Sika. From a specimen
in the Collection of Sir Edmund G. Loder, Bart.

The SIKA DEER (*Cervus* [*Pseudaxis*] *sica*).

The Japanese sika deer is the typical representative of a group of deer in which the antlers are shorter and simpler than is usually the case in the red deer group, and have generally four tines, including a trez, but lacking a bez. The coat is spotted, at least in summer, and there is a black-bordered white area in the region of the tail, which is relatively long. They constitute the subgenus *Pseudaxis*. In the typical species the tail is white at the tip, but black above for at least some part of its length; and the gland on the hind cannon-bone is covered with white hairs. The coat is chestnut-red with numerous white spots in summer, and browner, with no (or only indistinct traces of) spots in winter. These deer are distributed over Northern China, Manchuria, Japan, and the Liu Kiu Islands, where they are represented by two or three races differing chiefly in size. In the Japanese deer (*C. sica typicus*), which inhabits Japan and Northern China, the height at the shoulder varies from about 2 feet 8 inches to 2 feet 10 inches, whereas in the Manchurian deer (*C. sica manchuricus*) it reaches 3 feet 3 inches. The Liu Kiu race is not yet named. Both the Japanese and the Manchurian races have been acclimatised in English and Irish

parcs. Weight (W. Winans), 180 lbs.—12 stone clean (Marquis of Waterford).

A.—JAPANESE SIKA (*C. sica typicus*).

Length on out-side curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
28 $\frac{3}{8}$	3 $\frac{1}{2}$	18 $\frac{1}{4}$	4+4	Japan	J. C. Phillips.
26 $\frac{1}{2}$	3 $\frac{3}{4}$	19 $\frac{1}{4}$	4+4	?	British Museum.
25 $\frac{1}{2}$	5	17 $\frac{3}{8}$	4+4	Japan	Sir Victor Brooke's Collection.
25 $\frac{3}{8}$	4 $\frac{1}{2}$	20 $\frac{1}{4}$	4+4	Do.	Sir Edmund G. Loder, Bart.
23 $\frac{1}{2}$	4 $\frac{3}{8}$	...	4+4	Bred in England . . .	W. Winans.
22 $\frac{1}{2}$	4	16	5+4	Do.	H. R. H. the Duc d'Orleans.
¹ 22 $\frac{1}{4}$	3 $\frac{3}{8}$	12 $\frac{1}{2}$	4+3	Bred in Ireland . . .	Marquis of Lansdowne.
22	4	16 $\frac{3}{4}$	5+4	Do.	Sir Victor Brooke's Collection.
21 $\frac{1}{2}$	3 $\frac{3}{8}$	13 $\frac{3}{4}$	4+4	Do.	Hon. Walter Rothschild.
20 $\frac{1}{8}$	3 $\frac{1}{2}$	12 $\frac{3}{4}$	4+4	Bred in England . . .	H. R. H. the Duc d'Orleans.
20	3 $\frac{1}{2}$	12 $\frac{3}{4}$	4+3	Do.	W. Winans.
19 $\frac{1}{4}$	3 $\frac{1}{2}$	17 $\frac{3}{4}$	4+4	Bred in Ireland . . .	V. Brooke.
17 $\frac{1}{4}$	3	16 $\frac{1}{4}$	4+4	Woburn	Duke of Bedford.
16	3 $\frac{1}{2}$	13 $\frac{1}{2}$	3+3	Bred in Ireland . . .	C. E. Russell.
16 $\frac{5}{8}$	3	9 $\frac{5}{8}$	4+3	Do.	Hon. John Ward.
² 15 $\frac{1}{2}$	2 $\frac{3}{4}$	14 $\frac{1}{4}$	4+4	Do.	Marquis of Hamilton.

¹ 12 stone clean.

² Weight, 143 lbs. as it fell.

B.—MANCHURIAN SIKA (*C. sica manchuricus*).

Length on out-side curve.	Circumference.	Tip to Tip.	Points.	Weight.	Locality.	Owner.
26	4 $\frac{1}{4}$	13 $\frac{3}{8}$	4+4	...	Manchuria . . .	Paris Museum.
23	3 $\frac{1}{2}$	18 $\frac{1}{4}$	4+4	...	Do.	Duke of Bedford.
23	5 $\frac{1}{4}$	15 $\frac{3}{8}$	3+4	164 lbs.	Do.	W. Winans.
20 $\frac{1}{4}$	3 $\frac{1}{2}$	16	4+4	153 lbs.	Do.	Do.

- Owner's measurements.

The FORMOSAN SIKA (*Cervus* [*Pseudaxis*] *taëvanus*).

Nearly allied to the typical sika, but distinctly spotted in winter, when the coat retains more or less of the rufous summer-tinge. The dark line down the middle of the back is very strongly marked, there is a more distinct black bar above the white tail-patch, and the limbs are shorter and the body proportionately longer. The height at the shoulder is about 2 feet 11 inches. This species is confined to the mountains of the island of Formosa.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
19 $\frac{3}{4}$	3 $\frac{3}{4}$	13	16 $\frac{3}{4}$	4+4	Formosa . . .	British Museum.
19	3 $\frac{1}{4}$	...	...	4+4	Do. . . .	Duke of Bedford.



Head of Dybowski's Sika.

DYBOWSKI'S SIKA (*Cervus* [*Pseudaxis*] *hortulorum*).

In addition to its larger size (between 3 feet 7 inches and 4 feet at the shoulder), this species is distinguished from the Manchurian sika by the hairs covering the gland on the hind cannon-bone being of the same colour as the rest of the coat in summer and only slightly grizzled in winter, and by the tip of the tail being apparently white. The head and neck are bluish grey, and in immature animals whitish spots persist in winter, although these disappear completely at this season in fully adult bucks, in which the coat becomes very long and shaggy, especially on the throat and neck. Hinds are more brightly coloured in winter than the stags, and retain distinct spotting. This deer was named *C. hortulorum* by Consul Swinhoe from an immature buck and doe taken at the sack of the Summer Palace, Peking, and was afterwards obtained in the wild state in the Ussuri district of North-eastern Manchuria, when it received the name of *C. dybowskii*. In the typical Manchurian race (*C. hortulorum typicus*) there is no dark line down the back; but this is present in the smaller southern race (*C. hortulorum kopschi*) of the Yang-tsi valley.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
34 $\frac{1}{4}$	5 $\frac{3}{4}$	34 $\frac{1}{2}$	25 $\frac{1}{2}$	5+5	?	British Museum (Duke of Bedford).
32 $\frac{3}{4}$	5 $\frac{1}{2}$	23 $\frac{7}{8}$	22 $\frac{3}{4}$	4+4	N.E. Manchuria	A. J. A. Douglas.
31 $\frac{1}{2}$	5 $\frac{1}{4}$	27 $\frac{1}{8}$	26 $\frac{3}{4}$	4+4	Do.	Sir Edmund G. Loder, Bart.
27	4 $\frac{1}{8}$	23 $\frac{1}{2}$	20	4+4	Manchuria	Hon. Walter Rothschild.
26	3 $\frac{3}{4}$	18	15 $\frac{1}{2}$	4+4	Do.	E. P. Tennant.
32 $\frac{1}{4}$	4 $\frac{1}{2}$	16 $\frac{1}{2}$	23 $\frac{1}{2}$	4+4	(Shed antlers)	Duke of Bedford.
32	4 $\frac{1}{4}$	27	24 $\frac{3}{8}$	4+4	Do.	Do.
31 $\frac{1}{2}$	4 $\frac{1}{2}$	18 $\frac{1}{2}$	...	4+4	N.E. Manchuria	Hon. Walter Rothschild.
29 $\frac{5}{8}$	4 $\frac{3}{8}$	27 $\frac{3}{4}$	21	5+5	Do.	W. Banks.
27 $\frac{1}{2}$	4 $\frac{3}{8}$	16 $\frac{1}{2}$	19 $\frac{1}{4}$	4+4	Do.	A. Hardcastle.
26	4 $\frac{1}{2}$	...	...	5+4	(Shed antlers)	W. Winans.



Dybowski's Stag in summer coat, with the antlers in velvet.
Photographed by the Duchess of Bedford.



Head of Barasingha.

The **BARASINGHA** or **SWAMP-DEER** (*Cervus* [*Rucervus*] *duvauceli*).

This species belongs to the rucervine group, in which the antlers lack a bez-tine, and apparently also a trez; the beam being regularly forked, and each branch again dividing, so that there are at least four tines. The gland on the hind-leg is absent or represented by a tuft.

In the swamp-deer the antlers are smooth and flattened, with a long brow-tine rising almost at right angles to the beam, which is undivided for about half the total length of the antler, and then splits into a fork, each branch being usually simply forked, but sometimes divided in a



Head of Barasingha, from the Central Provinces, with antlers approximating to the Thamin type.

From the *Proceedings of the Zoological Society* for 1899.

more complicated manner. General colour bright rufous brown, often speckled near the back. Height at shoulder, from 3 feet 8 inches to 3 feet 10 inches; weight, about 400 lbs.

Distribution.—India, exclusive of Ceylon.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
41	6½	35½	38	8+5	Central Provinces	Capt. W. W. Hancock.
41	5¾	32	37¼	8+7	Do.	Col. C. B. Wood.
41	5½	(one antler broken)		6+6	Do.	Major C. S. Cumberland.
39¼	5	35½	37½	5+6	Do.	Do.
38¼	5½	(shed antlers)		6+5	Do.	C. F. Egerton.
38	4¾	28½	33½	6+6	Do.	J. A. McKee.
38	5½	35¼	36½	7+7	Do.	R. J. Purcell.
-38	...	43	...	6+6	Do.	J. D. Inverarity.
-37½	4¾	28	31	5+5	Do.	Bombay Natural History Society.
37¾	5¼	23½	28½	7+6	?	Sir Edmund G. Loder, Bart.
36¾	6	27½	...	8+6	?	Major Lord Charles M. Nairne.
36¼	4½	32	20¼	5+5	?	Mrs. Macan.
36¼	5½	31¼	34	8+7	Kheri	Capt. H. Pelham Burn.
36¼	5¼	29¼	26½	7+5	?	Capt. H. F. Salt.
-36¼	5	21	25	6+5	Nepal	R. E. Mess, Roorkee.
36	5	26¼	28¼	6+5	?	Major T. M. Ward.
36	5	29¾	33¾	6+5	Nepal	British Museum (B. H. Hodgson).
36	4½	47	47	6+6	Central Provinces	Col. C. B. Wood.
-36	...	29	...	6+6	Nepal	J. D. Inverarity.
-36	5¼	32½	...	7+7	?	Major W. Anstruther Gray.
35½	5	30½	32¾	5+5	?	Lieut.-Col. R. Gordon.
35¾	4¾	27	29¼	...	?	Sir Victor Brooke's Collection.
35¼	4½	29½	32¾	6+5	?	Capt. H. J. D. Broughton.
35¼	5¾	22¼	...	7+6	Nepal	H. C. V. Hunter.
35	4¾	27½	30½	5+5	Tarai	Lieut.-Col. E. B. Cook.
35	5½	31½	34¼	8+6	Central Provinces	Major R. Baker-Carr.
35	5	29¼	32½	6+6	Do.	British Museum.
34¼	4¾	32	...	6+5	?	Sir Guy Fleetwood Wilson.
34	4½	22½	25¾	8+7	?	Capt. S. F. A. Hurt.
33½	5	25½	30¼	8+6	?	Duke of Penerenda.
33	5	30	30¾	4+4	?	G. P. Cosens.



Skull and Antlers of Schomburgk's Deer. From a specimen in the British Museum, presented by the late Mr. Rowland Ward.

SCHOMBURGK'S DEER (*Cervus* [*Rucervus*] *schomburgki*).

La-ong or *La-on*, Siamese.

Allied to the preceding, but the antlers smooth, rounded, and more complex; the brow-tine very long, frequently forked, and arising nearly at right angles to the beam, which is very short, compressed, and regularly forked, with each of the main branches about equally developed and again forking in a similar manner to terminate in long cylindrical tines. General colour uniform dark brown. Height at shoulder, about 3 feet 5 inches.

Distribution.—Siamese territory east and west of the Menam River; also Cambodia west of the Menam River south of Paknampho, and in swamps occasionally on the east; in fact, chiefly the inland districts east of the Menam River in Northern Siam.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
33	5 $\frac{3}{4}$	17 $\frac{1}{4}$	31 $\frac{1}{2}$	11+9	Siam . . .	British Museum (Rowland Ward).
-32 $\frac{1}{2}$	5 $\frac{1}{2}$	27 $\frac{3}{4}$	29	12+11	Do. . . .	Sir Edmund G. Loder, Bart.
-31 $\frac{1}{2}$	6 $\frac{1}{2}$	24	27 $\frac{1}{2}$	13+10	Do. . . .	Bombay Natural History Society.
-30 $\frac{1}{2}$	...	...	...	10+12	Do. . . .	American National Collection.
30 $\frac{1}{2}$	5	15 $\frac{5}{8}$	33	10+10	Do. . . .	British Museum.
29 $\frac{3}{4}$	4 $\frac{3}{4}$	28 $\frac{3}{8}$	31 $\frac{5}{8}$	10+11	Do. . . .	Do.
29 $\frac{1}{2}$	6	19 $\frac{1}{2}$	27	6+7	Do. . . .	J. Carr Saunders.
28 $\frac{1}{2}$	5 $\frac{1}{4}$	11	29 $\frac{3}{8}$	11+9	Do. . . .	Sir Victor Brooke's Collection.
-28 \cdot 5	5 \cdot 25	9 \cdot 5	28 \cdot 5	10+9	Do. . . .	Indian Museum.
28	4 $\frac{1}{2}$	19 $\frac{3}{4}$	29 $\frac{3}{8}$	10+6	Do. . . .	Sir Edmund G. Loder, Bart.
27 $\frac{1}{4}$	5 $\frac{3}{4}$	20	27 $\frac{3}{4}$	10+9	Do. . . .	J. W. Ford.
26 $\frac{3}{4}$	6 $\frac{1}{4}$	18	30 $\frac{1}{2}$	10+8	Do. . . .	J. C. Phillips.
26 $\frac{1}{2}$	5 $\frac{1}{4}$	23	32 $\frac{1}{2}$	11+9	Do. . . .	G. L. Harrison.
20 $\frac{1}{4}$	4	17 $\frac{1}{4}$	20	6+6	Do. . . .	Hon. Walter Rothschild.

- Owner's measurements.

The THAMIN or ELD'S DEER (*Cervus* [*Rucervus*] *eldi*).

Although belonging to the same group as the two preceding species, this deer is readily distinguished by the peculiar form of the antlers. These are rounded and rough, with a long curved brow-tine, forming a continuation of the curve of the beam, which is set at right angles to the pedicle; the beam unbranched for some distance, much curved, and finally forked, with the outer prong more subdivided than the inner. Height at shoulder, about 4 feet 3 inches; weight, from 210 lbs. to 245 lbs. There are three races of this species. First, the Burmese thamin (*C. eldi typicus*), ranging from near Manipur through Burma to the Malay Peninsula, in which the antlers are rounded throughout, and the coat is uniformly umber-brown. Secondly, the Manipur thamin (*C. eldi cornipes*), in which the under surface of the fetlock is horny instead of hairy. Thirdly, the Siamese thamin (*C. eldi platyceros*), from Siam and Hainan, in which the tips of the antlers are flattened with a number of small snags, and the coat is redder, with yellowish spots. Swamp-deer from the Central Provinces show a remarkable approximation in the form of their antlers to the present species, as shown in the figure on page 55.

Length on outside curve, not including brow-tine.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
42	5	24	29	3+2	Burma . .	A. H. Collins.
41	5½	27 ⁵ / ₈	36	5+5	Upper Burma .	Maj.-Gen. O. E. P. Lloyd.
41	5¼	30	36	5+7	Do. . .	Col. G. H. Evans.
40½	5	25½	34½	7+6	Do. . .	A. B. Roberts.
40¼	5	30¼	36 ³ / ₄	6+5	?	C. B. Smales.
40	5¼	21 ³ / ₄	28	5+5	Upper Burma .	Maj.-Gen. H. D'U. Keary.
40	5½	21	32¼	6+5	Do. . .	Col. H. Appleton.
39 ³ / ₄	5	25½	35½	7+6	Do. . .	S. E. F. Jenkins.
39 ⁵ / ₈	5	20¼	30½	6+6	Burma . . .	Col. J. W. A. Morgan.
¹ 39 ⁵ / ₈	5	31 ⁵ / ₈	36 ⁵ / ₈	20 (small points)	Siam . . .	Sir Edmund G. Loder, Bart.
39½	5	29 ³ / ₄	37	12	Burma . . .	Major E. W. M. Purvis.
39½	...	21½	33	...	Do. . .	Lieut.-Col. H. de H. Haig.
39	7½	22½	29	10+10	Manipur . .	Lieut.-Col. H. S. Wood.
39	5	41	...	5+5	Lower Burma .	W. O. Hannington.
38 ⁷ / ₈	6¼	25½	30 ³ / ₈	16+19	?	British Museum.
38¼	6¼	24	30 ³ / ₄	6+5	Manipur . .	British Museum (Hume Collection).
38¼	5	21½	29¼	7+7	Burma . . .	P. Grace.
38	4 ⁵ / ₈	29¼	36 ³ / ₄	5+5	Pegu . . .	G. R. Radmore.
38	4½	20½	32	5+4	Burma . . .	H. F. Hall.
37	5	23 ³ / ₄	31½	4+4	Do. . .	Major C. S. Cumberland.
37	6	...	37¼	...	Do. . .	Capt. J. A. F. Field.
36 ³ / ₄	4 ³ / ₄	16	27	4+4	Do. . .	Major L. E. Hopkins.
36 ³ / ₄	4 ³ / ₄	22	27	7+5	Do. . .	Capt. M. E. Lloyd.
36½	4½	22 ⁵ / ₈	29½	5+4	Do. . .	H. Twyford.
36½	4½	24½	28 ³ / ₄	5+4	Do. . .	W. S. Powell.
36	4½	23	31	10+9	Do. . .	Capt. H. W. Marsden.
36	4 ³ / ₄	29¼	31¼	4+3	Manipur . .	Capt. L. P. Haviland.
36	5	...	...	4+4	?	Duke of Bedford.
36	4½	25	33¼	7+5	?	L. G. Nunes.
36	5	31 ³ / ₄	37	6+4	Burma . . .	Sir Robert Harvey, Bart.
35½	4½	22¼	31¼	6+6	Kyaikto, Lower Burma	J. W. Clough.

- Owner's measurements.

¹ Measured on front of antler from highest tip to tip of frontal tine 56½ inches.

RECORDS OF BIG GAME

Length on outside curve, not including brow-tine.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
35½	5	29¼	32	4+4	Manipur . .	R. E. Mess, Roorkee.
35	6	22	27	5+5	Burma . . .	Bombay Natural History Society.
35	4½	23	30	5+4	Upper Burma .	W. A. Conduitt.
34½	5	16¼	24	6+6	Burma . . .	P. B. Vander Byl.
34¼	4¾	31½	34¾	10+7	Do. . . .	W. O. Hamnyngton.
34¼	5	24	32¼	6+6	Do. . . .	Hon. Walter Rothschild.

- Owner's measurements.



Skull and Antlers of Thamin. From a Burmese specimen.

OWNER'S MEASUREMENTS.

Extreme length of right antler round the outside curve, highest point, to tip of brow-tine.	Circumference.	Tip to Tip.	Widest span.	Number of Points.	Locality.	Owner.
56¼	5½	28	37	13	Burma . . .	W. F. Loftus-Tottenham.
55¼	4½	34½	42¼	12	Do. . . .	Do.
55	7	28½	38½	12	Do. . . .	Col. G. H. Evans.
55	5¾	30	37	15	Do. . . .	Do.
55	5	..	42	13	Do. . . .	Do.



Head of Sambar.

The SAMBAR DEER (*Cervus* [*Rusa*] *unicolor*).

The typical representative of the rusine group of deer, in which the antlers are rounded and three-tined, the bez and apparently the trez being wanting, and the summit of the beam forked. The relatively long tail is bushy, the tear-gland and the pit in the skull for its reception are large, and the upper ends of the nasal bones of the skull expanded. In the typical sambar the height reaches to 5 feet at the shoulder. Antlers large and rough, with the brow-tine given off at an acute angle to the beam, and the two terminal tines of nearly equal length. Hair coarse and shaggy, uniformly dark umber-brown, with some chestnut on the buttocks, in the adult. Face-glands very large, and capable of being turned inside out. Ears large, and the tail relatively long and bushy. Young uniformly coloured or spotted.

Distribution.—The wooded districts of India, Ceylon, the Malay countries, the Philippines, Formosa, Bonin Island, and parts of China.

A.—INDIAN SAMBAR (*C. unicolor typicus*).

Size very large, young uniformly coloured; weight, about 600 lbs., when cleaned 415 lbs.

A pair of antlers, from the Central Provinces, measured 48 inches along the curve inside (=nearly 50 inches on outside curve); they were sent to Mr. A. O. Hume by Mr. R. Blewitt.

Distribution.—The wooded districts of India and Ceylon.

Length on outside curve.	Circumference above brow-tine.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
50½	7½	24	38½	3+3	Bhopal . . .	Col. H. H. Shahzada Obeidulla Khan.
48	7	Single shed specimen	28½	3	Khandesh . . .	R. H. Madan.
-47¾	...	...	28½	...	Cent. Provinces . . .	A. P. Perceval.
-46½	...	49	...	3+3	Do. . . .	R. Wordsworth.
46½	6¼	36¾	41¼	3+3	Do. . . .	Duncan J. A. Campbell.
46½	6½	18	29	3+3	United Provinces . . .	A. V. Willcox.
46½	6¾	24½	30½	3+3	Cent. Provinces . . .	British Museum (Hume Collection).
-46½	...	45	...	...	Garhwal . . .	R. M. Nash.
46	9	...	...	...	?	C. J. Lucas.
45½	7	17¼	28½	3+3	?	E. R. Loder.
-45¼	7¼	38	42½	3+3	Saugor, C.P. . . .	Lieut.-Col. R. W. Mapleton.
45¼	6¾	17¾	32½	3+3	?	British Museum (Dr. H. Falconer).
45	7¾	22½	33¾	3+3	Mayoghur, Cent. Provinces	Sir John Morris.
45	7¾	8	...	3+3	?	D. R. Wright.
-45	...	...	...	...	Cent. Provinces . . .	Bombay Natural History Society.
-45	9	...	...	...	Orissa	H. H. the Maharaja of Travancore.
-45	8	Picked up by Dr. G. Jones	...	...	Cent. Provinces (?) . . .	Heighway Jones.
44¼	6	26	32½	3+3	?	Lieut.-Col. F. Jollie.
44¼	5¼	33¾	35¼	3+3	?	L. W. Reynolds.
44½	7½	44¾	45¾	3+3	Rangeer	Col. W. J. Morris.

— Owner's measurements.

¹ This is the measurement of only a portion of a Sambar antler, and was recorded in the *Journal of the Bombay Natural History Society*, iii. p. 222. The animal was shot by Mr. R. Gilbert in the Central Provinces, but got away minus this piece of his antler.



Frontlet and Horns of Sambar, shot by the Hon. J. Best.
Spread, $49\frac{1}{4}$ inches.

Length on outside curve.	Circumference above brow-tine.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
44	6	$9\frac{1}{4}$	$24\frac{3}{8}$	3+3	Rewa	Major C. F. Pinney.
44	$6\frac{7}{8}$	$19\frac{1}{4}$	$31\frac{3}{4}$	3+3	Do.	H. E. M. Davies.
$43\frac{5}{8}$	$5\frac{5}{8}$	Single horn		3+3	Do.	British Museum (Hume Collection).
$43\frac{1}{2}$	$5\frac{1}{4}$	17	28	3+3	Do.	Sir P. E. Bates.
$43\frac{1}{2}$	6	32	$43\frac{1}{4}$	3+3	Cent. Provinces	J. H. Beckett.
$43\frac{3}{8}$	$6\frac{1}{4}$	$20\frac{3}{8}$	$29\frac{1}{8}$	3+3	Do.	Sir Robert Harvey, Bart.
$43\frac{1}{2}$	6	$26\frac{1}{2}$	$34\frac{3}{4}$	3+3	Do.	C. A. Mortimore.
43	6	38	$43\frac{1}{2}$	3+3	?	J. H. Beckett.
43	6	$24\frac{1}{2}$	30	3+3	Khandesh	A. Cumine.
43	$6\frac{1}{2}$	33	35	4+3	Cent. Provinces	H. W. Seton Karr.
43	$6\frac{3}{4}$	$26\frac{3}{4}$	34	3+3	?	Capt. C. P. Graham.
$42\frac{3}{4}$	$5\frac{3}{8}$	26	$32\frac{1}{4}$	3+3	Cent. Provinces	A. H. Pollen.
42	$6\frac{1}{4}$	$23\frac{3}{4}$	$35\frac{1}{2}$	3+3	?	Capt. A. H. Bailey.
$41\frac{3}{4}$	$5\frac{3}{4}$	$19\frac{1}{2}$	23	3+3	?	Capt. W. F. Reichwald.

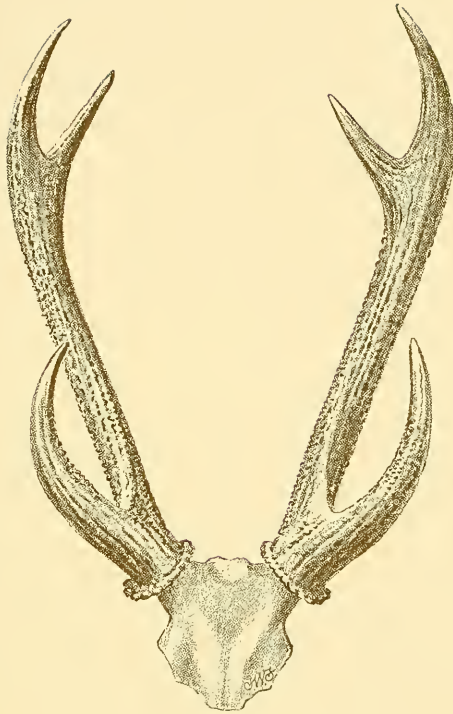
RECORDS OF BIG GAME

Length on outside curve.	Circumference above brow-tine.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
$41\frac{3}{4}$	7	$28\frac{1}{4}$	$34\frac{3}{4}$	3+3	?	Hon. Walter Rothschild.
$41\frac{1}{2}$	$7\frac{1}{2}$	$27\frac{1}{2}$	...	3+3	Cent. Provinces . .	Capt. Lord Charles Bentinck.
$41\frac{1}{2}$	$6\frac{1}{4}$	$30\frac{1}{2}$	$36\frac{1}{2}$	4+4	Do. . .	P. Jay.
$41\frac{1}{2}$	$5\frac{1}{4}$	22	$24\frac{3}{4}$	3+3	Do. . .	Capt. W. O. Gibbs.
$41\frac{1}{2}$	6	$12\frac{1}{2}$	$23\frac{3}{4}$	3+3	Do. . .	Lieut.-Col. T. M. Ward.
$36\frac{3}{4}$	$6\frac{5}{8}$	$35\frac{1}{2}$	32 Spread, $49\frac{1}{4}$.	8+6	Do. . .	Hon. J. Best. (See illustration.)

Ceylon Specimens.

Length on outside curve.	Circumference above brow-tine.	Tip to Tip.	Widest inside.	Points.	Owner.
$32\frac{1}{2}$	$6\frac{1}{4}$	24	$26\frac{1}{4}$	3+3	A. R. Hay.
$31\frac{1}{2}$	5	20	17	4+3	Lieut.-Col. G. E. Hale.
-30	8?	$21\frac{1}{2}$	$19\frac{5}{8}$	3+3	J. Ryan.
29	$4\frac{1}{2}$	25	$22\frac{1}{4}$	3+3	Earl Cairns.
$27\frac{1}{4}$	$4\frac{1}{4}$	$16\frac{3}{4}$	20	3+3	A. M. Naylor.

- Owner's measurements.



Frontlet and Antlers of Malay Sambar.
 Drawn from a Burmese specimen in the British Museum.

B.—MALAY SAMBAR (*C. unicolor equinus*).

This local race is nearly as large as the Indian sambar, but the antlers are generally shorter and thicker, with the hind or inner tine of the terminal fork much shorter than the front one, and arising as a spur from the inner hind margin of the beam, of which the front tine forms the direct continuation; the brow-tine is also generally longer. General colour of coat of adult darker, usually a light ring round the eyes, the ears smaller, often with a white margin, and the tail very bushy. Young spotted. The distributional area extends from Assam and Cachar through Burma and the Malay Peninsula to Siam, Hainan, Borneo, and perhaps Sumatra.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
33	5 $\frac{3}{4}$	28 $\frac{3}{4}$	30	3+3	Burma	D. H. M. Boyle.
32 $\frac{3}{4}$	5 $\frac{1}{4}$	26	27 $\frac{1}{4}$	3+3	Cochin China	H. R. H. the Duc de Montpensier.
32	5	32 $\frac{1}{2}$	33 $\frac{1}{2}$	3+3	Do.	Do.
31	6 $\frac{3}{8}$	14 $\frac{1}{4}$	18 $\frac{1}{4}$	3+3	?	G. Monteath.
31	5 $\frac{1}{8}$	26 $\frac{1}{4}$	26 $\frac{1}{2}$	3+3	Burma	E. M. Alexander.
30 $\frac{7}{8}$	6 $\frac{1}{2}$	17 $\frac{1}{4}$	19 $\frac{5}{8}$	7+7	Borneo	Sir Edmund G. Loder, Bart.
30 $\frac{1}{8}$	4 $\frac{3}{8}$	20 $\frac{3}{4}$	21 $\frac{1}{4}$	3+3	Do.	British Museum.
29 $\frac{3}{4}$	5 $\frac{1}{2}$	15 $\frac{1}{4}$	14	3+3	Do.	P. Grace.
28 $\frac{3}{4}$	5 $\frac{1}{2}$	18	20	3+3	Do.	J. H. Dauber.

OWNER'S MEASUREMENTS.

42	8	28	...	...	Upper Burma	H. Shaw Dunn.
34 $\frac{3}{4}$	8 $\frac{3}{4}$	20 $\frac{3}{4}$	25 $\frac{3}{4}$	3+3	Do.	A. L. Bacon.
32 $\frac{1}{2}$	7 $\frac{1}{2}$	24 $\frac{1}{4}$	27 $\frac{1}{4}$	3+2	Burma	Major-Gen. O. E. P. Lloyd.
32	7 $\frac{1}{4}$	20 $\frac{3}{4}$	23 $\frac{3}{4}$	...	Upper Burma	H. L. P. Walsh.
31 $\frac{1}{2}$	6	24 $\frac{3}{4}$	26	3+3	Do.	B. Lentaine.
30 $\frac{1}{2}$	5 $\frac{1}{8}$	27 $\frac{3}{4}$	130	3+3	Burma	Col. G. H. Evans.

¹ Outside.

C.—FORMOSAN SAMBAR (*C. unicolor swinhoei*).

This race is very closely related to the preceding, from which it is distinguished by its shorter head, concave profile, longer limbs, and certain differences in colour; the lower part of the legs being brownish or whitish yellow, and the bushy tail black all round. It is confined to the island of Formosa.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Owner.
19 $\frac{3}{4}$	...	9	3+3	British Museum.
17	4 $\frac{1}{4}$	...	5	Duke of Bedford.
17	4	10 $\frac{1}{2}$	3+3	Sir Edmund G. Loder, Bart.
16 $\frac{1}{4}$	3 $\frac{1}{2}$	16	3+3	British Museum.

- Owner's measurements.

D.—LUZON SAMBAR (*C. unicolor philippinus*).

Nearly allied to the two last, the height at the shoulder being probably from 33 to 35 inches, the build stout and massive, with the hind-quarters specially elevated, and the form that of a small Malay sambar. On the head is a blackish streak starting from over each eye to form a line down the middle of the face separated by a band of pale fawn from a moustache-like dark mark on the muzzle.

Distribution.—The island of Luzon, in the Philippines; introduced into the Marianne Islands, specimens from which have been described as a separate species under the name of *C. mariannus*.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
21	4 $\frac{3}{4}$	5 $\frac{1}{2}$	3+3	Luzon . . .	Sir Edmund G. Loder, Bart.
19 $\frac{5}{8}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	4+4	Do. . . .	British Museum.
18 $\frac{3}{8}$	5 $\frac{1}{8}$	14 $\frac{3}{4}$	4+3	Do. . . .	Do.

E.—BASILAN SAMBAR (*C. unicolor nigricans*).

Smaller than the last, the height at the shoulder in a mounted specimen in the British Museum being 27 inches. Detached antlers indicate, however, larger animals.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
13 $\frac{1}{2}$	4 $\frac{3}{8}$	12 $\frac{1}{8}$	3+3	Basilan Island . . .	British Museum (A. H. Everett).
13 $\frac{1}{8}$	4 $\frac{1}{2}$	11 $\frac{1}{8}$	3+3	Do. . . .	Do.

F.—SZE-CHUAN SAMBAR (*C. unicolor dejeani*).

A large race from North-western China, with very massive antlers, which show a tendency to develop small supplemental snags.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
31	6	22	24 $\frac{1}{2}$	3+3	N.W. China . . .	Hon. Walter Rothschild.
-30 $\frac{3}{8}$	5 $\frac{1}{2}$	15 $\frac{3}{8}$	18 $\frac{1}{2}$	3+3	Sze-chuan . . .	Paris Museum (type).

- Owner's measurements.



Antlers of Javan Rusa.
From a specimen in the collection of Sir Edmund G. Loder, Bart.

The RUSA DEER (*Cervus [Rusa] hippelaphus*).

General form, coat, and colour sambar-like; but the ears smaller, the tail thin, the hairs on the back banded with coloured rings, and the under-parts, chin, and inner sides of buttocks whitish. Antlers comparatively slender and only moderately rough, with the brow-tine medium or short, and making a large acute angle with the beam; the hind or inner tine of the terminal fork much longer than the front or outer one, and forming the continuation of the beam, from the front or front outer surface of which the brow-tine arises as an offshoot; the two antlers enclosing a lyrate space. Young, uniformly coloured. There are two races of this species—one the Javan rusa (*C. hippelaphus typicus*), of the approximate size of a red deer, and the other the Moluccan rusa (*C. hippelaphus moluccensis*), from Celebes and

the Moluccas, said to be smaller, and without a distinct mane on the neck or tuft to the tail.

A.—JAVAN RUSA (C. hippelaphus typicus).

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside	Points.	Locality.	Owner.
37½	5¾	16	17¾	3+3	Java . . .	His Majesty the King.
37½	5	16¾	19¾	3+3	Do. . . .	British Museum.
-36	...	11½	...	3+3	Mauritius (introduced)	Admiral Sir William Kennedy.
35½	4¾	22¾	...	3+3	Java	Sir Victor Brooke's Collection.
35¼	4½	17½	17	3+3	Do.	Hon. Walter Rothschild.
34½	4¾	17¼	22¼	3+3	Do.	Vice-Admiral Sir Colin R. Keppel, R.N.
34	5	14	16¼	3+3	Do.	J. C. Phillips.
¹ 34	...	...	...	...	Rodriguez (introduced)	Admiral Sir William Kennedy.
33½	5	12	...	3+3	Java	Sir Edmund G. Loder, Bart. (See illustration, p. 68.)
33	4½	25½	...	3+3	Do.	Duke of Bedford.

- Owner's measurements.

¹ Weight, 269 lbs.

B.—MOLUCCAN RUSA (C. hippelaphus moluccensis).

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
36¾	4¾	18½	3+3	?	Sir Edmund G. Loder, Bart.
27½	4¾	14½	3+3	?	Duke of Bedford.
8¾	4	5¾	...	Batchian	British Museum (A. R. Wallace).



Frontlet and Horns of Chital. Shot by the Hon. J. Best.

The CHITAL or AXIS DEER (*Cervus [Axis] axis*).

This beautiful species is distinguished from all the other members of the rusa-like deer, except the Philippine spotted deer (*C. alfredi*), by the body being profusely spotted with white at all seasons and all ages; the general colour of the upper-parts being light rufous fawn, with a dark stripe from the nape to the tip of the tail and a black band on the muzzle. Height at shoulder, from 36 to 38 inches; live-weight estimated at about 200 lbs. Antlers supported on short pedicles, long, slender, and moderately rough; the brow-tine making nearly a right angle with the beam, and the front tine of the terminal fork, which forms the continuation of the beam, much the longer.

The Ceylon chital (*C. axis zeylanicus*) has relatively small and light antlers, and also differs somewhat in coloration from the large typical race of Central India. There is also a small continental form (*C. axis minor*).

Distribution.—India and Ceylon.

Length on outline curve.	Circumference above the first point.	Tip to Tip.	Points.	Locality.	Owner.
39	4½	24½	4 + 3	United Provinces	Lady Eileen Elliot.
39	4½	15½	4 + 5	Jubbulpore	Capt. F. Pope.

Length on outside curve.	Circumfer- ence above the first point.	Tip to Tip.	Points.	Locality.	Owner.
38½	4	25	5+5	Mandla . . .	Hon. Walter Rothschild.
-38¼	4¾	19½	3+3	Asirgarh Jungle, Central Provinces	Lieut.-Col. M. Cust.
38	4¾	18	3+3	East Berar . . .	Brig.-Gen. F. H. Whitby.
38	4¼	20	4+4	Do. . .	Major-Gen. H. D'U. Keary.
38	4½	22	4+4	?	Col. A. Pollock.
37½	3¾	19	3+3	Siwalik Hills . . .	Major B. R. M. Glossop.
37½	4¼	24¾	4+4	Bassim, C.P. . . .	British Museum (Hume Col- lection).
37¼	4¼	21	4+3	?	Major A. D. Greenhill-Gardyne.
37¼	4¼	16⅞	4+5	?	Sir Victor Brooke's Collection.
37¼	4¼	17	4+4	United Provinces . . .	A. Courthorpe.
-37¼	4½	12¾	4+4	?	J. C. Phillips.
37¼	4	21½	3+3	Central Provinces . . .	A. P. Jack.
36¾	4	20¾	4+4	Do. . .	J. A. McKee.
36½	4½	20	5+5	Do. . .	Hon. J. Best. (See illustration, p. 70.)
36½	4½	25	4+3	Berar . . .	C. H. Seely.
35¾	4	19¾	3+3	Central Provinces . . .	Major G. T. M. Bridges.
35½	4¼	18⅞	4+4	?	Sir Edmund G. Loder, Bart.
35½	4	12¼	5+5	?	G. W. Hatch.
35½	4	32½	3+3	?	Capt. R. Tudor Owen.
35½	3¾	19	3+3	?	Col. H. Denys.
-35	3¾	17¼	3+3	Ceylon . . .	R. Wilson.
-34½	4⅞	19¼	3+3	Do. . .	F. J. S. Turner.
-34¼	...	...	3+3	Do. . .	G. A. Burney.
-33¾	4⅞	14⅞	3+3	Do. . .	J. P. Ireson.
-33⅞	3⅞	...	3+3	Do. . .	A. J. Wickwar.
-32¾	4½	24	3+3	Do. . .	E. M. Biggs.
-32	4⅞	14⅞	3+3	Do. . .	J. G. Napier.
32	3¼	19½	3+3	Do. . .	W. J. Smith.
31¾	4	13	3+3	Do. . .	M. J. Alderson.
-31½	3¾	17½	3+3	Do. . .	Count Scheibler.
31½	3	10½	3+3	Do. . .	A. R. Hay.
-31¼	3⅞	17	3+3	Do. . .	G. B. Vernon.
-31¼	3	9	3+3	Do. . .	H. Storey.
30½	3½	10¼	3+3	Do. . .	Major F. H. N. Pym.



Head of Hog-Deer.

The HOG-DEER or PARA (*Cervus* [*Hyelaphus*] *porcinus*).

In the group typified by the hog-deer the antler-pedicles are long, the bulla of the skull is large, and the pit for the face-gland much less deep than in the sambar group, while the nasal bones are not expanded superiorly, and the tail is shorter. In the Philippines the group (*Hyelaphus*) is represented by the Philippine hog-deer *C. calamienensis*, and by the species named *C. culionensis*. The Indian hog-deer is not dissimilar to the Bavian deer, but the antlers are larger, the build longer and lower, and the summer coat of the adult, as well as that of the young, spotted with yellowish white. General colour in winter rufous or yellowish brown, somewhat speckled above, and much darker beneath; in summer, upper-parts paler and more or less spotted. Antlers on long pedicles, with the hind tine of the terminal fork the shorter. Height at shoulder, from about 25 to 29 inches; weight, about 90 to 100 lbs. A pair of antlers belonging to a specimen shot by Mr. A. O. Hume in the Ganges Khadir, near Meerut, measured 20 inches along the beam inside, and had a mid-beam girth of 3.5 inches.

Distribution.—India, throughout the Indo-Gangetic plain from Sind and the Punjab to Assam, thence through Sylhet to Burma, Tenasserim, and Siam. The Siamese race (*C. p. hecki*) differs from the typical hog-deer by its superior size and the absence of spots.

Length on outside curve.	Circumference above brow-tine.	Tip to Tip.	Locality.	Owner.
-23 $\frac{1}{4}$	3 $\frac{7}{8}$	12 $\frac{7}{8}$	Burma . . .	Col. G. H. Evans.
-22 $\frac{1}{2}$	3 $\frac{1}{4}$	20	Do. . . .	J. C. Phillips.
21 $\frac{5}{8}$	3 $\frac{1}{4}$	6 $\frac{5}{8}$	Do. . . .	British Museum.
-21 $\frac{1}{4}$	3 $\frac{3}{4}$	22 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
-21	3 $\frac{1}{4}$	15 $\frac{1}{4}$	Pegu . . .	Major-Gen. E. M. Norie.
20 $\frac{3}{8}$	3 $\frac{1}{2}$	22 $\frac{1}{2}$	?	Major W. Anstruther Gray.
-20 $\frac{3}{8}$	3 $\frac{1}{8}$	...	Nepal . . .	Bombay Natural History Society.
-20 $\frac{1}{4}$	4 $\frac{1}{2}$	17 $\frac{1}{4}$	?	J. Whitaker.
-20 $\frac{1}{8}$	3	9 $\frac{1}{2}$	United Provinces .	J. Nugent.
-20	...	...	Burma . . .	Indian Museum (Capt. R. C. Beavan).
-19 $\frac{3}{8}$	3 $\frac{1}{8}$	16	Meerut . . .	Major W. Q. Winwood.
19 $\frac{1}{2}$	3 $\frac{1}{8}$	13 $\frac{5}{8}$	Dudla Swamp, United Provinces	Major W. E. Stobart.
19 $\frac{1}{2}$	3 $\frac{1}{4}$	16	?	Col. A. Short.
19 $\frac{1}{8}$	3 $\frac{1}{4}$	16 $\frac{1}{2}$	Burma . . .	Sir Victor Brooke's Collection.
19 $\frac{1}{8}$	3 $\frac{3}{8}$	18 $\frac{3}{4}$	?	H. C. V. Hunter.
19	3 $\frac{1}{2}$	18	Upper Burma .	Sir Edmund G. Loder, Bart.
¹ -18	6 $\frac{1}{2}$	19	Ganges Khadir .	Lieut.-Gen. Sir R. Pole-Carew.
18	2 $\frac{3}{4}$	12 $\frac{3}{4}$	Burma . . .	D. H. M. Boyle.

- Owner's measurements.

¹ Ten points.

The BAVIAN DEER (*Cervus [Hyelaphus] kuhli*).

A small deer allied to the hog-deer, standing about 27 inches at the shoulder, of light build, and of a uniform brown colour, without a dark stripe down the back.

Distribution.—The Bavian Islands, between Borneo and Java.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Owner.
9 $\frac{3}{4}$	2 $\frac{5}{8}$	10 $\frac{7}{8}$	10 $\frac{1}{8}$	3+3	British Museum.



Head of Fallow Deer.

The FALLOW DEER (*Dama vulgaris*, or *Dama dama*).

Antlers normally without a bez, but with a trez-tine, above which the beam is palmated, with numerous snags on the hind edge. Coat spotted with white in summer (except in the black breed), with a black-bordered white area in the neighbourhood of the long tail. Height at shoulder, about 3 feet; weight, about 140 lbs. clean.¹ The original distribution includes Greece, Spain, Portugal, Anatolia, Rhodes, Sardinia, Asia Minor, Northern Palestine, and North-western Africa, but the species has been introduced into Great Britain and some other countries. In Spain wild fallow abound in Estremadura, especially in the province of Cáceres; in Asia Minor they are found along the south coast as far as Adana, and at one spot in the interior; whether they still exist in North Africa is doubtful.

¹ Black specimen shot by W. Winans, September 1909, weighed 240 lbs.

Length on outside curve.	Circumference.	Tip to Tip.	Spread inside.	Points.	Width of Palm.	Locality.	Owner.
32	4 $\frac{1}{8}$	18	28	12 + 10	5 $\frac{1}{4}$	Woburn . . .	Duke of Bedford.
-31 $\frac{1}{2}$	...	31	28 $\frac{1}{2}$	...	...	?	Ernest Ritter von Wisely.
¹ 31	5	...	...	30	7	?	Sir Victor Brooke's Collection.
-30 $\frac{3}{4}$	5	10 $\frac{1}{2}$	20 $\frac{1}{4}$	13 + 11	5	?	J. C. Phillips.
² 30	4 $\frac{3}{4}$	23 $\frac{1}{2}$	26 $\frac{1}{2}$	10 + 9	4 $\frac{1}{2}$	Drummond Castle	J. G. Millais.
30	3 $\frac{5}{8}$	...	22 $\frac{3}{8}$	12 + 12	...	Uppark, Sussex .	J. E. Harting.
30	4	19 $\frac{1}{4}$	24	11 + 11	6		Douglas M'Douall.
-30	4 $\frac{1}{2}$	22	37 outside	16 + 10	7	Drummond Castle	J. G. Millais.
29 $\frac{3}{4}$	4 $\frac{1}{2}$	22 $\frac{3}{4}$	25 $\frac{1}{2}$	9 + 8	5	?	Capt. H. T. Timson.
29 $\frac{1}{2}$	5	...	28 $\frac{1}{2}$	13 + 14	7	Petworth, Sussex	J. G. Millais.
29 $\frac{1}{2}$	4 $\frac{3}{8}$	...	24 $\frac{3}{8}$	10 + 15	...	Drummond Castle	Earl of Ancaster.
29 $\frac{1}{4}$	4 $\frac{1}{2}$	...	...	14 + 11	8	Woburn . . .	Duke of Bedford.
29 $\frac{1}{4}$	4 $\frac{1}{8}$	...	19 $\frac{3}{4}$	16 + 15	...	New Forest . .	Hon. G. Lascelles.
-28 $\frac{3}{4}$	6 $\frac{1}{4}$	...	29 $\frac{1}{2}$	20	6 $\frac{3}{4}$	Bohemia . . .	W. Winans.
-28 $\frac{1}{2}$	4	15 $\frac{1}{4}$	23	9 + 8	5 $\frac{3}{4}$	Essex . . .	W. H. Wilson.
28 $\frac{1}{2}$	4 $\frac{1}{8}$	18	24 $\frac{3}{4}$	8 + 6	4	New Forest . .	E. Festus Kelly.
³ -28 $\frac{1}{2}$	4	14 $\frac{1}{2}$	26	10 + 11	6	Woburn . . .	Duke of Bedford.
-28 $\frac{1}{2}$	5	...	30	22	...	Otago, New Zealand (Introduced)	Rev. W. C. Oliver.
⁴ 28 $\frac{1}{2}$	4	(Span 34) outside	...	19	6	Colebrooke . .	Sir Victor Brooke's Collection.
28 $\frac{1}{4}$	4 $\frac{3}{4}$	23	...	18 + 15	6 $\frac{1}{4}$	?	Sir Philip Brocklehurst, Bart.
⁵ -28	4 $\frac{1}{4}$	26	26	23	...	Surrenden Park .	W. Winans.
27 $\frac{1}{2}$	4 $\frac{1}{4}$	15 $\frac{3}{4}$	20 $\frac{1}{2}$	8 + 9	4 $\frac{3}{4}$	Windsor . . .	Sir Charles Wakefield.
27 $\frac{1}{4}$	4	23	...	10 + 8	...	England . . .	J. Carr Saunders.
26 $\frac{7}{8}$	3 $\frac{3}{4}$	12	17 $\frac{1}{2}$	10 + 7	...	?	British Museum.
-26 $\frac{1}{2}$	4 $\frac{1}{4}$	23 $\frac{1}{2}$	20 $\frac{1}{2}$	9 + 7	5 $\frac{7}{8}$	Perthshire . . .	A. Basil Brooke.
26	3 $\frac{3}{4}$	8 $\frac{1}{4}$	23 $\frac{1}{2}$	7 + 7	5	?	G. L. Harrison.
-26	5	20 $\frac{3}{4}$	23 $\frac{3}{4}$	10 + 10	4 $\frac{1}{2}$	Tasmania. (Intro- duced)	T. W. H. Clarke.
25 $\frac{3}{4}$	3 $\frac{3}{4}$	13 $\frac{1}{2}$	23 $\frac{1}{2}$	13 + 12	5	?	T. G. A. Moncrieffe.
⁶ 25 $\frac{1}{2}$	3 $\frac{3}{4}$	17 $\frac{3}{4}$	24 $\frac{1}{4}$	10 + 10	6	Surrenden Park .	W. Winans.
25	3 $\frac{1}{4}$	...	19 $\frac{3}{4}$	8 + 8	...	Epping Forest .	E. N. Buxton.
25	3 $\frac{1}{2}$	15 $\frac{1}{2}$	...	10 + 10	4	Northamptonshire	H. H. the Maharaja of Bikanir.
-24	3 $\frac{1}{2}$	27	21 $\frac{1}{2}$	23	...	Surrenden Park .	W. Winans.

- Owner's measurements.

¹ Recorded by J. G. Millais (*British Deer and their Horns*).

² Weight of antlers, 8 lbs. 1 oz. on skull; no lower jaw (Millais, *British Deer*).

³ Weight dressed, 165 lbs.

⁴ Seven years old; as he fell, 237 $\frac{1}{2}$ lbs.; 198 lbs. cleaned.

⁵ Weight, 218 lbs.

⁶ Weight, 222 lbs.



Head of Mesopotamian Fallow Deer. From a specimen in the British Museum.

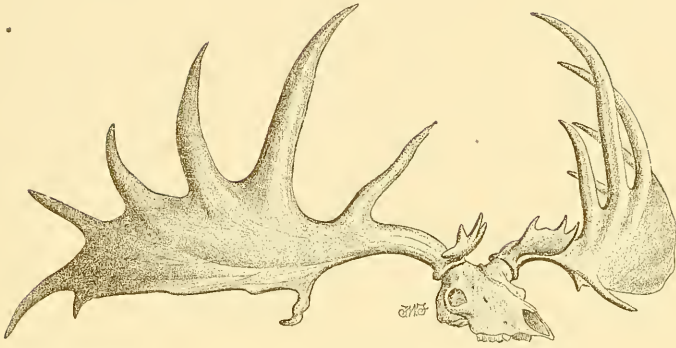
The MESOPOTAMIAN FALLOW DEER (*Dama mesopotamica*).

Larger and brighter coloured than the ordinary fallow deer, with the spots near the middle of the back tending to form longitudinal stripes, and the tail wholly white. Antlers of a totally different type, being somewhat expanded at the origin of the trez-tine (which is large, and situated some distance above the short brow-tine), but at the summit only moderately flattened, and breaking up on the hind border into several snags. Weight, about 24 stone, clean.

Distribution.—The mountains of Luristan in Mesopotamian Persia and part of Asia Minor.

Length on outside curve.	Circumference.	Tip to Tip.	Spread inside.	Points.	Width of Palm.	Locality.	Owner.
36½	4¾	16¾	..	12 + 15	5¾	Karabogha, Asia Minor	F. E. Whittall.
29	4¼	30½	24¼	10 + 11	5½	Asia Minor	Do.
21¼	3½	14½	..	9 + 7	...	Do.	Paris Museum (Abbé David).
20¼	5	14	...	6 + 5	...	Luristan Mts.	Sir Edmund G. Loder, Bart.

· Owner's measurements.



Skull and Antlers of extinct Giant Irish Deer (Irish Elk).

The GIANT IRISH DEER (*Dama (?) gigantea*).

(Commonly called "Irish Elk.")

An extinct deer, probably standing at least 6 feet at the shoulder, with the antlers enormously expanded, and carrying several large tines on the front border, of which the one above the trez is the longest; the brow-tine being often flattened and forked. In its typical form this magnificent deer occurs in the Prehistoric deposits of Ireland, England, and probably some of the western districts of the Continent. In the skull the vomer is welded to the adjacent bones. The following specimens are Irish:—

Spread Tip to Tip.	Length round inside of antler.	Length of both antlers across skull.	Circum- ference above burr.	Width of Palm.	Points.	Owner.
ft. in.	ft. in.	ft. in.				
10 2	5 8½	...	9½	19¼	19	British Museum.
9 8	...	...	...	20	12 + 11	Hon. Walter Rothschild.
9 6	...	...	10	17	13 + 10	J. G. Millais.
9 5	6 2	12 5	11	21¼	11 + 11	Viscount Powerscourt.
9 5	6 0	12 10	13½	21½	15 + 13	Sir Edmund G. Loder, Bart.
9 3	6 2	13 5	10	24	12 + 10	Duke of Westminster.
9 2	...	13 6	...	15½	...	Mrs. Graham Lloyd.
8 11	5 10	...	11¼	17	9 + 9	Viscount Powerscourt.
8 10	5 9	11 9½	9¼	17	12 + 11	Duke of Westminster.
8 10	5 10	12 5	10	18	10 + 9	G. C. Whitaker.

OWNER'S MEASUREMENTS.

Spread to Tip.	Tip	Length round inside of antler.	Length of both antlers across skull.	Circumference above burr.	Width of Palm.	Points.	Owner.
ft. in.		ft. in.	ft. in.				
11 9		7 10	...	9 $\frac{1}{4}$	18 $\frac{1}{2}$	...	Public Library, Dublin.
11 6		...	...	...	20	...	Marquis of Londonderry.
11 5	6 3	...	...	9 $\frac{3}{4}$	17	11 + 11	Dublin Museum.
11 3	7 5 $\frac{1}{2}$	...	...	12 $\frac{1}{4}$	19 $\frac{1}{4}$	17	Mrs. Donaldson-Hudson.
11 1 $\frac{1}{2}$	6 9 $\frac{1}{2}$	...	...	9 $\frac{1}{4}$	16 $\frac{1}{2}$	23	Sir Peter Walker, Bart.
10 4 $\frac{1}{2}$	6 9	13 10	12	20	...	Earl of Bessborough.	
9 3	...	...	10 $\frac{3}{4}$	12	7 + 7	Duke of St. Albans.	
9 2	...	11 10	10 $\frac{1}{4}$	22 $\frac{1}{4}$	9 + 9	Dublin Museum.	

The MILU or PÈRE DAVID'S DEER (*Elaphurus davidianus*).

This deer differs from all the preceding groups by the peculiar form of the antlers, which rise in the plane of the forehead, and fork at a comparatively short distance above the burr, the front prong of the fork again dividing, while the hind prong is long and straight. The bushy tail is longer than in any other deer, and the neck of the male is maned. There is a gland on the outer side of the upper half of the hind cannon-bone, but none on the hock. The colour is uniformly tawny in the adult, but spotted in the young. Height at shoulder, about 3 feet 9 inches. In captivity the antlers are frequently shed twice a year. In the structure of the bones of the feet the milu resembles the red deer group, to which and the barasingha it is considered by Mr. R. I. Pocock to be allied. Mr. Pocock considers that the front prong of the main fork represents the brow-tine of the red deer groups.

Distribution.—Probably northern China or perhaps Kashgaria; recorded in a fossil state from Japan. Unknown in the wild state, and apparently now represented only by the herd at Woburn Abbey, Bedfordshire.

Length on outside of curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
34 $\frac{1}{2}$	6 $\frac{1}{4}$	23 $\frac{1}{2}$	29 $\frac{1}{2}$	13 + 7	Woburn . . .	Smithsonian Institution.
33 $\frac{3}{4}$	5 $\frac{3}{4}$	25 $\frac{1}{2}$	...	21 + 17	?	Mess of 19th Punjabi Infantry.
32 $\frac{1}{4}$	6 $\frac{3}{4}$	13 $\frac{3}{4}$	18 $\frac{1}{2}$	8 + 8	Near Peking . . .	Sir Edmund G. Loder, Bart.
1 32	7 $\frac{1}{2}$	...	...	10 + 8	Woburn . . .	Duke of Bedford.

— Owner's measurements.

† Back-tine of this head measures 32 $\frac{1}{2}$ inches.



Head of Milu Deer.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-31	6	...	...	3+3	?	American National Collection.
31	6½	27¼	...	3+3	?	Hon. Walter Rothschild.
31	4¾	23	...	7+6	?	British Museum (Duke of Bedford).
-30¾	5	35⅛	35⅛	11+10	Imperial Park, Pekin	Paris Museum (Type specimen).
30	5¾	24¾	...	3+2	?	G. L. Harrison.
29½	5¼	...	...	5+5	?	Duke of Bedford.
-29¼	6⅝	29	...	3+2	?	Major W. Anstruther Gray.
28¼	5⅝	26½	...	3+3	?	Hon. Walter Rothschild.
28¼	6½	...	...	8+8	Woburn	Duke of Bedford.
27	5⅞	20¼	...	6+5	Do.	British Museum.
26½	5½	16	18½	8+7	Do.	Royal Scottish Museum.
1 25	5	...	...	6+4	Do.	Duke of Bedford.
22	4⅝	...	...	4+3	Do.	Do.

- Owner's measurements.

1 Back tine measured 28 inches from beam of antler.



Skull and Antlers of Indian Muntjac.

The MUNTJAC or BARKING DEER (*Cervulus muntjac*).

This species is the typical representative of a genus of small Indo-Malay deer differing widely from all the foregoing groups. The antlers, which do not usually exceed half the length of the head, have a short brow-tine and an unbranched beam, and are supported on long skin-covered pedicles, continued downwards as convergent ridges on the forehead, whence the name of rib-faced deer. Tufts of bristly hair occupy the position of the antlers in the females. The muzzle has a large naked portion, and although there is generally a pair of glands on the face, there are none either on the hock or the cannon-bone. The young may be spotted, but the adults are uniformly coloured. The range of the typical muntjac, which is one of the reddish-coloured species, extends from Ceylon and India through Burma to China, the Malay Peninsula, Sumatra, and Java. Reeves' muntjac (*C. reevesi*), from China and Formosa, a smaller species, is also reddish, as is Sclater's muntjac (*C. sclateri*) of Central China, and the Sze-chuan *C. lachrymans*; *C. bridgmani*, of Central China, is darker; in the Tenasserim muntjac (*C. feæ*) and the larger hairy-fronted muntjac (*C. crinifrons*) of Eastern China the general hue is dark purplish sepia-brown, with white on the buttocks and under surface of the tail. The average height of the male of the typical species at the shoulder is from 20 to 22 inches, and the weight about 38 lbs.; a female stands about 20 inches and weighs about 32 lbs.

Several local races of the ordinary muntjac doubtless exist. The typical form (*C. muntjac typicus*) is the Javan animal; the Burmese race has been distinguished as *C. muntjac grandicornis*, while the Indian form is known as *C. m. vaginalis*, and the Siamese as *C. m. curvostylis*.

The antlers of the Burmese race are large and massive. The earlier name *Muntiacus* is often used in place of *Cervulus*.

Length on outside curve of antler from burr to tip.	Circumference above burr.	Tip to Tip.	Locality.	Owner.
-10 $\frac{3}{8}$	...	...	Java . . .	H. Van Son.
1-9 $\frac{1}{2}$	4 $\frac{1}{2}$	5	Singapore . . .	Sir Edmund G. Loder, Bart.
8 $\frac{7}{8}$	3	2 $\frac{3}{4}$	Java . . .	M. Maxwell.
-8 $\frac{5}{8}$	3 $\frac{3}{4}$	6 $\frac{1}{4}$	Do. . . .	Dr. Albert von Stephani.
17 $\frac{5}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	Lombok . . .	Hon. Walter Rothschild.
7 $\frac{5}{8}$	3	3	Siwalik Hills . . .	Major W. E. Stobart.
7 $\frac{5}{8}$	2 $\frac{1}{4}$	1 $\frac{3}{4}$	U. Burma . . .	L. H. Baker.
27 $\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{7}{8}$	Lombok . . .	Hon. Walter Rothschild.
7	3 $\frac{7}{8}$	4 $\frac{1}{4}$	Burma . . .	Maj.-Gen. H. D'U. Keary.
-6 $\frac{3}{4}$	2 $\frac{3}{4}$	2 $\frac{1}{2}$	Perak . . .	Perak Museum.
6 $\frac{3}{4}$	2 $\frac{1}{4}$	3	Ranikhet . . .	Surgeon Lieut.-Col. B. W. C. Deeble.
6 $\frac{5}{8}$	2 $\frac{1}{4}$	3 $\frac{1}{8}$	Java . . .	J. C. Van Son.
6 $\frac{1}{2}$	2 $\frac{5}{8}$	3 $\frac{1}{2}$	Nepal . . .	British Museum (B. H. Hodgson).
6 $\frac{1}{2}$	3 $\frac{3}{8}$	2 $\frac{5}{8}$	Buxa Duar . . .	Capt. A. O. Creagh.
-6 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{8}$	Namba Forest, Assam	Lieut.-Col. H. S. Wood.
-6 $\frac{1}{2}$	2 $\frac{7}{8}$	3 $\frac{1}{4}$	Ranikhet . . .	Col. E. T. Taylor.
-6 $\frac{1}{4}$	...	...	Garro Hills . . .	D. H. Allen.

CENTRAL CHINESE MUNTJAC (*Cervulus lachrymans sclateri*).

About equal in size to the last, with the upper part of the head and fore-neck bright yellow and the body browner than in *muntjac*. The lower portion of the front of the fore-legs is blackish brown. In the typical *C. lachrymans*, of Sze-chuan, the head is orange brown, and the limbs are brownish fawn. Weight of male 38 and female 36 lbs.

Distribution.—Central China.

Length on outside curve of longest antler.	Circumference.	Tip to Tip.	Locality.	Owner.
5 $\frac{1}{8}$	2 $\frac{1}{2}$	3 $\frac{3}{8}$	China . . .	Comdr. the Hon. R. O. B. Bridgeman, R.N.
5	2	3	Anghwei, China . . .	British Museum.
3 $\frac{3}{4}$	2	2 $\frac{3}{4}$	Tungkuan Shan, C. China	Comdr. the Hon. R. O. B. Bridgeman, R.N.
2 $\frac{1}{2}$	1 $\frac{5}{8}$	3	Ningpo . . .	British Museum (R. Swinhoe).
-2 $\frac{1}{2}$	1 $\frac{1}{2}$	3 $\frac{1}{4}$	Do. . . .	Dublin Museum.

- Owner's measurements.

¹ Determination provisional.

² Weight 37 lbs.



Skull and Antlers of Muntjacs in the collection of Sir Edmund G. Loder, Bart.

The HAIRY-FRONTED MUNTJAC (*Cervulus crinifrons*).

Length on outside curve of longest antler.	Circumference.	Tip to Tip.	Locality.	Owner.
1½	...	4½	Ningpo . . .	British Museum.

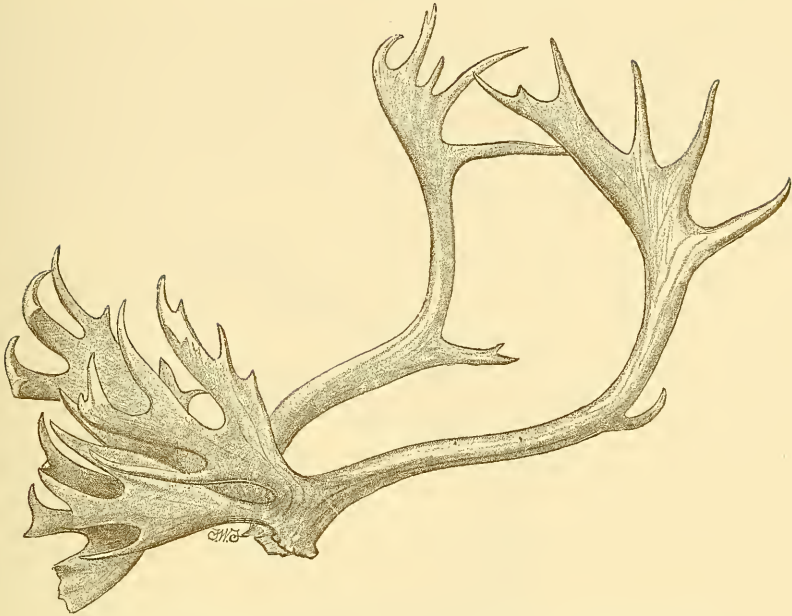
REEVE'S MUNTJAC (*Cervulus reevesi*).

Length on outside curve of longest antler.	Circumference.	Tip to Tip.	Locality.	Owner.
4½	2¾	Shed	?	Sir Edmund G. Loder, Bart.
3½	2¾	3½	?	Comdr. the Hon. R. O. B. Bridgeman, R.N.
2½	2¾	3¼	Feng Luang Shan .	Do.

BRIDGEMAN'S MUNTJAC (*Cervulus sinensis* = *bridgemani*).

Length on outside curve of longest antler.	Circumference.	Tip to Tip.	Locality.	Owner.
5	2	3	Feng Luang Shan .	Comdr. the Hon. R. O. B. Bridgeman, R.N.
¹ 3½	3	3	China . . .	Capt. H. L. Archer-Houblon.
¹ 1½	1½	1¾	Nyanking on the Yangtsi	Capt. A. T. Hunt, R.N.
¹ 1	..	3½	China . . .	Comdr. C. L. Lambe, R.N.

¹ Determination provisional.



Antlers of Woodland Caribou. From a specimen in the British Museum.

The REINDEER or CARIBOU (*Rangifer tarandus*).

Distinguished from all other deer by the presence of antlers in both sexes; those of males being complex, with the brow-tines palmated and often unsymmetrical, and the bez, or second tine, also generally expanded. The muzzle is hairy, the ears and tail are short, and the throat has a fringe of long hair. The coat is very thick, and typically dark cinnamon-brown in colour above, with the limbs, a flank-band, and some of the under-parts darker, the neck lighter, and more or less white in the region of the tail, on the under-parts, and fetlocks. In *R. t. montanus* the whole neck and lower surface are chocolate-brown, but in most American races there is some white in these regions, and *R. t. pearyi*, of Ellesmereland, is almost wholly white. The false or lateral hoofs are unusually large and spreading; and there is a patch of long white hair covering a gland on the hock, but none on the hind cannon-bone. Glands between main hoofs. Height at shoulder reaching to 4 feet 10 inches (Newfoundland). Hinds weigh between 224 and 280 lbs.

Reindeer inhabit the circumpolar regions of both hemispheres, in Europe including Scandinavia, Lapland, and Northern Russia; their southern limit varies from 52° to 54° N. latitude, while they extend to between 80° and 81° northwards.

Numerous local forms of reindeer are recognised. The more important are: (1) the Scandinavian reindeer (*R. tarandus typicus*) of Sweden and Norway, which is rather small with moderately expanded antlers; (2) the larger Finnish reindeer (*R. t. fennicus*), distinguished by the more vaulted nasal bones; (3) the woodland caribou (*R. t. caribou*) of the forest districts of Arctic America, characterised by its large size and the short,



Antlers of Woodland Caribou from Nova Scotia.
From a specimen in the British Museum.

much-palmated antlers, in which the brow-tines form huge "shovels," one generally much larger than the other; and (4) the Barren-Ground reindeer (*R. t. arcticus*), from the open country north of the forests in America, nearly related to the Scandinavian reindeer, and characterised by its small bodily size, and the great length and simple form of the antlers, in which, except on the brow-tine, there is scarcely any palimation. The reindeer of Siberia and Novaia Zemlia, which approximate to the American types, have been named *R. t. sibiricus* and *R. t. pearsoni*. Names have been given to numerous American local forms, some of

which tend to connect the Barren-Ground with the woodland type. The Greenland caribou (*R. t. grælandicus*) is of the Barren-Ground type, but all the rest are nearer the woodland form. Among these, the Newfoundland *R. t. terræ-novæ* has antlers of a very complex type; *R. t. montanus* and *R. t. osborni* are mountain-races, probably passing towards *R. t. stonci* and *R. t. granti* of Southern Alaska, which have somewhat longer antlers, and thus approach the Barren-Ground type, although they are large animals. Reindeer have brow-tined antlers, but otherwise appear to be related to the American deer.

A.—AMERICAN SPECIMENS.

Length on out-side curve.	Circum-ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
62	5½	40	50½	21 + 17	Hudson's Bay	Sir Edmund G. Loder, Bart.
59	6¼	29½	40½	11 + 9	Yukon . . .	Hon. M. Egerton.
58	6	27¼	41	11 + 12	Cassiar . . .	R. Hayne.
58	5¼	40¼	45	20 + 14	Labrador . . .	H. Hesketh-Prichard.
¹ 57½	5¼	13¾	...	13 + 7	Arctic America . . .	British Museum.
57¼	5¾	29¼	36¾	18 + 10	Yukon . . .	F. C. Selous.
57	5½	16½	26½	20 + 9	N. of Davis Strait . . .	Capt. C. R. E. Radclyffe.
55¾	6½	25	35	23 + 15	Cassiar . . .	Col. L. Parry.
² 55¾	8	...	44	26 + 18	Alaska . . .	American National Collection (Reed Collection).
55½	6	28	43	13 + 10	Stikin River . . .	P. Niedieck.
55	6	43	48	12 + 14	Cassiar . . .	F. C. Selous.
55	6	21	35	12 + 10	Do. . . .	W. A. Conduitt.
55	6¼	19	40	19 + 21	Do. . . .	F. H. Bailey.
54½	5¾	37¼	44¼	16 + 13	Yukon . . .	Sir A. Armstrong, Bart.
54	6	28	31¾	18 + 14	Do. . . .	S. R. Vereker.
54	5¾	31	38¼	13 + 16	Cassiar . . .	Lord Osborne Beauclerk.
54	6½	29	37	22 + 11	Alaska . . .	Hon. J. C. Lister.
54	4¾	48	52	21 + 14	Canada . . .	D. F. Mackenzie.
53½	5½	37	45¼	24 + 14	Labrador . . .	K. V. Painter.
53	4½	48¾	54	12 + 11	Do. . . .	Hon. Walter Rothschild.
52½	5¼	15	26½	17 + 12	N. Canada . . .	J. Talbot Clifton.

¹ *R. t. arcticus*.

² *R. t. osborni*.



Mr. Hesketh-Prichard's 49-Pointer.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
52	5 $\frac{3}{4}$	28 $\frac{1}{4}$	31	15+13	E. Yukon . . .	J. Todd.
52	5	32 $\frac{1}{4}$	37	12+11	Cassiar . . .	Lord Hindlip.
52	5 $\frac{1}{2}$	6	29	15+20	N. Canada . . .	E. E. P. Cuncliffe.
51 $\frac{1}{2}$	6 $\frac{1}{4}$	33	33	12+12	Cassiar . . .	F. C. Stern.
51 $\frac{3}{8}$	4 $\frac{4}{8}$	40 $\frac{7}{8}$	48 $\frac{3}{8}$	17+14	Hudson's Bay . . .	Sir Edmund G. Loder, Bart.
51	5 $\frac{1}{4}$	27	29 $\frac{1}{4}$	15+15	Yukon . . .	A. D. Pass.
51	6 $\frac{1}{2}$	25 $\frac{1}{2}$	38 $\frac{1}{4}$	20+17	Cassiar . . .	P. N. Graham.
51	6	36	40 $\frac{1}{4}$	16+11	Do. . .	H. C. Wilson.
51	6 $\frac{1}{2}$	33 $\frac{1}{4}$	40 $\frac{1}{2}$	10+8	Do. . .	J. S. Shepherd.
51	6	32	36 $\frac{1}{2}$	15+12	Do. . .	M. W. Ward.
51	5 $\frac{3}{4}$	29 $\frac{1}{4}$	38 $\frac{1}{2}$	15+12	Do. . .	Capt. the Hon. G. H. Douglas Pennant.
50 $\frac{1}{4}$	4 $\frac{1}{4}$	31 $\frac{1}{2}$	38 $\frac{1}{4}$	10+9	Do. . .	Col. H. Appleton.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
50	6 $\frac{1}{4}$	24	35	16 + 13	Cassiar . . .	Viscount Lascelles.
50	5 $\frac{1}{4}$	27	38	12 + 11	Barren Grounds . . .	A. Barclay Walker.
49 $\frac{1}{4}$	5 $\frac{3}{4}$	25 $\frac{1}{2}$	36 $\frac{3}{4}$	13 + 12	Cassiar . . .	R. Beaumont.
49 $\frac{1}{4}$	5 $\frac{1}{2}$	38	42 $\frac{1}{4}$	15 + 15	Do. . . .	C. H. Young.
49 $\frac{1}{4}$	5	30	32	19 + 15	Labrador . . .	H. Hesketh-Prichard.
49 $\frac{1}{4}$	6 $\frac{3}{8}$	26	43	18 + 12	Newfoundland . . .	St. George Littledale.
49	6 $\frac{1}{2}$	25	34 $\frac{3}{4}$	22 + 18	?	Sir W. Bass, Bart.
49	6	26	27 $\frac{1}{2}$	26 + 15	Yukon . . .	H. B. Alexander.
49	5 $\frac{1}{4}$	26 $\frac{1}{4}$	31 $\frac{1}{2}$	19 + 19	Do. . . .	L. Cadbury.
48 $\frac{1}{2}$	6 $\frac{1}{2}$	29	36 $\frac{3}{4}$	20 + 18	Do. . . .	J. Todd.
48 $\frac{1}{2}$	4 $\frac{3}{4}$	19 $\frac{1}{4}$	26 $\frac{1}{2}$	24 + 12	Do. . . .	R. H. Milvain.
47 $\frac{1}{2}$	6 $\frac{1}{2}$	40 $\frac{3}{4}$	38 $\frac{3}{4}$	15 + 14	Itcha Mts., B.C. . . .	W. Neilson.
47 $\frac{1}{4}$	5 $\frac{3}{4}$	24 $\frac{3}{4}$	34	22 + 18	?	C. H. Wilkinson.
46 $\frac{1}{2}$	5 $\frac{3}{4}$	32 $\frac{3}{4}$	35 $\frac{3}{4}$	18 + 12	Cassiar . . .	Major J. F. Church.
46 $\frac{1}{2}$	6 $\frac{1}{2}$	16 $\frac{1}{2}$	28	32	British Columbia . . .	J. Turner-Turner.
46 $\frac{1}{2}$	5 $\frac{1}{2}$	38 $\frac{1}{2}$	39 $\frac{1}{2}$	13 + 10	Newfoundland . . .	T. P. Miller.
46 $\frac{1}{2}$	5 $\frac{1}{2}$	36 $\frac{1}{4}$	41	20 + 16	Do. . . .	Major G. H. A. Ing.
46 $\frac{1}{2}$	4 $\frac{1}{4}$	26	32	11 + 8	Do. . . .	J. T. Lewis.
46	4 $\frac{1}{2}$	24 $\frac{1}{2}$	31 $\frac{1}{2}$	15 + 15	Do. . . .	Capt. H. L. Cottingham.
46	5 $\frac{1}{4}$	26 $\frac{3}{4}$	35	15 + 12	Do. . . .	H. Charrington.
46	5 $\frac{1}{2}$	28 $\frac{3}{4}$	31 $\frac{1}{2}$	10 + 10	Do. . . .	R. H. Venables Kyrke.
45 $\frac{1}{2}$	5 $\frac{1}{2}$	31 $\frac{1}{4}$	33 $\frac{1}{2}$	13 + 12	Do. . . .	F. C. Williamson.
45	5 $\frac{3}{4}$	18 $\frac{1}{2}$	37 $\frac{1}{2}$	17 + 18	Cassiar . . .	J. M. Hanbury.
44 $\frac{3}{4}$	5 $\frac{3}{4}$	...	29 $\frac{1}{2}$	29 + 26	Do. . . .	J. G. Millais.
44 $\frac{1}{2}$	5 $\frac{1}{2}$	18 $\frac{3}{4}$	31	11 + 8	?	Major J. E. Platt.
44 $\frac{1}{2}$	5 $\frac{3}{4}$	20 $\frac{1}{4}$	26 $\frac{1}{4}$	10 + 12	Newfoundland . . .	W. R. Greene.
44 $\frac{3}{8}$	5 $\frac{1}{8}$	34	37	...	Do. . . .	C. H. Akroyd.
44	5 $\frac{1}{4}$	31 $\frac{1}{2}$	37	16 + 13	?	Sir Robert Harvey, Bart.
44	5 $\frac{3}{4}$	24 $\frac{1}{4}$	32 $\frac{1}{2}$	17 + 21	Newfoundland . . .	J. G. Millais.
44	5 $\frac{1}{2}$	18 $\frac{1}{4}$	30	18 + 13	Do. . . .	Admiral Sir William Kennedy.
44	5 $\frac{3}{4}$	19	26 $\frac{1}{2}$	17 + 14	Do. . . .	Capt. A. G. Allgood, R.N.
43 $\frac{1}{2}$	5	29 $\frac{1}{4}$	31	18 + 10	Cassiar . . .	Sir Cavendish Boyle.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
43 $\frac{1}{4}$	5 $\frac{1}{4}$	20 $\frac{1}{2}$	30	22 + 19	Newfoundland	A. Alexander.
43	5 $\frac{1}{4}$	17 $\frac{1}{2}$	22 $\frac{1}{2}$	15 + 12	Do.	Major C. Hilder.
43	5 $\frac{1}{2}$	21 $\frac{1}{2}$	29 $\frac{1}{2}$	10 + 8	Cassiar	Major R. H. Morgan.
42 $\frac{1}{2}$	7 $\frac{1}{4}$	33 $\frac{1}{4}$	38 $\frac{1}{2}$	22 + 18	Do.	R. Gordon Smith.
42 $\frac{1}{2}$	5 $\frac{1}{2}$	26 $\frac{3}{4}$	30 $\frac{3}{4}$	23 + 13	Yukon	A. Benitz.
42 $\frac{1}{4}$	6 $\frac{1}{4}$	28 $\frac{1}{2}$	35 $\frac{1}{2}$	24 + 15	Newfoundland	Lieut. H. C. Rawson, R. N.
42	6 $\frac{1}{4}$	24	31 $\frac{3}{4}$	17 + 14	Do.	T. A. Armstrong.
42	4 $\frac{1}{2}$	14	20 $\frac{1}{2}$	7 + 7	Quebec	Capt. the Hon. G. H. Douglas-Pennant.
42	5 $\frac{1}{2}$	36 $\frac{1}{2}$	39 $\frac{1}{2}$	20 + 12	Newfoundland	Q. C. Colmore.
42	5 $\frac{3}{8}$	38	41 $\frac{1}{2}$	10 + 10	Do.	E. C. Russell.
42	6 $\frac{1}{4}$	20 $\frac{1}{2}$	30 $\frac{1}{2}$	13 + 12	Do.	G. C. Whitaker.
41 $\frac{1}{4}$	5 $\frac{3}{8}$	15 $\frac{3}{4}$	25 $\frac{3}{4}$	18 + 15	Do.	Prince Nicolas Ghika.
41 $\frac{1}{4}$	5 $\frac{1}{2}$	27	30 $\frac{1}{2}$	16 + 18	Do.	Capt. F. Blacker.
41	5 $\frac{1}{4}$	25 $\frac{1}{2}$	28 $\frac{1}{2}$	14 + 13	Do.	Sir Robert Harvey, Bart.
41	6	35	33	20	British Columbia	Lieut.-Col. C. C. Ellis.
41	5	28 $\frac{1}{2}$	32	14 + 17	Newfoundland	S. H. Whitbread.
40 $\frac{3}{4}$	6 $\frac{5}{8}$	32 $\frac{1}{2}$	37	20 + 17	Do.	His Majesty the King.
40 $\frac{3}{4}$	5 $\frac{1}{2}$	21 $\frac{3}{4}$	29	13 + 9	Do.	Major S. Upperton.
40 $\frac{1}{2}$	5	32	36 $\frac{1}{2}$	14 + 9	Do.	Sir Philip Brocklehurst, Bart.
40	5 $\frac{3}{4}$	19 $\frac{3}{4}$	26	12 + 11	Do.	P. B. Vander Byl.
40	6	31 $\frac{1}{2}$	35 $\frac{1}{2}$	19 + 14	Do.	Admiral Sir William Kennedy.
40	5 $\frac{1}{2}$	26	34 $\frac{3}{4}$	12 + 11	Do.	Dublin Museum.

OWNER'S MEASUREMENTS.

67 $\frac{5}{8}$	7	...	44 $\frac{1}{2}$	38	Hudson's Bay	J. G. Millais.
¹ 62	8 $\frac{3}{8}$	...	50 (outside)	9 + 15	Alaska	American National Collection (Reed Collection).
¹ 60	7 $\frac{1}{4}$	...	43 $\frac{1}{2}$ (outside)	20 + 14	Do.	Do.
60	6	...	50 $\frac{1}{2}$	43	Kenai Peninsula	W. H. Case.
² 60	...	...	34 (outside)	...	North Labrador	United States National Museum, Washington.
58 $\frac{1}{4}$	8 $\frac{1}{8}$	...	39 $\frac{1}{2}$ (outside)	24 + 16	Kenai Peninsula	American National Collection.
² 58	...	...	...	...	North Labrador	United States National Museum, Washington.

¹ *R. t. granti*.² *R. t. arcticus*.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
57½	5¾	36¾	47	21 + 18	Alaska . . .	J. C. Phillips.
57	...	...	...	...	Cassiar . . .	J. G. Millais.
56½	...	...	...	...	Do. . . .	C. Little.
55	7¼	...	...	23 + 22	Yukon . . .	Wilson Potter.
54½	5½	30	44½	31	Alaska . . .	F. T. Colby.
53¼	6¼	44½	55	22 + 23	Yukon . . .	C. T. Summerson.
52	5½	...	39½ (outside)	11 + 10	Cassiar . . .	American National Collection.
52	7	...	42	17 + 14	Do. . . .	L. H. Green.
¹ 50½	...	...	45	...	Do. . . .	American National Collection.
50½	6½	...	37¼	13 + 18	Do. . . .	Wilson Potter.
49½	...	...	...	36	Do. . . .	Count Chas. Hoyos.
² 49	...	...	39 (outside)	22	W. Coast Greenland	American Museum of Natural History.
³ 49	...	...	34	36	?	Do.
48½	6¾	26½	34	27	Newfoundland .	F. Gillett.
48	...	...	43	19	Cassiar . . .	Lieut. R. C. Dalglish, R.N.
48	...	...	...	...	Do. . . .	Col. Max. C. Fleischmann.
46	6½	39	43	13 + 19	Newfoundland .	G. L. Harrison.
¹ 44	...	...	38½ (outside)	36	Cassiar . . .	Madison Grant.
⁴ 42½	...	...	29½ (outside)	25	N. W. Coast of Hudson's Bay	American Museum of Natural History.
⁵ 41	...	...	36	36	Newfoundland .	Madison Grant.

B.—SIBERIAN RACE (*R. tarandus sibiricus*).

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
49½	4½	28½	37	16 + 11	Upper Yenisei Valley .	J. G. Millais.
48	5	26	32¼	16 + 12	Do. . . .	J. C. Phillips.
47½	5	20¾	28¼	16 + 14	Do. . . .	British Museum (Natural History).
46¾	4⅝	20¼	30½	12 + 9	Do. . . .	Dublin Museum.
43	5½	29	30¾	14 + 11	Do. . . .	Hon. Walter Rothschild.
39	5¾	26½	27	6 + 11	Bought at Tashkend .	Sir Edmund G. Loder, Bart.

¹ *R. t. osborni*.

² *R. t. groenlandicus*.

³ *R. t. stonci*.

⁴ *R. t. arcticus*.

⁵ *R. t. terra-novae*.

C.—SCANDINAVIAN RACE.

Length on out-side curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
¹ 60	5 $\frac{5}{8}$	38 $\frac{5}{8}$	41 $\frac{1}{2}$	22 + 15	?	Sir V. Brooke's Collection.
58 $\frac{1}{4}$	4 $\frac{3}{4}$	24 $\frac{3}{4}$	35 $\frac{3}{4}$	7 + 7	Norway . . .	Sir Robert Harvey, Bart.
57 $\frac{1}{4}$	5 $\frac{3}{8}$	25	39 $\frac{1}{2}$	16 + 19	Do. . . .	Do.
55 $\frac{1}{4}$	5 $\frac{1}{4}$	32	37 $\frac{1}{2}$	17 + 15	Do. . . .	P. B. Vander Byl.
55 $\frac{1}{2}$	6 $\frac{1}{2}$	38	43 $\frac{1}{2}$	18 + 8	Sundal Fjelds, Norway	Capt. Gerard Ferrand.
54 $\frac{1}{2}$	4 $\frac{1}{2}$	33 $\frac{1}{4}$	40 $\frac{3}{4}$	15 + 13	Norway . . .	J. H. Thomas.
54 $\frac{1}{2}$	4 $\frac{3}{4}$	32 $\frac{3}{4}$	41 $\frac{1}{2}$	18 + 13	Do. . . .	H. Hunt.
54	4 $\frac{3}{8}$	18	32	10 + 5	Do. . . .	G. C. M. Dewhurst.
54	4 $\frac{1}{2}$	28 $\frac{1}{2}$	35	10 + 7	Do. . . .	R. Persse.
54	5	22	41 $\frac{3}{4}$	16 + 11	Do. . . .	Kenneth M'Douall.
53 $\frac{3}{4}$	4 $\frac{1}{2}$	26	35 $\frac{1}{2}$	12 + 8	Do. . . .	J. M. Hanbury.
53	5	...	...	...	Do. . . .	J. G. Millais.
53	4 $\frac{5}{8}$	39 $\frac{1}{2}$	53 $\frac{1}{4}$	15 + 10	Do. . . .	A. Alexander.
53	5	11 $\frac{1}{4}$	35 $\frac{1}{4}$	16 + 12	Do. . . .	H. Hunt.
53	4 $\frac{1}{2}$	30 $\frac{3}{4}$	42 $\frac{1}{2}$	12 + 8	Do. . . .	R. L. Scott.
52 $\frac{1}{2}$	4 $\frac{3}{4}$	20 $\frac{1}{4}$	50 $\frac{1}{4}$	19 + 13	Do. . . .	C. M. Black.
52 $\frac{1}{4}$	4 $\frac{3}{4}$	22 $\frac{1}{4}$	41	10 + 9	Do. . . .	A. D. Pass.
51 $\frac{1}{2}$	4 $\frac{3}{4}$	30	39 $\frac{1}{4}$	16 + 16	Spitzbergen . . .	G. A. Shenley.
51	4 $\frac{1}{2}$	31	39 $\frac{1}{2}$	14 + 8	Norway . . .	H. R. H. the Duc d'Orléans.
51	4 $\frac{3}{4}$	31 $\frac{1}{2}$	40 $\frac{1}{2}$	12 + 6	Do. . . .	F. C. Selous.
51	4 $\frac{1}{2}$	10 $\frac{1}{2}$	36 $\frac{3}{4}$	12 + 9	Do. . . .	A. Churchill.
50 $\frac{3}{8}$	4 $\frac{1}{2}$	24	29 (outside)	16 + 13	Do. . . .	H. R. H. the Duke of Saxe-Coburg and Gotha.
50	4 $\frac{3}{4}$	27 $\frac{1}{2}$	40 $\frac{1}{2}$	11 + 10	Do. . . .	Sir H. Seton-Karr.
50	4 $\frac{1}{4}$	33 $\frac{3}{4}$	40 $\frac{1}{2}$	12 + 9	Do. . . .	J. C. Maxwell.

OWNER'S MEASUREMENTS.

59 $\frac{1}{2}$	...	...	41 $\frac{3}{4}$	11 + 14	Norway . . .	R. L. Scott.
59 $\frac{1}{2}$	7	38	44	15 + 16	Do. . . .	J. Whitaker.
59	4 $\frac{1}{2}$	42 $\frac{1}{2}$	46 (outside)	7 + 5	Do. . . .	H. J. Elwes.
58	6	30 $\frac{1}{2}$	37	33	Do. . . .	S. Ratcliff.
52 $\frac{1}{4}$	5	27	36 $\frac{1}{2}$	26	Do. . . .	Abel Chapman.

¹ Perished antlers.

Extract from a letter of Mr. J. G. Millais, 14th August 1907:—

“For the purpose of comparison with other local races of reindeer I give the measurements of the twelve best specimens of Newfoundland caribou which I have obtained in the island. In all scientific accounts dealing with the measurements of reindeer antlers no notice is taken of the size of the large brow-shovel, a matter of great importance in determining the respective merits of individual heads. Mere length of antler is not everything in judging the qualifications of deer heads, whilst in this species in particular we must consider beam, span, number of points, symmetry, and size of the large brow-tine, a feature which adds so much to the general character.

Length on outer curve.	Circumference above bez-tine.	Breadth of brow-tine on anterior margin from base to top front point.	Widest inside.	Points.	Locality.
46	5½	14	31	45	Tamnapewawi Lake, 1906.
46	6	14	30	35	Upper Gander, 1905.
43	7	16¼	35	36	Shoehill Ridge, 1906.
42	6	16½	34	44	Upper Gander, 1903.
42	5½	15	31	31	Resequit Hills, 1906.
40	5	15½	32	38	Upper Gander, 1905. Picked up.
40	5¼	15½	39	25	Do. 1905.
38	5½	15	28	35	Do. 1903.
38	5½	18	31	35	Millais's Lake, 1902.
37½	6¾	17½	33	32	Migwell's Brook, 1905.
36	7	16½	29	49	Upper Gander, 1903.
36	6½	13½	38	32	Resequit Hills, 1906.

“The points of reindeer are difficult to count. No point should be included that does not fulfil the old watchguard or powder-horn test, unless it may be a clean blunt snag at least half an inch from the main horn.

“The Germans count everything as a point upon which a torn piece of paper will rest, but we regard all small excrescences that do not fulfil the old British conditions as of no account. For instance, Captain Cartwright's famous ‘72 point Labrador head,’ which I have recently traced, and on which he counted every prominence, has in reality 53 points.”

The ROEBUCK (*Capreolus caprea*).(Also known as *Capreolus capreolus*.)

Roebuck may be recognised by the rudimentary tail, and the medium-sized antlers rising close together and almost vertically from the head, without a true brow-tine, and regularly forking at a point about two-thirds the total length, with the posterior prong again subdividing, so that the number of points is usually three. There is no gland or tuft on the hock, but one on the upper part of the outer side of the hind cannon-bone. In the European roe the height at the shoulder is about 26 inches. In winter the coat is dark speckly brown with a large white rump-patch, but in summer foxy red, with little or no white behind. As in the Japanese sika, the white hairs of the winter rump-patch expand under the influence of excitement to form a large disc. The range embraces the greater part of Europe as far as the southern Caucasus, Palestine, and perhaps Persia.

In the typical Scandinavian roebuck there is a yellowish tinge in the winter coat, which is wanting in the greyer Spanish *C. c. canus*; the Transylvanian *C. c. transylvanicus* differs from both by the distinct whitish throat and neck patches, while the British *C. c. thotti* is distinguished from all three by the face being darker than the body.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13	4	14½	Germany	Viscount Powerscourt.
12½	...	6¼	Forfarshire	J. G. Millais.
12¼	4¾	9	Servia	Viscount Powerscourt.
11⅝	...	6	Monymusk, N.B. . . .	Sir Arthur Grant, Bart.
¹ 11½	...	...	Orton, Speyside	Sir J. Macpherson Grant, Bart.
11⅞	6	6	Perth	J. G. Millais.
11	7¼	...	Ross-shire	H. M. Warrand.
11	3¾	6¼	Dorset	F. Gordon Scott.
11	5⅞	7½	Ross-shire	H. M. Warrand.
¹ 11	28	8¾	Germany	Viscount Powerscourt.
11	7½	6⅝	Sligo, Ireland	Sir Josslyn Gore Booth, Bart.
11	3½	6½	Ballindalloch	G. B. Macpherson Grant.
10⅞	2¾	4½	S.-W. Russia	Count Bobrinsky.
10⅝	2⅝	10½	Austria	J. R. Luchsinger.
10½	6½	6	Ballindalloch	Sir J. Macpherson Grant, Bart.
10½	3½	5¾	Inverness	C. Macpherson Grant.

¹ Recorded by J. G. Millais (*British Deer and their Horns*).² Abnormal (Perauque).

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10½	4	6¼ ¹	Austria	H.R.H. the Duc d'Orléans.
10¾	3⅞	5	Inverness-shire ¹ . . .	J. Hamilton Leigh.
10¾	3¾	6¼	Do.	E. G. Fraser-Tytler.
10¾	3¾	2	Perthshire	J. G. Millais.
10⅝	3	2¼	Austria	R. Persse.
10	2¾	4⅞	Russia	H.R.H. Prince Arthur of Connaught.
10	...	4¼	Ross-shire	J. J. de Knoop.
10	4	4¾	Glenmoriston	J. Hamilton Leigh.
9⅞	5	5	Dorset	J. E. Harting.
9⅞	3¾	5½	Spain	A. de Zuleta.
9¾	3½	4	Hampshire	J. Hamilton Leigh.
9¾	8½	...	Sligo	Sir Josslyn Gore Booth, Bart.
9¾	...	4¾	Aberdeenshire	E. S. Hervey.
9¾	3	6¼	Scotland	A. M. Yule.
9⅝	...	7⅝	New Forest	Hon. Gerald Lascelles.
9½	3	3½	Scotland	Col. Ralph Vivian.
9½	3¾	2⅝	Spain	R. de la Huerta.
9¼	3	1¼	Scotland	G. L. Harrison.
9⅓	2¾	3¾	Caucasus	P. H. Thomas.
9⅓	2½	6¼	Scotland	K. M. Chance.
9	2¾	2¾	Do.	G. L. Denman.

OWNER'S MEASUREMENTS.

13	6½	8½	Germany	H.R.H. the Duke of Saxe-Coburg and Gotha.
12⅞	3¾	4½	Austria	Lieut.-Col. J. Marriott.
² 12⅞	...	...	Perthshire	R. Moncrieff.
12. 11	6. 12	5. 4	Hungary	Count Wenkheim.
11½	4¾	...	Scotland	Duke of Bedford.
11	...	4¾	Austria	Duke of Ratibor.
10½	3½	3½	Bohemia	H.S.H. Prince Alexander of Thurn and Taxis.
10¼	...	...	Beaufort, Ross-shire . . .	J. G. Millais.
10	2¼	4½	Ross-shire	Sir Edmund G. Loder, Bart.
10	2¾	5¼	Findrac	E. C. P. Hull.
10	4	3⅝	Spain	Jose de Irruele.
9⅞	2½	4⅝	Bohemia	H.S.H. Prince Alexander of Thurn and Taxis.
9¾	3¼	5	Spain	Abel Chapman.

¹ Found dead.² Recorded by J. G. Millais (*British Deer and their Horns*).

MANCHURIAN ROEBUCK (*Capreolus bedfordi*).

Rather larger than the European species, with the antlers small and slender, the winter coat less brown, and the cheek-teeth taller.

Distribution.—Manchuria and Shen-si; the Kan-su roe has been separated as *C. melanotis*.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{3}{4}$	4 $\frac{1}{4}$	7 $\frac{3}{4}$	Mongolia . . .	G. N. Atkinson.
12	3 $\frac{1}{4}$	7	W. Kan-su . . .	H. F. Wallace.
11 $\frac{3}{4}$	3 $\frac{1}{2}$	6 $\frac{1}{2}$	Shen-si . . .	K. K. Horn.
10 $\frac{3}{4}$	3 $\frac{1}{2}$	5 $\frac{1}{8}$	W. Kan-su . . .	G. Fenwick Owen.
10 $\frac{1}{2}$	3 $\frac{3}{8}$	5	Do. . . .	H. F. Wallace.
9 $\frac{1}{4}$	3	7 $\frac{1}{4}$	S. of Minusinsk . . .	Sir Edmund G. Loder, Bart.



Head of Tien Shan Roebuck.

The ASIATIC ROEBUCK (*Capreolus pygargus*).

Paler and larger than the typical species, the height at shoulder being 30 to 34 inches; the ears shorter and more hairy, the white rump-patch larger, and the antlers longer and more rugose with numerous knotted snags or "pearls."

Distribution.—From the northern Caucasus, the Altai, and mountains of Turkestan to Eastern Siberia. The typical representative is the Altai roebuck. The Tien Shan race (*C. p. tianshanicus*) has antlers somewhat different in form and more branched. In one type of this race the antlers diverge widely, with 4 or 5 tines each, but in a second the divergence and the number of tines are less.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
*17 $\frac{3}{4}$	4	12 $\frac{1}{2}$	Tien Shan . . .	Hon. Walter Rothschild.
17	4 $\frac{3}{8}$	12 $\frac{3}{8}$	Do. . . .	Col. C. B. Wood.
16 $\frac{1}{2}$	3 $\frac{1}{2}$	8 $\frac{5}{8}$	Upper Yenisei Valley .	J. Hamilton Leigh.
*16	4 $\frac{1}{4}$	16	Tien Shan . . .	R. F. Glyn.
16	4 $\frac{1}{2}$	12	?	Viscount Powerscourt.
15 $\frac{3}{4}$	3 $\frac{5}{8}$	16 $\frac{1}{2}$	Siberia	Count Bobrinskoy.
*15 $\frac{3}{4}$	4 $\frac{1}{2}$	13 $\frac{1}{2}$	Tien Shan	J. V. Phelps.
*15 $\frac{3}{4}$	3 $\frac{3}{4}$	12	Do. . . .	Capt. C. M. Threlfall.
*15 $\frac{3}{4}$	5	9 $\frac{7}{8}$	Do. . . .	J. H. Miller.
*15 $\frac{1}{2}$	4 $\frac{1}{2}$	18 $\frac{1}{2}$	Do. . . .	E. W. Dixon.
*15 $\frac{1}{2}$	3 $\frac{1}{2}$	14	Do. . . .	Capt. J. N. Price Wood.
*15 $\frac{1}{2}$	3 $\frac{1}{2}$	15	Do. . . .	P. F. Hadow.
*15 $\frac{1}{2}$	4 $\frac{5}{8}$	16 $\frac{3}{8}$	Do. . . .	Capt. the Hon. G. H. Douglas Pennant.
*15 $\frac{1}{2}$	5	11 $\frac{3}{4}$	Do. . . .	P. B. Vander Byl.
15 $\frac{1}{2}$	5 $\frac{1}{2}$	8	Siberia	Sir Edmund G. Loder, Bart.
15 $\frac{1}{4}$	3 $\frac{1}{2}$	11	Do. . . .	Major W. Anstruther Gray.
*15 $\frac{1}{4}$	4 $\frac{1}{2}$	11	Tien Shan	Lord Osborne Beauclerk.
*15 $\frac{1}{4}$	4	12	Do. . . .	T. P. Miller.
15	3 $\frac{3}{4}$	11	Do. . . .	C. H. Bury.
*15	4	10 $\frac{1}{2}$	Do. . . .	Prince Colloredo, Mannsfeld.
15	3 $\frac{3}{8}$	15	Altai	Royal Scottish Museum.
14 $\frac{1}{2}$	3 $\frac{3}{4}$	15 $\frac{1}{2}$	Do. . . .	J. Hamilton Leigh.
14 $\frac{1}{2}$	4	15	Do. . . .	Duke of Bedford.
14 $\frac{1}{2}$	3 $\frac{1}{2}$	12 $\frac{5}{8}$	Tien Shan	B. Chew.
14 $\frac{1}{2}$	4	10	Do. . . .	Col. A. H. Hussey.
14 $\frac{1}{2}$	3 $\frac{1}{2}$	15 $\frac{1}{4}$	Do. . . .	Major A. D. Greenhill Gardyne.
*14 $\frac{1}{2}$	3 $\frac{1}{4}$	13 $\frac{1}{2}$	Do. . . .	W. R. Read.

OWNER'S MEASUREMENTS.

*18 $\frac{9}{16}$	16 $\frac{3}{4}$	...	?	Carl Hagenbeck.
15 $\frac{1}{2}$	4 $\frac{1}{2}$	6 $\frac{3}{4}$	Tien Shan	J. C. Phillips.
† 15 $\frac{7}{8}$	4 $\frac{7}{8}$	12 $\frac{1}{4}$	Siberia	T. D. M. Cardeza.

¹ Circumference of burr. .

* Tien Shan race.



Skull and Antlers of Alaskan Elk.
From a specimen in the possession of the Duke of Westminster.

The ELK or MOOSE (*Alces machlis*).

Elk are the largest members of the deer tribe, and distinguished by their ungainly form, long limbs, broad, produced, and flabby muzzle (all of which, except a small triangular patch below the nostrils, is covered with hair), the presence of a pendulous hairy organ (the so-called "bell") on the throat of the males, and the form and position of the antlers in that sex. The latter are set on the skull with their bases at right angles to the middle line of the face, and have neither brow nor bez tines. Usually the antlers expand after a short distance into a broad palmation or "shovel," carrying a number of snags on the outer border. In young elk each antler is divided in a fork-like manner into a small front and a larger hind portion. The main hoofs are long and pointed, and the lateral pair large; there is a gland and tuft of hair both on the hock and hind cannon-bone, the latter being situated high up. The tail is very short. From birth to old age elk are uniformly coloured; the general tint of the hair, which is long, coarse, and somewhat brittle, varying from yellowish grey to deep blackish brown above, with the legs lighter, and being usually darker in the American than in the European race. The height varies from 5 feet

9 inches at the shoulder in Scandinavian examples to as much as 6 feet 9 inches in the Alaskan race; the weight from 900 to 1600 lbs., that of the antlers being from about 60 lbs. to 100 lbs. The antlers of American elk are more expanded and carry more points than European specimens.

Elk inhabit the forests and marshy districts of Scandinavia, Eastern and Northern Russia, and the Altai; and in America (where they are invariably known as moose) at the present time are found in Alaska, Montana, Nova Scotia, and New Brunswick. In some localities Scandinavian elk not unfrequently show little or no palmarion of the antlers, and thus approximate to the East Siberian form. Elk appear to be nearly related to roebuck.

A.—AMERICAN and ALASKAN ELK

(*A. machlis americanus* and *A. m. gigas*).

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of palm.	Points.	Locality.	Owner.
74 $\frac{3}{4}$	44	12	45	13 $\frac{1}{2}$	15+13	Alaska . .	Capt. C. R. E. Radclyffe.
72	47 $\frac{1}{4}$	9 $\frac{1}{2}$	37 $\frac{1}{2}$	16 $\frac{1}{4}$	20+17	Do. . .	Duke of Westminster.
70	46	9	42 $\frac{1}{2}$	15	14+14	Do. . .	R. F. Glyn.
68	47 $\frac{1}{4}$	9	44 $\frac{1}{2}$	13	14+14	Do. . .	Prince Nicolas Ghika.
67 $\frac{3}{4}$	43	11	48	15	15+12	Do. . .	P. B. Vander Byl.
66	44	10	50	12	12+11	Do. . .	Capt. C. R. E. Radclyffe.
66	42	9 $\frac{3}{4}$	42	19 $\frac{1}{2}$	19+17	E. Yukon . .	F. C. Selous.
65 $\frac{1}{2}$	42	8	52	...	20+21	Alaska . .	Capt. C. R. E. Radclyffe.
65 $\frac{1}{4}$	...	...	...	...	13+10	New Brunswick	F. H. Cook.
64	44 $\frac{1}{4}$	7 $\frac{1}{2}$	39 $\frac{1}{2}$	14	14+20	Alaska . .	Prince Nicolas Ghika.
64	47	8 $\frac{3}{4}$	40	13	16+16	Do. . .	W. H. Welsh.
63 $\frac{1}{2}$	45 $\frac{1}{2}$	10 $\frac{1}{4}$	43	22	19+15	Do. . .	Hon. Walter Rothschild.
63 $\frac{1}{2}$	45	9	41	15	15+13	Do. . .	David Davies.
63	...	7 $\frac{1}{2}$	...	16 $\frac{1}{2}$	16+15	Peace River . .	J. G. Millais.
63 $\frac{1}{2}$	37	7 $\frac{3}{4}$	39 $\frac{1}{2}$	15 $\frac{3}{4}$	12+12	Yukon . .	F. C. Selous.
62 $\frac{3}{4}$	49 $\frac{1}{2}$	8 $\frac{3}{4}$	47	14 $\frac{1}{4}$	16+8	Alaska . .	Capt. the Hon. F. E. Guest.
62 $\frac{1}{2}$	46	7 $\frac{1}{2}$	46	14	14+13	Quebec . .	Col. J. Caswell.
62	46 $\frac{1}{2}$	9 $\frac{3}{4}$	35	21	18+16	Alaska . .	Lord Elphinstone.
59 $\frac{3}{4}$	38 $\frac{1}{2}$	7	40	13	9+10	Cassiar . .	P. N. Graham.
59 $\frac{1}{4}$	48	7 $\frac{3}{4}$	39 $\frac{1}{2}$	17	14+11	Alaska . .	W. F. Wailes-Fairbairn.
59	45	8	37	12 $\frac{1}{2}$	13+12	Do. . .	Sir H. Lennard, Bart.

RECORDS OF BIG GAME

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of palm.	Points.	Locality.	Owner.
58 $\frac{3}{4}$	36 $\frac{3}{4}$	6 $\frac{1}{2}$	36 $\frac{1}{2}$	9	9+9	Cassiar . .	Lord Osborne Beauclerk.
58 $\frac{1}{2}$	45	7 $\frac{1}{2}$	42	15 $\frac{1}{2}$	14+14	New Brunswick	E. C. Russell.
58 $\frac{1}{2}$	43 $\frac{3}{4}$	6 $\frac{3}{4}$	35	11 $\frac{1}{2}$	13+11	Do.	Lieut.-Col. W. H. Greenly.
57 $\frac{1}{2}$	38	8	21 $\frac{1}{2}$	14	18+15	Canada . .	C. H. Akroyd.
57 $\frac{1}{4}$	36	6 $\frac{3}{4}$	38 $\frac{1}{2}$	12	12+11	Cassiar . .	W. A. Conduitt.
57 $\frac{1}{4}$	41	8 $\frac{1}{4}$	35	11	11+11	Maine . .	T. D. M. Cardeza.
57 $\frac{1}{4}$	35	6 $\frac{1}{2}$	37	11 $\frac{1}{2}$	10+10	Yukon . .	A. D. Pass.
57 $\frac{3}{8}$	40 $\frac{1}{2}$	8	35	13 $\frac{1}{4}$	12+11	Maine . .	J. S. Braithwaite.
57	45	8 $\frac{1}{4}$	38	13 $\frac{1}{2}$	10+9	Alaska . .	Hon. J. Cunliffe-Lister.
57	41	8	43 $\frac{1}{2}$	12	11+14	Cassiar . .	Major J. F. Church.
56 $\frac{1}{2}$	39 $\frac{1}{2}$	7 $\frac{3}{4}$	37	13 $\frac{1}{2}$	14+11	?	Sir Peter Walker, Bart.
56 $\frac{1}{4}$	43	7 $\frac{1}{2}$	37 $\frac{1}{2}$	11	10+12	Cassiar . .	C. H. Young.
56 $\frac{1}{4}$	38 $\frac{1}{2}$	7 $\frac{1}{2}$	30 $\frac{3}{4}$	15	15+11	Manitoba . .	J. B. M. Thompson.
56	41	8	33	12 $\frac{1}{4}$	16+14	Cassiar . .	R. L. Fenwick.
56	42 $\frac{1}{2}$	8 $\frac{1}{4}$	39	13	14+12	?	Hon. M. Egerton.
55 $\frac{1}{4}$	42 $\frac{3}{4}$	8 $\frac{1}{2}$	36 $\frac{1}{2}$	7 $\frac{3}{4}$	9+7	New Brunswick	Major J. C. B. Statham.
55	39 $\frac{3}{4}$	7	36 $\frac{1}{2}$	11	10+8	Cassiar . .	Col. L. Parry.
55	43 $\frac{3}{4}$	8	40	17 $\frac{1}{4}$	16+14	Alaska . .	L. Cadbury.
54 $\frac{3}{4}$	36 $\frac{1}{2}$	6 $\frac{3}{4}$	41 $\frac{1}{4}$	9 $\frac{1}{2}$	12+11	Cassiar . .	J. S. Shepherd.
54 $\frac{1}{2}$	40 $\frac{1}{2}$	7 $\frac{1}{2}$	35	13	9+9	New Brunswick	A. C. Bell.
54 $\frac{1}{2}$	42	7 $\frac{1}{4}$	36	11 $\frac{3}{4}$	12+11	Alaska . .	Sir Robert Harvey, Bart.

OWNER'S MEASUREMENTS.

¹ 78 $\frac{1}{2}$	...	...	...	...	...	Yukon . .	Field Museum, Chicago.
² 77 $\frac{1}{2}$	...	...	...	...	17+17	Alaska . .	P. Niedieck.
75	41 $\frac{1}{2}$	10 $\frac{1}{4}$	...	21 $\frac{5}{8}$	23+19	Do. . .	American National Collection (Reed Collection).
75	...	...	...	...	...	Do. . .	Canadian Pacific Collection.
74 $\frac{1}{2}$	...	...	...	...	...	Do. . .	Chicago Academy of Science.
74	...	...	...	...	...	Do. . .	American Museum of Natural History.
73 $\frac{1}{4}$	...	...	...	23	24+14	Do. . .	C. F. Periolo.
71 $\frac{1}{2}$	49	8 $\frac{3}{16}$	...	16	20+20	Do. . .	Sir Edmund G. Loder, Bart.
71 $\frac{1}{4}$	48	9 $\frac{1}{2}$	...	17 $\frac{3}{4}$	18+16	Do. . .	American National Collection.
71 $\frac{1}{4}$	48	9 $\frac{1}{2}$	...	17 $\frac{3}{4}$	18+16	Do. . .	Do.
71	48	8	50	10 $\frac{1}{2}$	21	Do. . .	J. C. Phillips.
³ 69 $\frac{1}{4}$	...	...	...	26	...	Do. . .	H. C. Thompson.

¹ Skull and antlers weighed 91 lbs.² Weight of antlers and skull, 77 lbs.; no lower jaw.³ Height at shoulder, 6 ft. 8 in. ?; skull and antlers, 68 lbs.; estimated weight, 1700 lbs.

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of palm.	Points.	Locality.	Owner.
69	55	11 ?	37	21	21	Alaska . .	F. B. Tolhurst.
68 $\frac{3}{4}$	49	11	36	15 $\frac{1}{2}$	14 + 14	Do. . .	P. Niedieck.
68 $\frac{1}{4}$	41 $\frac{7}{8}$	...	...	16	17	New Brunswick	Dr. Munro.
67	45 $\frac{1}{2}$	8 $\frac{1}{4}$	45 $\frac{1}{2}$	12	18 + 11	Alaska . .	F. T. Colby.
67	...	...	...	...	23	Do. . .	J. H. Whitehouse.
66	38 $\frac{1}{2}$	9 $\frac{1}{2}$	44	14	28	New Brunswick	S. Decatur.
64 $\frac{1}{2}$	47 $\frac{1}{8}$	8 $\frac{3}{8}$	45 $\frac{1}{4}$	15 $\frac{1}{4}$	31	?	Grahamstown Museum.

B.—EUROPEAN ELK (*A. machlis typicus*).

The Ural Elk has been distinguished as *A. m. uralensis*.

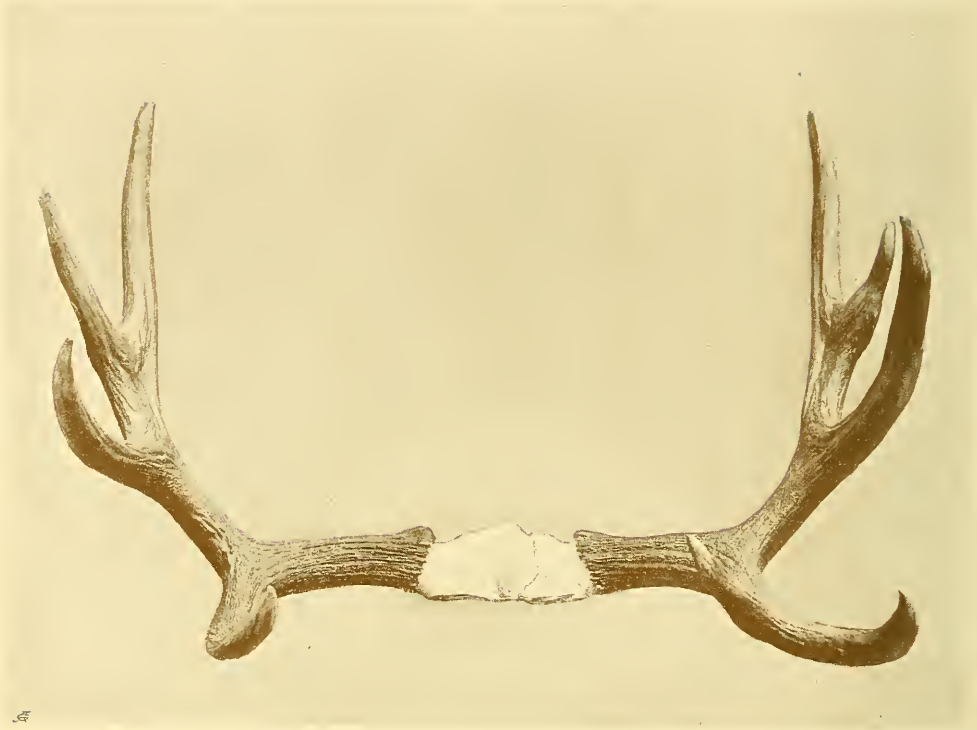
Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of palm.	Points.	Locality.	Owner.
48 $\frac{3}{4}$	30 $\frac{1}{2}$	8	44	5	4 + 4	Norway . .	Capt. W. W. Pitt-Taylor.
48	31	7	34 $\frac{3}{4}$	8 $\frac{3}{4}$	10 + 9	Do. . .	G. J. Van Heek.
48	32	8 $\frac{3}{4}$	37 $\frac{1}{2}$	11 $\frac{1}{2}$	10 + 9	Nr. St. Petersburg	Prince E. Demidoff.
47 $\frac{1}{2}$	30 $\frac{1}{4}$	6 $\frac{3}{4}$	32 $\frac{3}{4}$	9	10 + 10	Norway . .	D. W. Stobart.
¹ 46	30 $\frac{3}{4}$	6 $\frac{1}{2}$	43	10 $\frac{1}{2}$	15	Do. . .	Abel Chapman.
44 $\frac{1}{4}$	30 $\frac{1}{8}$	7 $\frac{1}{8}$	29 $\frac{1}{2}$	10	9 + 8	Do. . .	Sir Victor Brooke's Collection.
² 44	31 $\frac{3}{4}$	7 $\frac{1}{4}$	35	10 $\frac{1}{4}$	11 + 8	Stuttberg . .	O. Greaves.
43 $\frac{1}{2}$	29	7 $\frac{1}{2}$	...	10 $\frac{1}{2}$	24	Norway . .	Sir Peter Walker, Bart.
43 $\frac{3}{8}$	32	6	...	9 $\frac{1}{2}$	7 + 8	Russia . .	British Museum (Sir Edward Caley).
43 $\frac{1}{4}$	25 $\frac{1}{2}$	5 $\frac{1}{4}$	35	3	6 + 6	Norway . .	F. H. Nye.

OWNER'S MEASUREMENTS.

52	32	7	...	9	9 + 9	Norway . .	H. J. Elwes.
51 $\frac{3}{4}$	33	8 $\frac{1}{2}$	36 $\frac{1}{4}$	15 $\frac{1}{4}$	10 + 10	Do. . .	Capt. Gerard Ferrand.
49	...	...	35	6	8 + 8	Sweden . .	J. A. M ^c Mullen.
46	32 $\frac{1}{2}$	7 $\frac{1}{2}$	33	11 $\frac{1}{2}$	10 + 10	Do. . .	Capt. Gerard Ferrand.
45	31	7	28	...	17	Do. . .	S. Ratcliff.
43 $\frac{1}{4}$	28 $\frac{1}{2}$	6	33 $\frac{1}{4}$	11	12 + 10	Lithuania . .	Prince Radziwill.

¹ Estimated weight, 1260 lbs.

² Estimated weight, 973 lbs. clean.



Antlers of East Siberian Elk, from the Hon. Walter Rothschild's specimen.

C.—EAST SIBERIAN ELK (*A. machlis bedfordiæ*).

This race shows a marked tendency to absence of palmation in the antlers, which usually have four or five large tines on each side. Certain antlers from East Siberia are, however, distinctly palmated, but appear to differ somewhat in form from ordinary European specimens.

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Points.	Locality.	Owner.
42½	30½	7½	28	6 + 5	Siberia . .	Hon. Walter Rothschild.
39½	26½	8	37	4 + 3	Do. . .	British Museum.
37½	31¾	8	32	5 + 4	Do. . .	Hon. Walter Rothschild.



Head of White-tailed Deer. Shot by Mr. G. Graham-Clarke.

The WHITE-TAILED DEER (*Mazama* [*Odocoileus*] *virginiana*).

Exclusive of the wapiti, all the deer of America are distinguished from those of the Old World, except elk and roebuck, by the structure of the bones of the feet, as they also are by the form of the antlers, which are either regularly forked or spike-like. In the white-tailed deer the antlers are large and complex, with a long sub-basal snag, and the front prong of the main fork developed at the expense of the hind one, and carrying a number of snags on its upper surface. Tail long. A gland-tuft on the hock, and a small cylindrical white one with a black centre near the lower end of the hind cannon-bone. Colour of upper-parts chestnut in summer and bluish grey in winter, with the under surface of the tail and the buttocks pure white. Typically from Eastern North America, where the height at the shoulder reaches to 3 feet 1 inch, but represented by numerous races in other parts of the continent, which gradually decrease in size and complexity of antlers towards the south, where they extend to Peru, Bolivia, and Guiana. Weight of a specimen of the typical race shot by Mr. Selous, 12 st. 7 lbs.

Mazama is the oldest name for the American deer, and may be

employed if all are included in one genus. If they are split up, *Mazama* is the title for the brackets, while the white-tail and its allies may be called *Odocoileus*, a name originally based on a fossil tooth of the typical species.

A.—NORTHERN RACES (M. virginiana typica, etc.).

This typical race inhabits Virginia, its range including eastern N. America from Ontario and Maine to Florida, and westward to the Missouri. In Canada and New England it is replaced by the larger and greyer *M. v. borealis*; and there are several other races in the States.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
27 $\frac{3}{8}$	5 $\frac{3}{8}$	Single antler	...	16	N. America . . .	British Museum.
27 $\frac{1}{4}$	5 $\frac{1}{2}$	9 $\frac{1}{2}$	19	8+6	New Brunswick . . .	G. Graham-Clarke. (See illustration.)
27 $\frac{1}{8}$	4 $\frac{3}{4}$	14 $\frac{1}{4}$	19	6+6	N. America . . .	British Museum.
26 $\frac{3}{4}$	4 $\frac{3}{4}$	9 $\frac{1}{8}$	20	20	Do. . . .	Major James Grant.
26 $\frac{1}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	17 $\frac{1}{4}$	13+13	Ontario . . .	W. S. Browne.
26	4 $\frac{1}{2}$	5 $\frac{1}{2}$	18	8+7	Maine . . .	T. D. M. Cardeza.
26	4 $\frac{1}{8}$	9	16 $\frac{1}{2}$	6+6	?	C. A. Kitson.
25 $\frac{3}{4}$	4 $\frac{1}{2}$	9	19	11	Maine . . .	H. S. Wellcome.
25	5	12 $\frac{3}{8}$	...	6+10	?	British Museum.
25	5	6 $\frac{5}{8}$	19	6+5	E. Kootenay, B.C. . .	Col. A. Charlesworth.
24 $\frac{1}{2}$	4 $\frac{1}{2}$	12 $\frac{3}{8}$	18 $\frac{1}{2}$	6+6	?	J. Carr Saunders.
23 $\frac{3}{4}$	4 $\frac{3}{4}$	7 $\frac{1}{2}$	18 $\frac{1}{2}$	4+4	New Brunswick . . .	W. H. Lindsay.
23 $\frac{1}{4}$	4 $\frac{1}{4}$	6 $\frac{5}{8}$	17	6+5	Do. . . .	Capt. E. C. Hamilton.
23	5	5	16	6+6	British Columbia . . .	J. Turner-Turner.
23	4 $\frac{1}{2}$	14	20 $\frac{1}{2}$	7+5	Canada . . .	J. A. Douglas.

OWNER'S MEASUREMENTS.

32 $\frac{1}{4}$	6	8	20 $\frac{1}{4}$	17+15	Michigan . . .	J. C. Phillips.
29	6	...	...	18+24	Maine . . .	American National Collection.
27 $\frac{1}{4}$	...	18 $\frac{1}{8}$	...	19+19	Missouri . . .	Berlin Museum.
25	5 $\frac{5}{8}$	6 $\frac{3}{4}$	23 $\frac{1}{8}$	10+9	Michigan . . .	Wilson Potter.
24	6 $\frac{1}{2}$	12	16	7+6	Alberta . . .	N. J. Dinnen.
24	4 $\frac{5}{8}$	¹ 19 $\frac{1}{2}$	...	18	Nebraska . . .	G. B. Grinnell.
23 $\frac{3}{4}$	6	12	16 $\frac{3}{4}$	5+4	Wyoming . . .	Col. J. J. Harrison.

¹ Spread.



Head of Mexican White-tailed Deer in the Collection of Major W. Anstruther Gray.

B.—MEXICAN WHITE-TAIL (*M. virginiana lichtensteini*).

This is one of the smaller races of the species, the height at the shoulder ranging from about 33 to 36 inches, and the antlers being usually smaller and simpler than in the northern race.

Distribution.—Mexico. In Northern Mexico this race is represented by the Texan *M. v. texana*, and in the extreme south by *M. v. tolteca*, which does not turn red. The Central American specimens entered below belong to other races.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
13 $\frac{3}{4}$	3 $\frac{3}{8}$	6 $\frac{7}{8}$	11 $\frac{3}{4}$	3+3	Sonora . . .	British Museum.
13 $\frac{1}{4}$	3 $\frac{5}{8}$	7	11 $\frac{1}{8}$	4+4	Venezuela . . .	Hon. Walter Rothschild.
11 $\frac{3}{4}$	3	4 $\frac{1}{2}$	9 $\frac{1}{4}$	3+3	Costa Rica . . .	Sir Edmund G. Loder, Bart.
8 $\frac{1}{4}$	2 $\frac{5}{8}$	4 $\frac{3}{4}$	6 $\frac{5}{8}$	3+4	Mexico . . .	Sir Victor Brooke's Collection.

OWNER'S MEASUREMENTS.

18 $\frac{1}{2}$	...	9 $\frac{1}{2}$	...	5+4	Sonora . . .	J. C. Phillips.
16 $\frac{1}{2}$	4 $\frac{1}{4}$	...	14 $\frac{1}{2}$	4+4	Rio-Frio Mts., Mexico	Pio Noriega.
14	3 $\frac{1}{2}$	9	...	...	Sonora . . .	Major W. Anstruther Gray.



Head of Mule-Deer.

The MULE-DEER (*Mazama* [*Odocoileus*] *hemionus*).

Antlers with a much shorter sub-basal snag than in the white-tailed deer, beyond which the beam is directed outwards for a short distance, and then curves upwards to form a regular fork, both prongs of which are usually equal, and generally subdivide so as to form five points on each side. Ears large and heavy; tail short and small, naked below basally, with a black tip. Gland-tufts on hock and cannon-bone coloured like the leg; the latter of these elongated and situated on the upper half of the cannon-bone. General colour of upper-parts yellowish tawny in summer, brownish or rufous speckled grey in winter, with a brown horse-shoe mark on the forehead. Height at the shoulder, 3 feet 3 or 4 inches in the typical form. Weight (exceptional), 17 stone 2 lbs. (F. C. Selous).

Distribution.—The greater part of North America westward of the Missouri, extending from British Columbia to California. There are several local races, among which the South Californian *M. hemionus peninsulae* is one of the smallest.



Head of Mule-Deer from Colorado, in the possession of Mr. H. A. James.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
34	5	18	21 $\frac{3}{4}$	19+18	Wyoming	J. G. Millais.
30 $\frac{5}{8}$	5 $\frac{3}{4}$	18 $\frac{3}{4}$	24 $\frac{1}{2}$	5+5	?	W. Moat.
30	5 $\frac{3}{4}$	...	41	17	White River, Colorado	H. A. James.
28 $\frac{5}{8}$	4 $\frac{1}{2}$	13 $\frac{1}{4}$	17 $\frac{3}{4}$	5+5	Wyoming	Ford G. Barclay.
28 $\frac{1}{2}$	5	18 $\frac{3}{4}$	21	6+4	British Columbia	J. McL. M'Iver Campbell.
28 $\frac{1}{2}$	...	...	24 $\frac{1}{2}$	...	White River	Major Maitland Kirwan.
28	5	20	23 $\frac{1}{4}$	7+6	Wyoming	J. Hall.
28	4 $\frac{1}{4}$	22 $\frac{1}{2}$	24 $\frac{3}{4}$	6+6	Do.	H. A. C. Darley.
27 $\frac{3}{4}$	6	15 $\frac{1}{4}$	19 $\frac{1}{4}$	9+6	British Columbia	G. Wrey.
27 $\frac{1}{2}$	5 $\frac{3}{4}$	14 $\frac{3}{8}$	24 $\frac{1}{2}$	6+5	Do.	Hon. Walter Rothschild.
27 $\frac{1}{4}$	5	14 $\frac{1}{2}$	24 $\frac{3}{4}$	6+5	Do.	C. W. Janson.
27 $\frac{1}{4}$	4 $\frac{1}{4}$	15 $\frac{1}{4}$	26 $\frac{1}{4}$	5+5	North America	T. L. Fisher.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
27	5 $\frac{1}{4}$	19 $\frac{1}{2}$	21 $\frac{5}{8}$	6+5	North America	Sir Edmund G. Loder, Bart.
27	5 $\frac{1}{4}$	19 $\frac{1}{2}$	22 $\frac{3}{4}$	5+5	British Columbia	D. H. Crake.
26 $\frac{3}{4}$	4 $\frac{3}{4}$	19 $\frac{5}{8}$	20 $\frac{1}{8}$	5+5	Wyoming	Ernest Farquhar.
26 $\frac{1}{2}$	5	15 $\frac{1}{2}$	18 $\frac{1}{2}$	6+5	British Columbia	T. P. Kempson.
26 $\frac{1}{2}$	5 $\frac{3}{4}$	...	17 $\frac{1}{2}$	12	Wyoming	Lord Rendlesham.
26 $\frac{1}{4}$	6 $\frac{1}{4}$	13 $\frac{1}{4}$	18	5+4	British Columbia	A. H. Goodall.
26	5	15 $\frac{1}{4}$	19 $\frac{1}{2}$	4+4	Do.	J. V. Colby.
25 $\frac{1}{2}$	4 $\frac{1}{2}$	12 $\frac{3}{4}$	16 $\frac{3}{4}$	5+5	Sierra Nevada	P. Grace.
25 $\frac{1}{2}$	5 $\frac{1}{2}$	...	21 $\frac{1}{2}$	8	British Columbia	Sir Peter Walker, Bart.
25 $\frac{1}{2}$	4 $\frac{1}{4}$	27	29	5+5	Wyoming	Lieut.-Col. G. J. Fitzgerald.
25 $\frac{3}{8}$	4 $\frac{1}{8}$	19	20	5+5	Do.	A. H. Pollen.
25 $\frac{1}{4}$	5	7 $\frac{1}{2}$	19 $\frac{1}{4}$	8+6	?	W. A. Warren.

OWNER'S MEASUREMENTS.

32 $\frac{1}{8}$	6	26 $\frac{3}{4}$	44 $\frac{1}{8}$	25	B. Columbia	H. Whiting.
32	6	26	...	21+19	Wyoming	C. R. F. Lutwidge.
30 $\frac{1}{4}$	6 $\frac{1}{2}$	18 $\frac{1}{4}$	30	12+11	Alberta	N. J. Dinnen.
29 $\frac{1}{2}$	5 $\frac{3}{4}$	25	25 $\frac{1}{4}$	8+5	Montana	J. C. Phillips.
29	6 $\frac{1}{2}$	29 $\frac{1}{2}$	...	8+6	Do.	E. S. Cameron.

The **BLACK-TAILED DEER** (*Mazama* [*Odocoileus*] *columbiana*).

Nearly allied to the mule-deer, but of inferior size, with relatively smaller ears and finer hair ; but specially characterised by the shorter gland and tuft on the hind cannon-bone, and the larger and longer tail, of which the upper surface is black and the lower mostly white.

Distribution.—Western North America, from Alaska, British Columbia, and Vancouver to California. The Alaskan race (*M. c. sitkensis*) has the upper surface of the base of the tail coloured like the back ; in the Californian *M. c. scaphiotus* the general colour is paler and the ears are larger.

Length on out-side curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
27	5½	13	20¾	5+5	?	R. H. Venables Kyrke.
19¼	4¼	14	16½	3+3	S. California . .	Sir Victor Brooke's Collection.

OWNER'S MEASUREMENTS.

22	4¼	...	¹ 22	...	Vancouver . .	Clive Phillipps-Wolley.
21	5	15¼	15	5+5	N.E. California .	H. C. Nelson.
20¼	5	17	17	5+7	Do. . .	A. E. Leatham.
19½	5¾	...	21	5+5	?	Sir W. Gordon Cumming, Bart.
16	3¾	8½	14¼	5+3	British Columbia .	W. T. Hornaday.

¹ Outside.



Frontlet and Antlers of Marsh-Deer.

The MARSH-DEER (*Mazama* [*Blastoceros*] *dichotoma*).

Antlers without a sub-basal snag, forking regularly, with both prongs again dividing, and the upper one usually more complex than the lower. Ears large, with white hair internally. Hair long and coarse, reversed on the withers for a short distance. General colour of upper-parts bright rufous chestnut in summer, browner in winter; legs black from the knees and hocks downward. No gland on hind cannon-bone. Size, approximately that of a red deer. Although ten is the usual number of points, sports are common.

Distribution.—From Brazil to the inner wooded districts of Argentina.

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
25	5½	18¾	21¼	5+4	Paraguay . .	Hon. Walter Rothschild.
24½	5	16	18	5+5	Do. . .	Admiral Sir William Kennedy.
24½	6½	21	20½	6+5	N. Argentina . .	J. Todd.
23¾	5½	15¾	16¼	5+4	Paraguay . .	British Museum.
23¼	6	...	19½	12	Do. . .	G. R. Stuart.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
22 $\frac{3}{4}$	5 $\frac{5}{8}$	17 $\frac{1}{2}$	18 $\frac{3}{4}$	7+6	Paraguay . . .	Hon. Walter Rothschild.
22 $\frac{5}{8}$	6 $\frac{1}{4}$	20	20 $\frac{1}{2}$	5+5	Brazil . . .	Sir Victor Brooke's Collection.
22 $\frac{3}{8}$	5 $\frac{1}{2}$	25	...	28	Argentina . . .	A. Vans-Agnew.
22 $\frac{1}{4}$	4 $\frac{1}{2}$	18 $\frac{1}{2}$	18 $\frac{1}{2}$	4+3	Do. . . .	G. L. Harrison.
21 $\frac{1}{2}$	5 $\frac{1}{2}$	22	16 $\frac{1}{2}$	6+6	Paraguay . . .	S. Pulley.
21 $\frac{1}{2}$	6	13 $\frac{1}{2}$	...	4+4	Do. . . .	H.R.H. the Duc de Montpensier.
21 $\frac{1}{2}$	5	12 $\frac{3}{4}$	16	5+5	Do. . . .	Admiral Sir William Kennedy.

OWNER'S MEASUREMENTS.

25 $\frac{1}{8}$	5	22 $\frac{1}{4}$	...	6+7	Paraguay . . .	Dr. Albert von Stephani.
22 $\frac{1}{2}$	7 $\frac{1}{2}$	...	15 $\frac{1}{4}$	6+6	Argentina . . .	Kenyon Slaney.
22 $\frac{1}{4}$	6 $\frac{7}{8}$	26	25	5+5	Do. . . .	Sir Edward G. Loder, Bart.



Skull and Antlers of Chilian Guemal, shot in Patagonia
by Mr. H. Hesketh Prichard.

The PAMPAS DEER (*Mazama* [*Blastoceros*] *bezoartica*).

A small deer nearly allied to the last, but with the front prong of the antlers simple, and the hind one divided. A whorl in the hair on the middle of the back and another at the base of the neck, so that the hair of the withers is directed forwards for a considerable distance. Colour of upper-parts light reddish brown, under-parts and lower surface of tail white; upper surface of latter black. Height at shoulder, 30 inches.

Distribution.—Brazil to Northern Patagonia, in open districts.

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
15 $\frac{3}{8}$	3 $\frac{1}{2}$	5	6+7	Argentina	Col. Heber Percy.
14 $\frac{2}{8}$	2 $\frac{5}{8}$	13 $\frac{1}{4}$	3+3	Do.	British Museum.
14 $\frac{1}{2}$	3	10 $\frac{3}{4}$	3+3	Do.	E. M. Crosfield.
14 $\frac{1}{4}$	3	11	3+3	?	Sir Edmund G. Loder, Bart.
14	4 $\frac{1}{4}$	11 $\frac{1}{4}$	3+3	Paraguay	Admiral Sir William Kennedy.
13 $\frac{1}{2}$	4 $\frac{3}{4}$	8	3+3	Do.	R. A. Cooper.
13	2 $\frac{1}{2}$	12 $\frac{3}{8}$	3+3	?	W. Livingstone-Learmonth.

The PERUVIAN GUEMAL (*Mazama* [*Hippocamelus*] *antisiensis*).

Together with the closely allied Chilian guemal, this species constitutes a group of deer characterised by the antlers forming a single fork. There is no gland-tuft on the hind cannon-bone, the short tail is rather bushy, and the hair coarse and brittle.

Distribution.—The high Andes, from Ecuador to Northern Chili.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{3}{4}$	4 $\frac{3}{4}$	6	Bolivia, 13,000 ft.	A. Y. Hardy.
10	3 $\frac{5}{8}$	8	Ecuador	Hon. Walter Rothschild.
9 $\frac{1}{2}$	7 $\frac{5}{8}$	4 $\frac{5}{8}$	Tinta, South Peru	British Museum (H. Whitely).
8 $\frac{1}{2}$	3 $\frac{3}{4}$	5	N. Argentina	W. Buchanan Smith.

The CHILIAN GUEMAL (*Mazama* [*Hippocamelus*] *bisulca*).

Distinguished from the last by its superior size (shoulder-height $39\frac{1}{2}$ inches) and more uniform colouring, as well as by several details connected with the latter.

Distribution.—From the Chilian Andes to the plains of Patagonia.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$11\frac{3}{4}$	$3\frac{7}{8}$	$9\frac{1}{2}$	Patagonia	H. Hesketh Prichard.
$10\frac{1}{2}$	$3\frac{5}{8}$	$7\frac{1}{2}$	?	British Museum.
$-7\frac{1}{4}$	3	4	Chili	J. C. Phillips.
$-4\frac{5}{8}$	$1\frac{7}{8}$	$4\frac{1}{2}$	Do.	American National Collection.

- Owner's measurements.

The WOOD-BROCKET (*Mazama nemorivaga*).

The brockets are some of the smallest deer included in the genus *Mazama*, of which they are the typical representatives. They are recognisable by their simple spike-like antlers, the tufted crown of the head, and, in many, although not all, cases the radiation of the hair of the face from two whorls, which causes that on the nose to be directed downwards. The most widely distributed species is the red brocket (*M. americana*,¹ or *M. rufa*), other species being the nearly allied *M. setta* of Colombia and *M. sheila* of Venezuela, *M. tema* of Guatemala, and the small *M. simplicomis*. The present species is distinguished by its small size (height at shoulder about 19 inches), its pale pepper-and-salt brownish or grey colour, the streak on the forehead, and the absence of a gland and tuft on the hock.

Distribution.—Guiana, Colombia, Bolivia, Brazil, and Trinidad.

Length on front of horn.	Girth.	Tip to Tip.	Locality.	Owner.
$-4\frac{5}{8}$	$3\frac{3}{4}$	4	Trinidad	Dr. Percy Rendall.
$4\frac{3}{8}$	$1\frac{3}{4}$	2	Do.	Sir Edmund G. Loder, Bart.
-3	$2\frac{1}{4}$	2	Do.	Dr. Albert von Stephani.

- Owner's measurements.

¹ In previous editions this name was applied to the white-tailed deer, a usage which has been recently shown to be inadmissible.



Head of Musk-Deer.

The **MUSK-DEER**, or **KASTURA** (*Moschus moschiferus*).

She-lu, Chinese. *Kastura*, Kashmiri.

From all living deer except the Chinese water-deer this species is distinguished by the absence of antlers, the function of which is discharged in the male by long upper tusks. The tail is rudimentary and the fur coarse and brittle, while the lateral hoofs are very large. The males have a glandular pouch which secretes the musk from which the species takes its name. Height at shoulder about 20 inches, at rump 22 inches.

Distribution.—The forest-districts of the Himalaya as far west as Gilgit, at elevations of 8000 feet or more in summer, to Tibet, Siberia, Western China, Amurland, and Corea.

Length of Tusk on outside curve. exposed from gum	Locality.	Owner.
4	Kashmir	Lieut.-Col. H. C. Tytler.
3 $\frac{3}{8}$	Gurhwal	Capt. G. W. Burton.
3	Do.	British Museum (Hume Collection).
3	Amurland	British Museum.
2 $\frac{1}{4}$	Kashmir	Sir Edmund G. Loder, Bart.

OWNER'S MEASUREMENTS.

4	Ta Chin lu	M. Mitchell.
3 $\frac{3}{8}$	Chitral	Capt. J. T. H. Lane.
3 $\frac{1}{4}$	Do.	Dr. Albert von Stephani.
3	Upper Kumaon	Capt. K. Channer.



Skull of Transvaal Giraffe. Presented to the British Museum
by the late Mr. Rowland Ward.

The GIRAFFE (*Giraffa camelopardalis*).

Ihuhla, Swazi.

Indhlulamiti, Zulu.

Tuthla, Basuto.

Luomba ningo, Chilala.

Intutwa, Chila.

Ngabi, Masawara.

Giri, or *Halgiri*, Somali.

Kameel, Boer.

Nyama marakiti, Asenga.

Vakumin deji, Hausa.

Zaraff, Sudani.

The long limbs and neck, the peculiarly formed head, and the blotched or netted hide, render giraffes distinguishable at a glance from all other living ruminants; with none of which, except the okapi, they have any very close affinity, although their nearest relatives are the deer. So great is their distinctness that, with the okapi, they constitute a family by themselves—the *Giraffidæ*. One of the most marked peculiarities of the giraffes is to be found in the horns, of which the largest pair rise from the head between the ears, and are covered during life with skin. They are never shed; and in the adult are immovably united to the bones of the skull, although separate in young animals. In addition to these, there is a more or less distinct third horn, or boss, situated on the forehead between the eyes, as well as a rudimentary pair at the back of the head, or occiput. Giraffes have a long, extensile tongue, hairy lips, and broad, low-crowned cheek-

teeth. There are no tusks in the upper jaw ; and in the outermost pair of lower front teeth the crown, as in the okapi, is double, or bilobed. Lateral hoofs are wanting.

Among the local races of the species, the Nubian giraffe, *G. c. typicus*, is a pale-coloured animal with a large front horn and white legs ; and from this the Kordofan *G. c. antiquorum* differs by the smaller and more numerous spots on the upper part of the legs. The Baringo giraffe, *G. c. rothschildi*, is characterised by the black spots of the old bulls and the jagged markings of the cows ; and the Taposa *G. c. cottoni* is allied. The Nigerian *G. c. peralta*, the palest of all, is close to the Nubian. The Congo *G. c. congoensis* combines the presence of a third horn with fully spotted legs ; this being also the case with the Kilimanjaro *G. c. tippelskirchi*, in which the markings have an irregular star-like form and the legs are more or less spotted. The races with fully spotted legs and a more or less rudimentary front horn include the Angolan *G. c. angolensis*, the North Transvaal *G. c. wardi*, and the South African *G. c. capensis*.

The SOMALI GIRAFFE (*Giraffa reticulata*)

The Somali giraffe (for which the name netted giraffe would be appropriate, were it not that it has a double signification) may be described as a dull, liver-coloured animal with a coarse network of narrow white lines dividing the ground-colour into a number of large, irregularly quadrangular and sharply defined patches. The head and upper part of the neck are, however, spotted, while the ears and the legs from the knees and hocks downwards are white.

Apparently this type of colouring is specially adapted for rendering the animal inconspicuous when in covert.

A.—NIGERIAN RACE (*G. c. peralta*).

Estimated maximum height.	At shoulder.	Locality.	Owner.
ft. ins.	ft. ins.		
♂-16 4	11 0	N. Nigeria	The late Capt. G. B. Gosling.

B.—EASTERN RACES (*G. c. rothschildi*, etc.)

Estimated maximum height.	At shoulder.	Locality.	Owner.
ft. ins.	ft. ins.		
19 3	...	British East Africa	Col. J. Caswell.
19 0	12 0	Do.	T. P. A. Holford.
♂-18 7	...	South-east Africa	F. Vaughan Kirby.

Estimated maximum height.	At shoulder.		Locality.	Owner.
	ft.	ins.		
♂-18	6	...	British East Africa	J. Hall.
♂-17	6	...	Do.	A. Vonwiller.
♂-17	3	10 11	Do.	British Museum (Major P. H. G. Powell-Cotton).
♂-17	3	...	Do.	Lady Hindlip.
♂-16	0	...	East Central Africa	The late A. H. Neumann.
♀-15	6	Average height	South-east Africa	F. Vaughan Kirby.
to	16			
♀-13	10	8 9½	British East Africa	British Museum (Major P. H. G. Powell-Cotton).

C.—SOUTHERN RACES (G. c. capensis, etc.).

Estimated maximum height.	At shoulder.		Locality.	Owner.
	ft.	ins.		
♂-18	4	...	Angola	Hon. Walter Rothschild.
♂-18	0	12 0	South Africa	The late Sir W. Cornwallis Harris.
♂-17	0	...	W. Matabililand	F. C. Selous.
♀-16	10	...	North Kalahari	H. A. Bryden.

- Owner's measurements.



Head of Prongbuck.

The **PRONGBUCK** or **PRONG-HORN** (*Antilocapra americana*).

Although commonly termed an antelope, this ruminant differs from all the members of the *Bovidae* by the forking of the horns. These are annually shed from their bony sheaths and replaced by a new pair, which commence to grow up beneath the old ones before they are cast off. In consequence of this, the species is generally regarded as representing a family (*Antilocapridæ*) by itself. Horns absent or rudimentary in the female. Ears long and pointed, tail short, and neck maned. General colour chestnut, with a white rump-patch, and white bars on the throat. Height at shoulder, 36 inches; weight, 70 to 80 lbs. clean.

Distribution.—Western North America, from British Columbia to Mexico.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
15 $\frac{3}{4}$	6 $\frac{1}{4}$	5 $\frac{7}{8}$	...	Wyoming	St. George Littledale.
15 $\frac{3}{4}$	6 $\frac{1}{4}$	8 $\frac{3}{8}$	...	Do.	P. B. Vander Byl.
15 $\frac{1}{2}$	4 $\frac{1}{2}$	9 $\frac{1}{2}$	...	Do.	W. R. Cookson.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
15 $\frac{1}{8}$	6 $\frac{1}{4}$	7 $\frac{5}{8}$	...	?	Col. Ralph Vivian.
15	5 $\frac{1}{2}$	1	...	Wyoming	Sutton Timmis.
15	6	...	...	Do.	H.R.H. the Duc d'Orléans.
15	5 $\frac{5}{8}$	5 $\frac{3}{4}$	10 $\frac{1}{4}$	Do.	St. George Littledale.
15	5 $\frac{3}{4}$	7 $\frac{3}{4}$	...	Do.	Isaac Bell.
14 $\frac{1}{2}$	5 $\frac{3}{4}$	12	...	?	C. F. Bengough.
14 $\frac{1}{2}$	...	...	12 $\frac{1}{2}$	Wyoming	T. W. H. Clarke.
14 $\frac{1}{2}$	5 $\frac{3}{4}$	11 $\frac{3}{4}$	...	Do.	British Museum.
14 $\frac{1}{2}$	6	...	9 $\frac{1}{2}$	Laramie Plains, Wyoming	Ford G. Barclay.
14 $\frac{1}{2}$	6 $\frac{5}{8}$	5 $\frac{1}{4}$	...	Wyoming	The late Lieut.-Col. Hon. W. Coke.
14 $\frac{1}{2}$	6	6	...	Alberta	F. I. Mitchell.
14 $\frac{1}{4}$	6	2 $\frac{5}{8}$	...	?	Sir Victor Brooke's Collection.
14 $\frac{1}{4}$	7	4 $\frac{1}{4}$	...	?	J. McL. M'Iver Campbell.
14 $\frac{1}{4}$	5 $\frac{1}{4}$	5 $\frac{3}{4}$	...	Wyoming	Major A. J. Carstairs.
14 $\frac{1}{4}$	5 $\frac{3}{4}$	5 $\frac{3}{4}$	...	Do.	Earl of Dartmouth.

OWNER'S MEASUREMENTS.

20 $\frac{1}{10}$	7 $\frac{1}{8}$	5 $\frac{1}{2}$	...	?	Wilson Potter.
17 $\frac{1}{4}$	6 $\frac{1}{2}$	...	9	N.W. Canada	J. Whitaker.
17	...	...	20 outside	?	The late Otho Shaw.
17	...	17 $\frac{1}{2}$	...	Wyoming	J. G. Millais.
16 $\frac{1}{8}$	6 $\frac{1}{4}$	...	17 $\frac{1}{2}$	L. California	J. C. Phillips.
16	6 $\frac{1}{2}$	..	...	N. Dakota	Theodore Roosevelt.
16	5 $\frac{1}{2}$	12	...	Wyoming	J. M. Geddes.
15 $\frac{5}{8}$	6	2 $\frac{7}{8}$	...	Teton Mountains	Sir H. Lennard.
15 $\frac{1}{2}$	5 $\frac{3}{4}$	2 $\frac{3}{4}$	...	N.W. Territories	N. J. Dinnen.
15 $\frac{1}{4}$	5 $\frac{3}{4}$	6 $\frac{1}{4}$	...	Wyoming	Count E. Hoyos.



Horns of Bubal Hartebeest. From Sir Abe Bailey's specimen.

The BUBAL HARTEBEEST (*Bubalis boselaphus*).

This species commences the family of hollow-horned ruminants or *Bovidae*, in which the horns are in the form of unbranched hollow sheaths supported on bony cores and carried permanently. The hartebeests are large antelopes with naked muzzles, abnormally long faces, doubly-curved horns, small apertures to the face-glands, large valvular nostrils (of which the lower rims are covered with stiff hairs), long, tufted tails, and large lateral hoofs. Both sexes are horned. The females have two teats.

Typical hartebeests have a whorl of hair on the forehead, and the hair on the middle line of the face directed downwards below this till a short distance above the nose, where there is another whorl; face-glands large. The present species is the smallest of the group, standing only 43 or 44 inches at the shoulder. It has a short pedicle supporting the horns, which are in the form of the letter U, and the colour is uniform tawny, with the tail-tuft black.

Distribution.—North-west Africa (interior of Morocco, Algeria, and Tunisia).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15½	8½	7¾	North Africa . . .	British Museum.
14¾	10	9	Senegal . . .	Hon. Walter Rothschild.
13¾	9¾	9¼	Tunisia . . .	Sir Abe Bailey.
13½	8½	7¾	North Africa . . .	British Museum.



Head of Western Hartebeest.

WESTERN HARTEBEEST (*Bubalis major*).

Kanki, Hausa.

Apparently related to the preceding species, but larger, with more massive horns, which are more bent near the middle, and have long, smooth tips. Body uniform rufous fawn, varying from deep red almost to fawn-grey, face deep brown, the fore-legs streaked with dark brown or blackish from the knees downwards, and the tail-tuft black. Height at shoulder, from about 50 to 54 inches.

Distribution.—Gambia, Nigeria, and interior of the Cameruns, Togoland, etc.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
26 $\frac{3}{4}$	13 $\frac{1}{2}$	6 $\frac{1}{4}$	Nigeria . . .	Capt. E. E. Williams.
26 $\frac{1}{2}$	13 $\frac{3}{4}$	11	Do. . . .	Sergeant Lefanu.
26	12 $\frac{1}{2}$	14 $\frac{3}{4}$	Do. . . .	Lady Constance Stewart-Richardson.
25 $\frac{1}{2}$	11 $\frac{3}{4}$	12 $\frac{1}{2}$	Do. . . .	Capt. P. A. Clive.
25 $\frac{1}{2}$	12 $\frac{1}{2}$	11 $\frac{3}{4}$	Gold Coast . . .	Dr. J. H. Collier.
25 $\frac{1}{2}$	12 $\frac{3}{4}$	10	Nigeria . . .	Capt. C. C. West.
25 $\frac{1}{2}$	12 $\frac{1}{2}$	11 $\frac{1}{2}$	Do. . . .	R. J. Wolseley.
25 $\frac{3}{4}$	12 $\frac{3}{4}$	11 $\frac{1}{4}$	Yauri, Hausa States	Major J. W. Carroll.

- Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
25 $\frac{1}{4}$	12 $\frac{3}{4}$	13 $\frac{3}{8}$	Near Borgu . . .	Capt. N. C. Welch.
25	11 $\frac{3}{4}$	10 $\frac{1}{4}$	Benue Valley . . .	Sir Abe Bailey.
25	12 $\frac{1}{2}$	10 $\frac{1}{4}$	N. Nigeria . . .	H. J. Vicat.
25	11 $\frac{3}{4}$	8 $\frac{1}{4}$	Gold Coast . . .	Capt. Montray Read.
25	11 $\frac{1}{4}$	16 $\frac{1}{2}$	Nigeria . . .	Capt. G. B. Scott.
24 $\frac{3}{4}$	13 $\frac{1}{4}$	14	Do. . . .	Capt. H. T. G. Moore.
24 $\frac{1}{2}$	11 $\frac{1}{4}$	12 $\frac{3}{4}$	Do. . . .	C. Francis.
24 $\frac{1}{2}$	11 $\frac{3}{4}$	8 $\frac{3}{4}$	Do. . . .	Capt. S. B. B. Dyer.
24 $\frac{1}{2}$	12 $\frac{1}{4}$	18	Senegambia . . .	G. Fenwick-Owen.
-24	11 $\frac{1}{2}$	12	Togoland . . .	Berlin Museum.
24	12	5 $\frac{3}{4}$	Nigeria . . .	The late Dr. W. H. Langley.
24	11 $\frac{1}{2}$	8 $\frac{1}{4}$	Do. . . .	K. V. Elphinstone.
24	12	11	Do. . . .	Capt. A. Noel Woods.
24	12 $\frac{1}{4}$	6	Do. . . .	Capt. S. C. Peck.
24	12 $\frac{1}{4}$	8 $\frac{1}{2}$	Do. . . .	G. F. Lobb.
24	12 $\frac{1}{2}$	11 $\frac{1}{2}$	Do. . . .	Capt. W. T. Wilkinson.
24	11	10 $\frac{3}{4}$	Do. . . .	Capt. W. D. Wright.
24	12 $\frac{1}{2}$	11 $\frac{7}{8}$	Do. . . .	C. S. Griffiths.
23 $\frac{3}{4}$	12 $\frac{1}{2}$	6 $\frac{3}{4}$	Do. . . .	Capt. H. N. Kempthorne.
23 $\frac{3}{4}$	12 $\frac{1}{8}$	14 $\frac{3}{8}$	S. Nigeria . . .	Capt. R. M. Heron.
23 $\frac{3}{4}$	12 $\frac{1}{2}$	11	Nigeria . . .	Capt. G. C. Kelly.
23 $\frac{3}{4}$	12	7 $\frac{1}{4}$	Gambia . . .	G. Blaine.
23 $\frac{5}{8}$	12	5 $\frac{1}{4}$	N. Nigeria . . .	W. A. Judd.
23 $\frac{1}{2}$	12	9	Nigeria . . .	Major-Gen. P. S. Wilkinson.
23 $\frac{1}{2}$	12	11	Do. . . .	F. R. O'Neill.
23 $\frac{1}{2}$	12	4 $\frac{1}{4}$	Ashanti . . .	C. Beddington.
23 $\frac{1}{2}$	12	13 $\frac{1}{2}$	N. of Benue River .	W. H. Brown.
23 $\frac{1}{2}$	11 $\frac{1}{2}$	4 $\frac{3}{4}$	N. Nigeria . . .	Capt. D. H. Thorburn.
23 $\frac{1}{2}$	12	10	Do. . . .	Major R. McDouall.
23 $\frac{1}{2}$	10 $\frac{1}{2}$	14 $\frac{1}{4}$	Do. . . .	R. M. Borthwick.
♀ 21 $\frac{3}{8}$	10	8	Do. . . .	Major J. G. Browne.
21 $\frac{1}{8}$	10 $\frac{7}{8}$	11 $\frac{1}{8}$	Portuguese Guinea .	Major P. H. G. Powell-Cotton.

- Owner's measurements.



Head of Tora Hartebeest.

TORA HARTEBEEST (*Bubalis tora*).*Worobo*, Abyssinian.*Tora*, Sudani.

Horn-pedicle of medium length, the horns themselves in the form of an inverted bracket (—).

A.—TYPICAL RACE (*Bubalis tora typica*).

Height at shoulder, from 50 to 54 inches. Colour uniformly pale tawny fulvous, with the exception of the tail-tuft and chin, which are black. Although of the same uniform colour, this species is easily distinguished from *B. boselaphus* by its superior size and differently shaped horns. Weight, from 300 to 400 lbs.

Distribution.—Abyssinia and south and middle portion of Blue Nile.

The Blue Nile *B. t. rahatensis* has the horn-tips markedly inclined inwards.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22½	9	22¾	Sudan	Carl Hagenbeck.
22	9¾	10	Do.	Major Lord J. S. Cavendish.
21½	10	10¾	Do.	C. Bower Ismay.
21	9	18¾	Dinder Valley . .	C. E. Russell.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{7}{8}$	9 $\frac{1}{4}$	14 $\frac{1}{2}$	Sudan	Hon. Walter Rothschild.
20 $\frac{7}{8}$	9 $\frac{1}{2}$	13 $\frac{1}{4}$	Do.	Sir Edmund G. Loder, Bart.
20 $\frac{3}{4}$	10	12 $\frac{1}{2}$	Do.	Douglas M'Douall.
20 $\frac{1}{2}$	9 $\frac{1}{2}$	16 $\frac{3}{4}$	Do.	Marquis Pizzardi.
20 $\frac{1}{2}$	10 $\frac{1}{2}$	12 $\frac{3}{4}$	Dinder Valley . .	Col. A. Colville.
20 $\frac{1}{2}$	10 $\frac{1}{4}$	17	Sudan	Sir Abe Bailey.
20	10 $\frac{3}{4}$	16 $\frac{3}{4}$	Do.	Major H. H. S. Morant.
20	9 $\frac{5}{8}$	15 $\frac{5}{8}$	Do.	British Museum.
20	9 $\frac{1}{2}$	14 $\frac{3}{4}$	Lake Zuay, Abyssinia .	Prince de Lucinge.
19 $\frac{3}{4}$	9 $\frac{1}{2}$	13 $\frac{1}{2}$	Dinder Valley . . .	Major C. P. B. Wood.
19 $\frac{3}{4}$	9 $\frac{1}{2}$	11 $\frac{1}{2}$	Do.	Lord Villiers.
19 $\frac{3}{4}$	9	16 $\frac{1}{8}$	Dembelas, Abyssinia .	British Museum.
♀ 19 $\frac{3}{4}$	8	15	Setit Valley	H. Leney.
19 $\frac{5}{8}$	10 $\frac{1}{8}$	12 $\frac{5}{8}$	Abyssinia	Major P. H. G. Powell-Cotton.
19 $\frac{1}{2}$	8 $\frac{3}{4}$	17 $\frac{3}{4}$	Sudan	Capt. J. C. Graham.
19 $\frac{1}{2}$	9	11 $\frac{1}{2}$	Setit Valley	Countess of Sefton.
19 $\frac{1}{2}$	9	11 $\frac{1}{2}$	Dinder Valley	C. E. Oakley.
19 $\frac{1}{4}$	9 $\frac{1}{2}$	11 $\frac{1}{4}$	Blue Nile	G. L. Harrison.
♀ 19	7 $\frac{1}{2}$	18 $\frac{1}{2}$	Setit Valley	Earl of Sefton.

B.—KEILI RACE (*Bubalis tora digglei*).

Horns intermediate between those of *A* and *C*; general colour dark fulvous, with a tinge of rufous.

Distribution.—Keili northward along the Ofat River on Sudan Abyssinian frontier.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
—21 $\frac{1}{2}$	...	...	Abyssinian Border of the Sennar Province.	W. H. Diggle.
20 $\frac{1}{4}$	9 $\frac{3}{4}$	12 $\frac{3}{4}$	Do.	The Hon. Walter Rothschild.
20	10	11	Blue Nile	Hon. T. G. B. Morgan-Grenville.
19 $\frac{5}{8}$	10	14	Abyssinian Border of the Sennar Province.	W. H. Diggle.



Head of Somali Hartbeest. Shot by Col. H. G. C. Swayne.

C.—SOMALI RACE (*Bubalis tora swaynei*).

Sig, Somali.

Korkei, Galla.

Horns directed forwards and then inwards. Height at shoulder, about 47 inches; weight, about 300 lbs. General colour deep rufous chocolate-brown, with white tips to the hairs; face black, except the muzzle and a line between the eyes which, like the shoulders and upper part of fore-legs, as well as a patch on the upper part of the hind-legs, are black.

Distribution.—Interior of Somaliland and Shoa; in Somaliland on the dry plateau known as the *Haud*. The East Somali *B. s. noacki* is redder, with the face-mark inconspicuous and less defined.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{1}{4}$	8 $\frac{7}{8}$	26 $\frac{3}{4}$	Somaliland . . .	Col. H. G. C. Swayne.
19 $\frac{5}{8}$	9	27	Do. . . .	C. Bulpett.
19 $\frac{1}{2}$	9 $\frac{1}{2}$	22 $\frac{1}{2}$	Do. . . .	G. H. Cheetham.
19 $\frac{1}{4}$	10 $\frac{1}{4}$	29	Do. . . .	Sir Abe Bailey.
19 $\frac{1}{4}$	...	24 $\frac{1}{4}$	N. Somaliland . .	J. Menges.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-19 $\frac{1}{4}$	...	16 $\frac{1}{2}$	Somaliland . .	D. D. Haskard.
19 $\frac{1}{4}$	10	21 $\frac{5}{8}$	Do. . .	H. A. Bryden.
19	10	23 $\frac{1}{4}$	N. Somaliland .	A. E. Butter.
-19	9 $\frac{1}{4}$	18 $\frac{1}{4}$	Do. . .	Capt. M. M'Neill.
18 $\frac{3}{4}$	9 $\frac{3}{4}$	21	Do. . .	Capt. R. M. Backhouse.
18 $\frac{3}{4}$	9	21 $\frac{1}{4}$	Somaliland . .	Major R. P. Cobbold.
18 $\frac{3}{4}$	10	19	Do. . .	Capt. F. L. Livingstone-Learmonth.
18 $\frac{3}{4}$	9 $\frac{1}{2}$	19	Do. . .	J. R. Luchsinger.
18 $\frac{3}{4}$	9 $\frac{1}{4}$	16	Do. . .	Ford G. Barclay.
18 $\frac{1}{2}$	9 $\frac{1}{4}$	19 $\frac{1}{4}$	Do. . .	Capt. T. W. Greenfield.
18 $\frac{3}{8}$	8 $\frac{3}{4}$	18	Do. . .	Col. H. G. C. Swayne.
18 $\frac{1}{4}$	10 $\frac{1}{4}$	22 $\frac{1}{2}$	Do. . .	T. Morse.
18 $\frac{1}{8}$	9	17 $\frac{1}{4}$	Do. . .	Norman B. Smith.
18	8 $\frac{3}{4}$	10 $\frac{3}{4}$	Do. . .	Count J. Potocki.
18	9 $\frac{1}{2}$	20	Do. . .	W. F. Whitehouse.
18	9	22	Do. . .	Major B. R. M. Glossop.
17 $\frac{3}{4}$	11	17	Gallaland . .	Viscount Edmond de Poncins.
17 $\frac{3}{4}$	10	21 $\frac{1}{2}$	Somaliland . .	E. Lee Townshend.
17 $\frac{3}{4}$	10	20	Do. . .	Digby Davies.
-17 $\frac{1}{2}$	9 $\frac{1}{4}$	19	Do. . .	Sir Edmund G. Loder, Bart.
17 $\frac{1}{2}$	9	18 $\frac{3}{4}$	Abyssinia . .	I. Buxton.
♀ 15 $\frac{1}{2}$	7	11 $\frac{1}{8}$	Gallaland . .	Viscount Edmond de Poncins.

- Owner's measurements.



Head of Kongoni.

The **KONGONI** or **COKE'S HARTEBEEST** (*Bubalis cokei*).

Horn-pedicle moderate ; horns bracket-shaped, very short and thick. Height at shoulder, 48 or 49 inches. Weight, about 300 lbs. General colour uniform bright fawn, with the lower lip somewhat browner, and the lower part of the rump paler ; tail long, with the black tuft ascending some way up the hind surface. Two local races, *B. c. rothschildi*, from the district north of Lake Rudolf, and *B. c. kongoni*, from the Guaso-nyero, have been named, while the Nakuru hartebeest may represent a third race, *B. c. nakuræ*.

Distribution.—Eastern Africa, from Usagara northwards to Kilimanjaro, Masailand, and north of Lake Rudolf.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
21	9	13½	East Africa	Capt. M. L. Pears.
20¾	...	...	Do.	Sir Abe Bailey.
20	9½	14¼	Do.	Col. J. Caswell.
20	9	13¾	Do.	Capt. R. Meinertzhagen.
19¾	10½	16	Do.	Major the Hon. W. G. Cadogan.
19½	9¾	11¼	Do.	Capt. C. Brook.
19½	10¼	13½	Do.	Capt. R. A. McClymont.
19½	10¼	12¼	Do.	C. W. Turner.

— Owner's measurements.

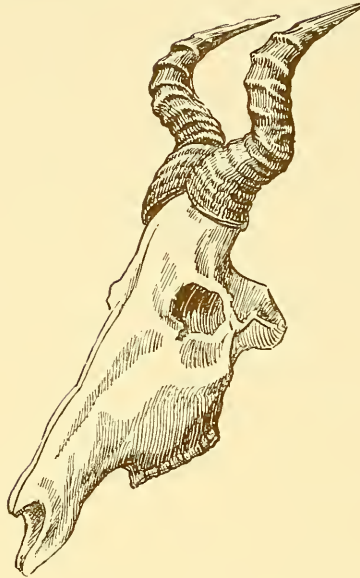
Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19 $\frac{1}{4}$	10 $\frac{1}{4}$	13	East Africa	The Master of Belhaven.
19 $\frac{1}{4}$	10	18 $\frac{3}{4}$	Do.	J. Gardiner Muir.
19 $\frac{1}{4}$	10	17 $\frac{3}{4}$	Do.	Major J. A. Hannington.
19 $\frac{1}{4}$	10 $\frac{1}{2}$	10 $\frac{1}{2}$	Do.	Major P. H. G. Powell-Cotton.
19 $\frac{1}{4}$	9 $\frac{3}{8}$	16	Do.	Lieut.-Col. E. G. Harrison.
19	10	15 $\frac{1}{4}$	Do.	A. Vonwiller.
19	9 $\frac{3}{4}$	15	Do.	Major C. E. D. Budworth.
19	9 $\frac{1}{2}$	11 $\frac{1}{2}$	Do.	Dr. Welsh.
19	9 $\frac{3}{4}$	12 $\frac{1}{2}$	Do.	Marquis of Tweeddale.
19	9 $\frac{1}{4}$	17 $\frac{1}{2}$	Do.	C. Frick.
19	10 $\frac{1}{4}$	12	Do.	W. F. Wailes-Fairbairn.
19	9 $\frac{3}{4}$	16	Do.	Sir Robert Harvey, Bart.
19	9 $\frac{3}{4}$	15	Do.	R. J. Cuninghame.
19	9	15 $\frac{3}{4}$	Do.	F. W. Belt.
19	9 $\frac{1}{2}$	16	Do.	J. Anstruther.
18 $\frac{7}{8}$	10	20	Do.	R. L. Scott.
18 $\frac{3}{4}$	9 $\frac{1}{4}$	14 $\frac{1}{4}$	Do.	C. B. C. Storey.
18 $\frac{3}{4}$	10	14 $\frac{3}{4}$	Do.	H. Sampson.
18 $\frac{3}{4}$	10 $\frac{1}{2}$	12 $\frac{3}{8}$	Do.	A. G. Murray Smith.
18 $\frac{3}{4}$	10 $\frac{1}{2}$	12 $\frac{1}{2}$	Do.	Duke of Alba.
18 $\frac{3}{4}$	10	10 $\frac{1}{2}$	Do.	C. C. Wilson.
18 $\frac{3}{4}$	10	11 $\frac{1}{4}$	Do.	Dr. A. E. Herz.
18 $\frac{3}{4}$	10 $\frac{1}{8}$	19	Do.	H. Fowler.
18 $\frac{5}{8}$	8 $\frac{7}{8}$	16 $\frac{1}{4}$	Do.	Sir F. J. Jackson.
18 $\frac{1}{2}$	10 $\frac{1}{4}$	14 $\frac{1}{2}$	Do.	British Museum.
18 $\frac{1}{2}$	9 $\frac{1}{2}$	13	Do.	W. G. Niven.
18 $\frac{1}{2}$	10	12 $\frac{3}{4}$	Do.	J. G. Millais.
18 $\frac{1}{2}$	9 $\frac{1}{2}$	15 $\frac{1}{4}$	Do.	H. G. Watson.
18 $\frac{1}{2}$	10	13	Do.	Prince de Caraman Chimay.
18 $\frac{1}{2}$	9 $\frac{1}{2}$	16 $\frac{3}{4}$	Do.	Major A. Leslie Renton.
18 $\frac{1}{2}$	10 $\frac{1}{2}$	15	Do.	Lieut. S. R. Bailey, R.N.
18 $\frac{1}{2}$	10 $\frac{1}{4}$	13	Do.	Duke of Sutherland.
18 $\frac{1}{2}$	9 $\frac{1}{2}$	16	Do.	J. Leslie.
18 $\frac{1}{2}$	10 $\frac{1}{2}$	17 $\frac{1}{2}$	Do.	Capt. J. A. Morrison.
♀ 16 $\frac{1}{4}$	7 $\frac{1}{4}$	14 $\frac{3}{4}$	Do.	E. H. Litchfield.

The two following specimens represent *B. c. nakuræ* :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19 $\frac{1}{2}$	10 $\frac{1}{2}$	13 $\frac{1}{4}$	Lake Nakuru	Capt. E. Sartorius.
19 $\frac{1}{2}$	10 $\frac{1}{2}$	11 $\frac{1}{2}$	Do.	H. W. Seton-Karr.

The following East African heads belong to the type regarded—
together with the Nakuru hartebeest—by Dr. O. Neumann as hybrids
between *cokei* and *lelwel jacksoni*:—

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
22	10 $\frac{1}{4}$	11 $\frac{1}{4}$	East Africa . . .	A. J. A. Douglas.
21 $\frac{1}{2}$	11	9 $\frac{3}{4}$	Do. . . .	W. W. Ashley.
21 $\frac{1}{2}$	11	12 $\frac{1}{2}$	Do. . . .	Hon. Guy Wilson.
21 $\frac{1}{2}$	10 $\frac{1}{2}$	16	Do. . . .	G. C. Slacke.
21 $\frac{1}{2}$	11 $\frac{1}{2}$	18 $\frac{3}{4}$	Do. . . .	C. J. Blackburne Maze.
21 $\frac{1}{2}$	11	21 $\frac{3}{4}$	Do. . . .	C. Mitchell.
21 $\frac{1}{4}$	12	12	Do. . . .	Guy Fenwick.
21 $\frac{1}{4}$	11 $\frac{3}{4}$	10 $\frac{1}{2}$	Do. . . .	S. Milsom.
21	10 $\frac{3}{4}$	9 $\frac{1}{2}$	Do. . . .	Capt. R. Meinertzhagen.
21	9 $\frac{3}{4}$	11 $\frac{1}{2}$	Do. . . .	Lieut.-Col. the Hon. W. A. W. Lawson.
21	11 $\frac{3}{4}$	11	Do. . . .	W. P. J. Fawcus.
21	9 $\frac{3}{4}$	9 $\frac{3}{4}$	Do. . . .	Sir Richard Dane.
21	10 $\frac{3}{4}$	10 $\frac{1}{2}$	Do. . . .	Capt. M. A. Black.
20 $\frac{3}{4}$	10 $\frac{3}{4}$	8 $\frac{1}{4}$	Do. . . .	S. E. Milsom.
20 $\frac{1}{2}$	11	11 $\frac{3}{4}$	Do. . . .	W. F. Wailes-Fairbairn.
20 $\frac{1}{2}$	10 $\frac{1}{2}$	15	Do. . . .	N. C. Cockburn.
20 $\frac{1}{2}$	10 $\frac{1}{2}$	15 $\frac{3}{8}$	Do. . . .	The Master of Belhaven.
20 $\frac{1}{4}$	10 $\frac{1}{4}$	10 $\frac{1}{4}$	Do. . . .	Major L. H. R. Pope-Hennessy.
20 $\frac{1}{4}$	10 $\frac{1}{2}$	14 $\frac{1}{4}$	Do. . . .	H. Clarkson Williams.
20 $\frac{1}{4}$	12	12	Do. . . .	I. Barrington White.
20	10 $\frac{3}{4}$	14	Do. . . .	Capt. the Hon. G. H. Douglas Pennant.
20	10 $\frac{3}{4}$	11 $\frac{1}{4}$	Do. . . .	R. J. L. Ogilby.
19 $\frac{3}{4}$	11	10 $\frac{3}{4}$	Do. . . .	Percy C. Madeira.
19 $\frac{1}{2}$	11 $\frac{3}{4}$	11 $\frac{1}{4}$	Do. . . .	A. de L. Long.
19 $\frac{1}{2}$	11 $\frac{1}{2}$	8 $\frac{3}{4}$	Do. . . .	Major H. B. Dalgety.
19 $\frac{1}{2}$	11 $\frac{1}{2}$	7 $\frac{1}{2}$	Do. . . .	Major G. A. Swinton Home.
19 $\frac{1}{2}$	11	13 $\frac{1}{2}$	Do. . . .	Col. J. E. Gough.
19 $\frac{1}{2}$	10 $\frac{3}{4}$	13 $\frac{1}{4}$	Do. . . .	Sir F. J. Jackson.
19 $\frac{1}{2}$	10	11 $\frac{3}{4}$	Do. . . .	J. Todd.
19 $\frac{1}{2}$	10 $\frac{1}{2}$	9 $\frac{1}{2}$	Do. . . .	Maharaja of Datia.
19 $\frac{1}{2}$	11	11 $\frac{3}{4}$	Do. . . .	Capt. J. W. H. D. Tyndall.
♀ 18	8 $\frac{1}{2}$	10 $\frac{3}{4}$	Do. . . .	Sir F. J. Jackson.



Skull and Horns of Neumann's Hartebeest.

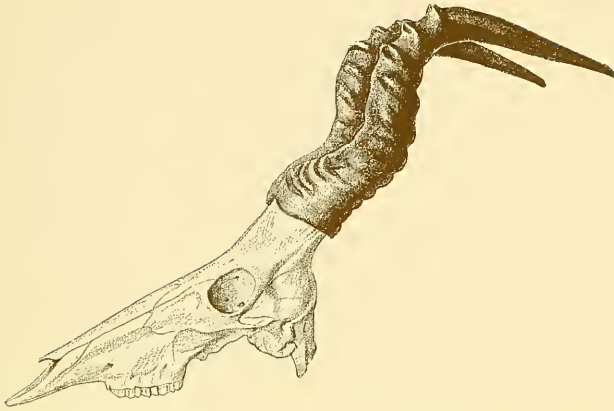
NEUMANN'S HARTEBEEBEEST (*Bubalis neumanni*).

In this species, which may be merely a race of *B. cokei*, the horns are to a considerable degree intermediate between those of the *tora-cokei* and those of the *letwel-cama* group.

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. Male 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. Height at shoulder, from 48 to 50 inches.

Distribution.—East Africa, in the neighbourhood of Lake Rudolf.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16½	10¾	8¼	N. E. of Lake Rudolf	A. H. Neumann.
♀ 13½	7¼	9¾	E. shore of Lake Rudolf	Do.



Skull and Horns of Jackson's Lelwel Hartbeest.

The **LELWEL HARTEBEEST** (*Bubalis lelwel*).

Mangazi, Waganda. *Teital*, Sudani.

Related to the preceding, but the general colour uniformly rufous tawny, and the horns less abruptly bent. In the typical race the horns incline slightly outwards at the tips, and the lower part of the legs have some dark markings. In the Baringo or Jackson's race, *B. l. jacksoni*, the legs are coloured like the back, uniformly foxy red. *B. l. niediecki* of the White Nile differs by the parallel or inward direction of the horn-tips. *B. l. insignis* of the Albert Nyanza district has a black dorsal stripe and two small dark patches on the face, and dark markings on the lower part of the legs. Weight, about 450 lbs. Height at shoulder, about 52 inches.

Distribution.—Typically from the Bahr-el-Ghazal, Upper Nubia, and Kordofan; represented in the interior of British East Africa, north of Lake Baringo, and Uganda, by *B. l. jacksoni*, to which many of the undermentioned specimens belong.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
26	11 $\frac{7}{8}$	14 $\frac{7}{8}$	E. Africa . . .	E. H. Litchfield.
25 $\frac{3}{4}$	11 $\frac{3}{4}$	9 $\frac{1}{2}$	Nr. Gondokoro . . .	Capt. E. T. W. McCausland.
25 $\frac{3}{4}$	11 $\frac{1}{2}$	14	E. Africa . . .	Capt. H. C. Hart.
25 $\frac{1}{4}$	12 $\frac{1}{2}$	7 $\frac{1}{4}$	Do.	A. Saunderson.
25 $\frac{1}{4}$	11 $\frac{1}{4}$	11 $\frac{3}{4}$	Do.	F. C. Selous.
25 $\frac{1}{4}$	11	14 $\frac{1}{2}$	Do.	W. N. McMillan.
25	12 $\frac{1}{4}$	12 $\frac{3}{8}$	Do.	Duke of Medinaceli.

. Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
25	10 $\frac{3}{4}$	10 $\frac{3}{4}$	White Nile . . .	Duke of Alba.
25	11 $\frac{1}{2}$	8	Sudan . . .	Sir Kenneth Crossley.
25	12 $\frac{1}{4}$	11 $\frac{1}{2}$	Uganda . . .	Douglas M'Douall.
25	12	10 $\frac{3}{4}$	Do. . .	Major A. W. Jennings Bramly.
24 $\frac{3}{4}$	12	14 $\frac{1}{4}$	Do. . .	Capt. V. C. de Crespigny.
24 $\frac{3}{4}$	11 $\frac{1}{2}$	13 $\frac{3}{4}$	Kordofan . . .	C. E. Lyall.
24 $\frac{3}{4}$	11 $\frac{1}{2}$	11 $\frac{1}{4}$	Sudan . . .	J. V. Colby.
24 $\frac{3}{4}$	11 $\frac{1}{2}$	9 $\frac{1}{2}$	East Africa . . .	Sutton Timmis.
24 $\frac{5}{8}$	11 $\frac{3}{8}$	8	Uganda . . .	Capt. R. H. Leeke.
24 $\frac{1}{2}$	12 $\frac{3}{4}$	7 $\frac{1}{2}$	East Africa . . .	A. de Rothschild.
24 $\frac{1}{2}$	10 $\frac{3}{4}$	10 $\frac{1}{4}$	Do. . .	Col. R. Bright.
24 $\frac{1}{2}$	11 $\frac{1}{4}$	13 $\frac{1}{4}$	Do. . .	C. Bower Ismay.
24 $\frac{1}{2}$	12	8 $\frac{3}{4}$	Do. . .	O. Mosley.
24 $\frac{1}{2}$	12	10	Sudan . . .	R. H. Willan.
24 $\frac{1}{4}$	11	10 $\frac{5}{8}$	East Africa . . .	A. Vonwiller.
24	12	8 $\frac{1}{2}$	Do. . .	Duke of Alba.
24	11 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . .	G. Henry.
24	11 $\frac{1}{2}$	9	Do. . .	Capt. H. C. S. Ashton.
23 $\frac{7}{8}$	10 $\frac{7}{8}$	12	Do. . .	Major P. H. G. Powell-Cotton.
23 $\frac{3}{4}$	10 $\frac{3}{8}$	6	White Nile . . .	Capt. A. H. Vivian.
23 $\frac{3}{4}$	11 $\frac{1}{2}$	11 $\frac{5}{8}$	Do. . .	Earl of Sefton.
23 $\frac{3}{4}$	11	12 $\frac{1}{2}$	East Africa . . .	B. Dominick.
23 $\frac{3}{4}$	12	11 $\frac{3}{4}$	Do. . .	F. Santos Saurez.
23 $\frac{3}{4}$	11 $\frac{1}{2}$	7 $\frac{1}{4}$	Do. . .	Col. Max. C. Fleischmann.
23 $\frac{3}{4}$	12 $\frac{1}{2}$	8 $\frac{3}{8}$	Do. . .	J. Leslie.
23 $\frac{3}{4}$	12 $\frac{1}{4}$	9 $\frac{1}{4}$	Do. . .	Sir J. Hume Campbell, Bart.
23 $\frac{5}{8}$	11	13 $\frac{1}{4}$	Kordofan . . .	Capt. H. S. Hearn.
23 $\frac{1}{2}$	12 $\frac{1}{2}$	10 $\frac{3}{4}$	East Africa . . .	Major H. B. Dalgety.
23 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{1}{2}$	Uganda . . .	Capt. P. Garrard.
23 $\frac{1}{2}$	12	5 $\frac{5}{8}$	East Africa . . .	R. J. Cuninghame.
23 $\frac{1}{2}$	11 $\frac{1}{4}$	7 $\frac{3}{4}$	Do. . .	N. C. Cockburn.
23 $\frac{1}{4}$	12 $\frac{1}{4}$	11 $\frac{1}{2}$	Do. . .	Col. Stephenson R. Clarke.
23 $\frac{1}{4}$	12 $\frac{1}{4}$	10 $\frac{1}{4}$	Do. . .	H. Sampson.
23 $\frac{1}{4}$	12	8 $\frac{1}{2}$	Do. . .	Mrs. Percy C. Madeira.
23 $\frac{1}{4}$	12 $\frac{1}{2}$	7 $\frac{1}{2}$	Uganda . . .	Miss C. Buxton.
23 $\frac{1}{4}$	11	7	Do. . .	Dr. J. O. Shircore.
23 $\frac{1}{4}$	11 $\frac{1}{4}$	10 $\frac{1}{4}$	East Africa . . .	Capt. P. Chapman.
23 $\frac{1}{8}$	12	7 $\frac{1}{2}$	Do. . .	A. Fowler.
♀ 22	8 $\frac{1}{2}$	6 $\frac{7}{8}$	White Nile . . .	Col. St. G. Henry.
♀ 21	10 $\frac{3}{4}$	11 $\frac{1}{4}$	Uganda . . .	Dr. A. Paget.
20 $\frac{1}{2}$	10 $\frac{1}{4}$	13 $\frac{1}{4}$	Blue Nile . . .	Capt. E. S. Stephenson.
20	10	11 $\frac{3}{4}$	Do. . .	Capt. J. A. Pollock.
20	9 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . .	Capt. N. A. Orr-Ewing.



Head of Cape Hartbeest. Shot by Mr. R. Bosworth-Smith.

The CAMA or CAPE HARTEBEEST (*Bubalis cama*).

Kama, Bechuana.

Ingama, Makalaka.

Horn-pedicle greatly elongated ; horns very sharply bent, and forming a letter V when viewed from the front. Height at shoulder, from 48 to 54 inches. General colour reddish brown, darker than in any of the preceding ; face (except between the eyes), back of neck, chin, shoulders, thighs, and tail black or blackish ; lower portion of buttocks with a conspicuous whitish or yellowish blaze. The typical southern form is extinct, and the name *B. cama selbornei* has been proposed for the race found north of the Orange River, as typified by the Kimberley herd.

Distribution.—Africa southwards of the Limpopo, but extending farther northwards along the confines of the Kalahari desert. This species (the rooi hartebeest) is now nearly exterminated in the Cape, but a few still linger in the old Bushman country in the north-west of Cape Colony. Although practically exterminated in the Orange River Colony and in most of the Transvaal (except to the north-west), numbers are to be found in the plains and open forest of British Bechuanaland, the Bechuanaland Protectorate, Basutoland, and in farms near Kimberley and Mafeking. In the North Kalahari and the desert-regions about the Botletli River big troops are to be met with. In Basutoland these hartebeests live in mountainous country, at a high elevation, where there is a heavy snowfall in winter.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
26	$12\frac{1}{4}$	$13\frac{3}{4}$	Orange River Colony	Sir Owen Philipps.
$25\frac{1}{2}$	$12\frac{1}{2}$	$12\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
25	11	10	Do.	C. Rube.
$24\frac{3}{4}$	$10\frac{1}{2}$	$9\frac{5}{8}$	?	R. T. Coryndon.
$24\frac{1}{2}$	12	11	Near Boshof, O.R.C.	Hon. Walter Rothschild.
$24\frac{1}{2}$	12	$9\frac{1}{2}$	South Africa . . .	C. D. Rudd.
$24\frac{1}{2}$	$12\frac{1}{2}$	10	Ngamiland . . .	F. T. Garbutt.
$23\frac{3}{4}$	10	$8\frac{3}{8}$	Do. . . .	British Museum (Sir Andrew Smith).
$23\frac{3}{4}$	11	$5\frac{3}{4}$	?	J. C. Phillips.
$23\frac{1}{2}$	$11\frac{1}{2}$	$10\frac{1}{2}$	Kamaland . . .	F. C. Selous.
$23\frac{1}{2}$	$11\frac{1}{2}$	$11\frac{5}{8}$	Bechuanaland . . .	G. L. Harrison.
$23\frac{1}{2}$	12	$8\frac{1}{2}$	?	N. H. Barton.

OWNER'S MEASUREMENTS.

26	$11\frac{3}{4}$	13	Natal	C. S. Mann.
$25\frac{3}{4}$	12	4	Orange River Colony	Sir Abe Bailey.
25	$11\frac{1}{4}$	$10\frac{1}{2}$	Do.	Capt. W. Jardine.
$24\frac{7}{8}$	11	7	Nata River . . .	American National Collection.
$24\frac{5}{8}$	$11\frac{3}{4}$	$11\frac{1}{8}$	?	B. Senior.
$24\frac{1}{2}$	$11\frac{5}{8}$	12	Damaraland . . .	Berlin Museum.
$24\frac{3}{8}$	$10\frac{1}{4}$	$9\frac{3}{10}$	Do. . . .	Th. Rehbock.
$24\frac{3}{8}$	11	$17\frac{5}{8}$	?	P. C. Keytel.
$24\frac{1}{4}$	11	$7\frac{7}{8}$	Orange River Colony	Sir Abe Bailey.
24	$10\frac{1}{2}$	$8\frac{1}{8}$	Griqualand . . .	A. F. Williams.
22	$11\frac{1}{4}$	$14\frac{7}{8}$	Basutoland . . .	R. Bosworth-Smith.
♀ $21\frac{3}{8}$	$8\frac{1}{2}$	$13\frac{1}{2}$	Orange River Colony	Sir Abe Bailey.



Head of Lichtenstein's Hartebeest.

The KONZI, or LICHTENSTEIN'S HARTEBEEST (*Bubalis lichtensteini*).

Inkulando, Mashona.
Kokotombwi, Barotsi.

Konzi, Chila, Chilala, and
Chibisa.

Konshi, Chinyanja.

Horn-pedicle very short and broad, and the horns themselves much flattened and curved inwards towards one another below the terminal backward inclination. Height at shoulder, 50 to 52 inches; weight, about 300 lbs. General colour tawny fulvous, becoming more rufous along the back, with the chin, tail-tuft, and front of cannon-bones black.

Distribution.—East Africa north of the Sabi River, including Nyasaland, Mozambique, German East Africa to Usagara, and N.E. and N.W. Rhodesia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22 $\frac{1}{4}$	11 $\frac{3}{4}$	15	Barotsiland . . .	T. G. Davey.
22 $\frac{1}{2}$	12 $\frac{3}{4}$	20	B.C. Africa . . .	Sir Alfred Sharpe.
21 $\frac{1}{2}$	12 $\frac{1}{4}$	9	E. of Tanganyika . . .	O. L. Berringer.
21 $\frac{1}{2}$	12 $\frac{1}{2}$	9	Batoka Plateau, Northern Rhodesia	F. Smitheman.
21 $\frac{1}{2}$	13 $\frac{3}{4}$	4	N.E. Rhodesia . . .	F. H. Melland.
21 $\frac{1}{4}$	14	11 $\frac{7}{8}$	Chambesi Valley . . .	L. Harger.
21 $\frac{1}{4}$	12 $\frac{1}{4}$	8 $\frac{1}{2}$	N.W. Rhodesia . . .	Capt. P. R. Bald.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
21 $\frac{1}{4}$	12 $\frac{1}{2}$	5 $\frac{1}{4}$	?	L. A. Wallace.
21 $\frac{1}{4}$	10 $\frac{7}{8}$	9 $\frac{1}{4}$	N.W. Rhodesia	Lieut.-Col. H. W. Wilberforce.
21	12 $\frac{3}{4}$	4 $\frac{3}{4}$	N.E. Rhodesia	Col. C. F. Blane.
21	13	13 $\frac{3}{4}$	N.W. Rhodesia	A. de L. Long.
21	11 $\frac{3}{4}$	4 $\frac{1}{4}$	Do.	P. K. Glazebrook.
21	13	8 $\frac{1}{4}$	Do.	G. F. Watherston.
21	13 $\frac{1}{2}$	10 $\frac{1}{2}$	Do.	Dr. W. D. Waterhouse.
20 $\frac{3}{4}$	13	13 $\frac{1}{4}$	Do.	G. L. Harrison.
20 $\frac{3}{4}$	11 $\frac{3}{4}$	9 $\frac{3}{8}$	N.E. Rhodesia	Hon. M. W. Elphinstone.
20 $\frac{3}{4}$	11	7 $\frac{3}{8}$	N.W. Rhodesia	T. D. M. Cardeza.
20 $\frac{3}{4}$	12 $\frac{3}{4}$	10 $\frac{1}{2}$	Do.	J. H. Leche.
20 $\frac{3}{4}$	13	8 $\frac{1}{4}$	Do.	Lady Scott.
20 $\frac{3}{4}$	11 $\frac{3}{4}$	6 $\frac{3}{4}$	Do.	A. Willis.
20 $\frac{1}{2}$	12	4 $\frac{1}{2}$	Do.	Capt. J. Harington.
20 $\frac{1}{2}$	13	9 $\frac{7}{8}$	Do.	Capt. the Hon. G. H. Douglas-Pennant.
20 $\frac{1}{2}$	11 $\frac{1}{2}$	17	Do.	W. F. Wailes-Fairbairn.
20 $\frac{1}{2}$	12 $\frac{1}{2}$	3 $\frac{1}{4}$	Do.	A. W. Griffin.
20 $\frac{1}{4}$	14	7	N.E. Rhodesia	R. Hayne.
20 $\frac{1}{4}$	13 $\frac{1}{2}$	6 $\frac{1}{4}$	N.W. Rhodesia	Lieut.-Col. R. W. R. Barnes.
20	13	5 $\frac{3}{4}$	Do.	Capt. F. C. L. Grieve.
20	12 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Capt. H. L. Archer-Houblon.
20	12 $\frac{1}{2}$	5 $\frac{3}{4}$	Do.	A. C. Brandon.
20	13	6	N.E. Rhodesia	R. D. Waterhouse.
19 $\frac{3}{4}$	13 $\frac{3}{4}$	7 $\frac{1}{2}$	N.W. Rhodesia	Hon. Guy Wilson.
19 $\frac{3}{4}$	12 $\frac{3}{4}$	9 $\frac{3}{4}$	Do.	Eastman Bell.
19 $\frac{3}{4}$	13	7 $\frac{1}{2}$	N.E. Rhodesia	Earl of Kingston.
19 $\frac{3}{4}$	12 $\frac{1}{2}$	6 $\frac{1}{4}$	Do.	Hon. W. Guinness.
19 $\frac{3}{4}$	13 $\frac{1}{2}$	7 $\frac{3}{4}$	Do.	A. Dickinson.
♀ 15	8 $\frac{7}{8}$	4 $\frac{7}{8}$	Sabi Valley, Mashonaland.	British Museum (F. C. Selous).

OWNER'S MEASUREMENTS.

23	13	7 $\frac{1}{2}$	?	Major H. Chamney.
22 $\frac{7}{8}$	11	7 $\frac{7}{8}$	?	Mr. Justice Hopley.



Head of Hunter's Hartebeest (Female).

The **HIROLA**, or **HUNTER'S HARTEBEEST** (*Damaliscus hunteri*).

Arôli, Somali.

Blanketta, Galla.

With this species we come to a group of antelopes closely allied to the true hartebeests, but with the frontal region not elevated into a horn-pedicle, and the horns themselves forming in most cases a lyrate or simple curve, and the face of medium length. The hair of the face is directed uniformly upwards; there is a transverse fold of skin, underlain by fat, immediately behind the horns. In the present species the slender horns are indeed doubly curved, although without the sudden angulation of the true hartebeests. They slant upwards and outwards, and then bend downwards, after which the long points are directed upwards. Colour uniform rufous, with a chevron on the face, the inner surface of the ears, and the tail-tuft white. Height at shoulders, about 48 inches; build light and graceful.

Distribution.—Southern Somaliland (Jubaland) to north bank of Tana River.

On front curve.	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	Straight.					
26 $\frac{3}{4}$	22 $\frac{1}{2}$	8 $\frac{5}{8}$	10 $\frac{1}{2}$	Joreh	I. N. Dracopoli.	
26 $\frac{3}{8}$	...	8 $\frac{1}{4}$	14 $\frac{1}{2}$	Jubaland	British Museum.
26 $\frac{1}{4}$	22	8 $\frac{3}{8}$	12 $\frac{1}{2}$	Tana Valley	Sir Robert Harvey, Bart.	
26	22 $\frac{1}{4}$	8 $\frac{1}{2}$	15 $\frac{1}{2}$	Do.	G. Blaine.	
-25	22 $\frac{1}{8}$	8	12	Jubaland	Col. E. G. Harrison.	
24 $\frac{7}{8}$	...	8 $\frac{3}{8}$	15 $\frac{1}{2}$	Tana Valley	H. C. V. Hunter.
24 $\frac{5}{8}$	21 $\frac{1}{4}$	8 $\frac{3}{8}$	9 $\frac{3}{4}$	Do.	Sir Robert Harvey, Bart.	
-♀ 21 $\frac{1}{4}$	19 $\frac{1}{2}$	5 $\frac{7}{8}$	11	Jubaland	Col. E. G. Harrison.	
♀ 20 $\frac{3}{8}$	18	6	15 $\frac{1}{4}$	Tana Valley	G. Blaine.	
20 $\frac{1}{8}$	...	5 $\frac{5}{8}$	8 $\frac{7}{8}$	Do.	Hon. Walter Rothschild.
19 $\frac{1}{2}$	17 $\frac{3}{8}$	5 $\frac{3}{4}$	10	Joreh	I. N. Dracopoli.	

- Owner's measurements.



Hunter's Hartbeest. Shot by Mr. I. N. Dracopoli.



Head of Korrigum. Shot by G. Blaine.

KORRIGUM, TIANG, or TOPI (*Damaliscus corriganus*).

Korrigum, Bornow. *Devi*, Hausa.

Horns with a single slightly lyrate curve. Size large. General colour reddish with a blackish blaze on the face and usually similar patches on the upper part of the fore-limbs, hips, and thighs, which extend in the form of a garter on the inside of the limbs above the knees and hocks. Tail-tuft black. Face-blaze usually black, but buffish or white in the guasingishu (*D. c. phallius*).

A.—TYPICAL KORRIGUM or SENEGAL HARTEBEEST

(*D. corriganus typicus*).

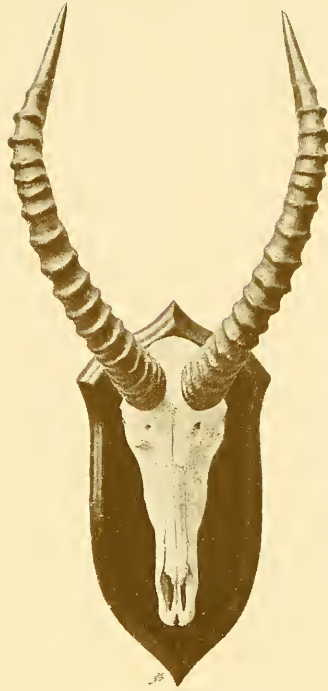
In this race the black markings are strongly pronounced, and a streak is given off from the face-blaze to run upwards and outwards below the eye. The lower parts of the legs appear to be coloured like the body.

Distribution.—Senegambia and the interior of West Africa.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-28 $\frac{1}{2}$	10 $\frac{3}{4}$	4 $\frac{3}{4}$	N. Nigeria . . .	Capt. C. F. Watson.
-26 $\frac{3}{4}$	9 $\frac{1}{8}$	15 $\frac{1}{8}$	Senegambia . . .	Imperial Museum, Vienna.
26 $\frac{1}{2}$	9 $\frac{3}{4}$	5 $\frac{1}{4}$	Lake Chad . . .	Major D. F. MacCarthy Morrogh.
-25 $\frac{5}{8}$	10	8	Do. . . .	Sir Edmund G. Loder, Bart.
-25 $\frac{1}{4}$	9 $\frac{1}{2}$	14	Gambia	Capt. W. B. Stanley.
24 $\frac{7}{8}$	10	6 $\frac{3}{4}$	Lake Chad . . .	A. L. Ross.
24 $\frac{3}{4}$	9 $\frac{1}{2}$	4 $\frac{1}{4}$	N. Nigeria . . .	Capt. L. C. Brodie.
24 $\frac{3}{4}$	9	9	Nigeria	Capt. A. B. Baillie-Hamilton.
24 $\frac{5}{8}$	10 $\frac{1}{4}$	7	Benue	Capt. E. J. Wolseley.
24 $\frac{5}{8}$	9 $\frac{3}{4}$	9 $\frac{1}{4}$	Gambia	G. Blaine.
-24 $\frac{5}{8}$	10 $\frac{1}{8}$	9	?	J. C. Phillips.
24 $\frac{5}{8}$	9 $\frac{5}{8}$	4 $\frac{3}{4}$	Lake Chad . . .	Major J. B. Cockburn.
24 $\frac{1}{2}$	9 $\frac{1}{2}$	10 $\frac{3}{4}$	Do. . . .	Capt. P. Chapman.
♀ 24 $\frac{1}{4}$	7	3 $\frac{3}{4}$	Do. . . .	Major D. F. MacCarthy Morrogh.
24 $\frac{1}{4}$	10 $\frac{1}{2}$	13 $\frac{1}{2}$	N. Nigeria . . .	Dr. G. J. Pirie.
24 $\frac{1}{4}$	10	10	Do. . . .	P. E. Bradney.
24	9 $\frac{1}{2}$	6	Lake Chad . . .	Capt. L. C. Jackson.
24	10	5	N. Nigeria . . .	Major T. Astley Cubitt.
24	9	9	Lake Chad . . .	Sir F. Lugard.
23 $\frac{3}{4}$	9 $\frac{1}{2}$	9 $\frac{1}{4}$	Do. . . .	Major E. J. Lugard.
23 $\frac{3}{4}$	9 $\frac{1}{4}$	7 $\frac{3}{8}$	Nigeria	W. F. Gowers.
23 $\frac{3}{4}$	10	8	Lake Chad . . .	Capt. S. B. B. Dyer.
23 $\frac{3}{4}$	9 $\frac{3}{8}$	12	Do. . . .	C. S. Burnett.
23 $\frac{3}{4}$	9 $\frac{1}{2}$	13 $\frac{1}{2}$	N. Nigeria . . .	Capt. C. C. West.
23 $\frac{3}{4}$	10 $\frac{1}{4}$	13	Do. . . .	Capt. G. Bonham-Carter.
♀ 21 $\frac{3}{4}$	6 $\frac{3}{4}$	5 $\frac{1}{4}$	Do. . . .	H. Maynard.

- Owner's measurements.



Skull and Horns of Tiang.

B.—TIANG (*D. corrigum tiang*).

Tiang, Dinka.

The East African representative of the korrigum, from which it differs by the larger area of black on the inside of the limbs, and the tan colour of their lower portion. The tiang of the Mau Plateau, B.E.A. (*D. c. selousi*) is distinguished by the bright chestnut colour of the muzzle and of the area round the eye above the dark eye-stripe. *D. c. jonesi* of the Upper Sudan is said to inhabit sandy tracts in place of swamps, and is reported to be a plumper and browner animal, with no dark eye-stripe, and no dark markings on the limbs.

Distribution.—Sennar, Kordofan, and the Bahr-el-Ghazal.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
25 $\frac{7}{8}$	9 $\frac{3}{4}$	11 $\frac{1}{2}$	Kordofan . . .	Major C. J. Hawker.
24 $\frac{3}{4}$	10 $\frac{1}{2}$	9 $\frac{5}{8}$	Do.	Major A. J. B. Percival.
24 $\frac{1}{2}$	9 $\frac{1}{2}$	9	White Nile . . .	H. Cookson.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
24½	10	7½	W. Kordofan . . .	A. L. Butler.
24¼	10	15¼	Kordofan . . .	Sir Robert Harvey, Bart.
23¾	8	7½	White Nile . . .	T. D. M. Cardeza.
23½	10	10½	Kordofan . . .	G. L. Harrison.
23½	8¾	7¼	Sudan . . .	Col. J. J. Asser.
23¼	8¾	8¼	Dinder Valley . . .	C. D. Eyre.
23¼	8¾	2¾	Sudan . . .	C. R. Gurney.
23	9½	8½	White Nile . . .	E. C. Crispin.
22¾	8¾	5¼	Do. . .	Lord St. Oswald.
22¾	8¾	9	Do. . .	British Museum (R. McD. Hawker).
22¾	9	7	Sudan . . .	Capt. R. J. Collins.
22½	9	6½	Do. . .	G. C. Whitaker.
22½	8¾	6½	Do. . .	Capt. G. S. Cameron.
22½	8½	9¼	Dinder Valley . . .	C. Bower Ismay.
♀ 22½	8¼	7½	Kordofan . . .	Walter Jones.
22½	9	6½	Sudan . . .	Col. A. Colville.
22¾	9¾	14	White Nile . . .	Lieut.-Gen. Sir B. T. Mahon.
22¼	9	5½	Sudan . . .	Capt. G. S. Nickerson.
22¼	8½	6¼	White Nile . . .	Major H. N. Dunn.
22¼	8¾	6	Do. . .	Capt. A. H. Vivian.
22¼	8¾	4½	Do. . .	E. M. Tabor.
22¼	9¾	4	Lado . . .	Q. Grogan.
22¼	9½	7¼	Sudan . . .	Capt. E. H. Francis.
22¼	9	5	Sobat District . . .	Capt. J. A. Pollock.



Head of Topi. From a specimen shot by the late Mr. A. H. Neumann.

C.—TOPI (*D. corrigum jimela*).

Korki, Galla.

Mangazi, Waganda.

Differs from *D. c. typicus* by the darker colour and absence of dark eye-stripe (see illustration). General colour dark reddish brown, with a silky bluish grey gloss; shoulders and thighs with blue-black patches; no dark stripe from the frontal blaze to the eye; under-parts bright cinnamon. Dark markings absent in young. Horns lyre-shaped, with the tips inclined backwards and inwards. A topi from the Upper Congo appears to connect *typicus* with *jimela*, having a vestige of the black eye-stripe. Height at shoulder, 48 to 50 inches. Weight, about 300 lbs.

Distribution.—Typically from the Juba district to British East Africa, thence to the Sabuki River, also near Lake Rudolf. The Uganda form apparently represents a distinct race of darker colour and larger stature.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
22½	8¼	5¾	Gallaland	D. P. MacGillivray.
21	8	6½	North end of Lake Rudolf	The late H. Andrew.
-20½	8½	7½	Uganda	Dr. A. MacCarthy Morrogh.
19½	9½	7¼	Do.	Lord Hindlip.
19¼	6⅝	3⅜	East Africa	H. C. V. Hunter.
19¼	8¼	8	S. Albert Edward Nyanza	E. S. Grogan.
19¼	8¼	6¼	East Africa	A. de L. Long.
19¼	7¾	6¼	Uganda	Sir F. J. Jackson.
19	7⅝	8	Lake Rudolf	A. E. Butter.
19	8¼	7¼	Uganda	Major A. W. Jennings Bramly.
19	6¾	8½	East Africa	A. Louw.
♀ 19	7¼	5¾	Lado Enclave	Major P. H. G. Powell-Cotton.
18¾	9	8	German East Africa	Sir A. Sharpe.
18¾	7½	7	Do.	Hon. M. W. Elphinstone.
18¾	6½	4⅝	?	I. N. Dracopoli.
18⅝	8⅝	8	Albert Edward Nyanza	Major P. H. G. Powell-Cotton.
18½	7¾	5¾	Tana Valley	Major H. de Prée.
18½	8¾	8½	East Africa	Sir Edmund G. Loder, Bart.
18½	8⅜	5¼	Do.	J. Carr Saunders.
18½	9	8¾	Do.	Capt. R. Meinertzhagen.
18¼	8½	8	Do.	B. Barr Smith.
18¼	8¼	5½	Jubaland	L. Aylmer.
18¼	8¾	8¼	Uganda	E. Canaple.
♀ 18	6½	7⅝	East Africa	Duke of Medinaceli.

- Owner's measurements.



Head of Bontebok.

The BONTEBOK (*Damaliscus pygargus*).

Distinguished from the preceding species of the genus by the lower portions of the limbs being mainly white, as well as (if one race of the korrigum be excluded) by a white blaze on the face, which is continuous from the horns to the nose. Height at shoulder, about 40 inches. Weight, about 200 lbs. Colour of fore part of back rufous fawn darkening into blackish on the back of ears, upper part of face, near the rump, flanks, shoulders, front of limbs, and tail-tuft; side of basal part of rump, upper half of tail, under-parts, and much of hind surface of limbs white.

The horns very nearly resemble those of the blesbok in shape, but their colour is much darker.

Distribution.—Cape Colony, south of the Orange River; now nearly exterminated. Although formerly occurring in tens of thousands on the Karus of Cape Colony and near Cape Agulhas, bontebok are reduced to a single herd preserved on some flats on the estate of Mr. Vander Byl, near Swellendam, in the south of Cape Colony.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16 $\frac{3}{8}$	6 $\frac{3}{4}$	9 $\frac{1}{8}$	?	British Museum.
16 $\frac{1}{4}$	6 $\frac{5}{8}$	8 $\frac{3}{4}$	Bredasdorp . . .	A. C. Campbell.
¹ 15 $\frac{7}{8}$	6 $\frac{7}{8}$	8	Do. . . .	British Museum (F. C. Selous).
15 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Do. . . .	Hon. Walter Rothschild.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	7	Do. . . .	W. A. Simpson Hinchliffe.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	9 $\frac{3}{8}$	Do. . . .	A. C. Humbert.
15 $\frac{3}{8}$	6 $\frac{1}{8}$	8 $\frac{1}{8}$	Cape Colony . . .	Sir Victor Brooke's Collection.

¹ Weight, 200 lbs. Height, 41 $\frac{1}{2}$ at shoulder.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15	$6\frac{3}{4}$	$8\frac{1}{2}$	Cape Colony . . .	F. C. Selous.
15	6	7	Do.	Sir Owen Philipps.
15	$6\frac{1}{4}$	$6\frac{3}{4}$	Bredasdorp	W. S. Curtis.
15	$6\frac{1}{4}$	10	Do.	A. W. Guthrie.
♀ 14 $\frac{1}{4}$	$5\frac{3}{8}$	$7\frac{5}{8}$	Do.	Sir Abe Bailey.
♀ 14 $\frac{1}{4}$	$5\frac{1}{4}$	7	Do.	W. A. Simpson Hinchliffe.
¹ ♀ 13 $\frac{1}{2}$	$5\frac{1}{4}$	$7\frac{1}{2}$	Do.	British Museum (F. C. Selous).

¹ Height at shoulder, $36\frac{3}{8}$.

OWNER'S MEASUREMENTS.

15 $\frac{3}{4}$	$6\frac{1}{2}$	$7\frac{1}{8}$	Bredasdorp	Capt. W. Jardine.
15 $\frac{1}{2}$	$6\frac{1}{2}$	5	Do.	A. Ohlsson.
15 $\frac{1}{2}$	$6\frac{3}{8}$	$9\frac{3}{4}$	Do.	Mr. Justice Hopley.
15 $\frac{1}{4}$	$6\frac{1}{8}$	9	Do.	P. C. Keytel.
15	$6\frac{1}{4}$	$7\frac{5}{8}$	Do.	Sir Abe Bailey.
15	6	$9\frac{1}{8}$	Do.	Dr. Albert von Stephani.
14 $\frac{1}{2}$	...	...	Do.	South African Museum.
♀ 13	5	$6\frac{1}{8}$	Do.	Abel Chapman.



Horns of Female and Male Blesbok.

The BLESBOK (*Damaliscus albifrons*).

Nunni, Bechuana.

Closely allied to the bontebok, but with the white blaze on the forehead divided by a brown line between the eyes, the absence of a white rump-patch, the wholly brown tail, and the yellowish rings of the horns; the horns themselves showing a greenish tinge.

Formerly to be numbered by hundreds of thousands, the beautiful blesbok had in the last sixty years grown very scarce, being only met with in small numbers on a few Boer farms in the Transvaal and the Orange River Colony; but since the Boer War they have increased enormously in numbers, and it is estimated that there are now over 50,000 on farms in the Orange River Colony. Seventy years ago blesboks often literally darkened the face of the land with

their innumerable legions. The north of the Cape Colony, Griqualand West, the Orange River Colony, and the plains of the Western and Southern Transvaal were the true home of this beautiful antelope. Gordon Cumming wrote as follows of the blesbok-country in 1848: "The plains exhibited one purple mass of graceful blesboks, which extended without a break as far as my eyes could strain; the depth of their vast legions covered a breadth of about six hundred yards."

Distribution.—Northern plains of Cape Colony, Orange River Colony, Transvaal, Griqualand West, and Bechuanaland.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
18 $\frac{5}{8}$	6 $\frac{1}{2}$	10	South Africa . . .	H. G. Supple.
18 $\frac{1}{4}$	5 $\frac{3}{4}$	12 $\frac{1}{4}$	Do. . . .	Sir Edmund G. Loder, Bart.
17 $\frac{3}{4}$	6 $\frac{1}{2}$	15 $\frac{1}{2}$	Orange River Colony .	Major B. Horsbrugh.
17 $\frac{1}{4}$	6 $\frac{3}{4}$	7	Transvaal	Sir Abe Bailey.
17 $\frac{1}{4}$	7 $\frac{1}{4}$	6 $\frac{1}{2}$	Orange River Colony .	B. J. Fitzherbert.
17 $\frac{1}{4}$	6 $\frac{3}{4}$	8 $\frac{1}{2}$	Do. . . .	Sir H. J. Gould-Adams.
17	6 $\frac{3}{4}$	7	?	F. V. Worthington.
17	7	10	?	J. L. Drège.
16 $\frac{3}{4}$	6 $\frac{3}{4}$	7	?	T. Stephenson.
16 $\frac{3}{4}$	6 $\frac{1}{2}$	9 $\frac{7}{8}$	Orange River Colony .	Col. W. H. Sitwell.
16 $\frac{1}{2}$	7	8	Do. . . .	Capt. H. D. Livingstone.
16 $\frac{1}{2}$	6 $\frac{1}{2}$	9 $\frac{1}{2}$	Do. . . .	Capt. Sandilands.
16 $\frac{1}{2}$	6 $\frac{3}{4}$	6	Do. . . .	Major C. F. Pinney.
16 $\frac{1}{2}$	6 $\frac{1}{4}$	8 $\frac{1}{4}$	Do. . . .	Hon. R. A. Ward.
16 $\frac{1}{2}$	6 $\frac{1}{2}$	4 $\frac{1}{4}$	Do. . . .	Major I. Brooke.
16 $\frac{3}{8}$	7	6 $\frac{3}{4}$	Do. . . .	A. E. Croker.
16 $\frac{1}{4}$	6 $\frac{3}{8}$	7 $\frac{1}{4}$	Do. . . .	Lieut.-Col. F. Fitzherbert.
16 $\frac{1}{4}$	6 $\frac{3}{8}$	7 $\frac{1}{4}$	Do. . . .	Major G. F. Henry.
16 $\frac{1}{4}$	6	6 $\frac{1}{2}$	?	Capt. R. Meinertzhagen.
16 $\frac{1}{4}$	7	9 $\frac{1}{4}$	?	British Museum.
16 $\frac{1}{4}$	6 $\frac{3}{4}$	9 $\frac{1}{4}$	Transvaal	Capt. C. G. Leslie.
16	6 $\frac{3}{8}$	7	?	Capt. E. W. S. Balfour.
16	6 $\frac{3}{4}$	8 $\frac{3}{8}$	Orange River Colony .	Col. Lord Douglas Compton.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16	6 $\frac{3}{4}$	7	Orange River Colony	W. A. Simpson Hinchliffe.
15 $\frac{7}{8}$	6 $\frac{3}{4}$	7 $\frac{1}{4}$	Do.	Sir Owen Philipps.
15 $\frac{1}{4}$	6 $\frac{1}{2}$	10	Driefontein, Orange River Colony	British Museum (F. C. Selous).
♀ 15	5 $\frac{1}{4}$	...	Orange River Colony	Capt. H. D. Livingstone.



Head of Blesbok.

OWNER'S MEASUREMENTS.

18 $\frac{1}{2}$	...	...	?	W. Colson.
18	6 $\frac{1}{2}$	10 $\frac{3}{8}$	Orange River Colony	F. R. N. Findlay.
17 $\frac{3}{4}$	...	...	Do.	C. S. Mann.
17 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{3}{4}$	Transvaal	J. B. Wheelwright.
17 $\frac{1}{4}$	6 $\frac{1}{4}$	10 $\frac{1}{8}$	Orange River Colony	Capt. W. Jardine.
17	...	8 $\frac{1}{2}$	?	Major W. Anstruther Gray.
17	6 $\frac{3}{4}$	9 $\frac{1}{2}$	?	J. C. Phillips.
16 $\frac{7}{8}$	7	7 $\frac{1}{2}$	Orange River Colony	Count E. Hoyos.
♀ 16 $\frac{1}{2}$	6 $\frac{1}{4}$	8 $\frac{3}{4}$	Do.	Sir Abe Bailey.
16	6 $\frac{1}{2}$	10 $\frac{1}{8}$	?	A. F. William.
15 $\frac{5}{8}$	6 $\frac{1}{2}$	7 $\frac{1}{4}$	Transvaal	H. A. Bryden.
♀ 14 $\frac{7}{8}$	4 $\frac{3}{4}$	8 $\frac{1}{4}$	Orange River Colony	P. C. Keytel.

¹ Weight, 180 lbs. Height at shoulder, 39 $\frac{1}{2}$ inches.



Head of Sassaby. From a specimen shot in Mashonaland by Mr. F. C. Selous.

The SASSABY or BASTARD HARTEBEEST (*Damaliscus lunatus*).

Incolomo, Matabili.

Ingalowana, Basuto.

Inkweko, Masubia.

Inyundo, Makalaka.

Kaboli, Barotsi and Ngami.

Luchu, Masara.

M'tengo, Chilala and Chibisa.

Mzanci, Swazi.

Mzansi, Zulu.

Unchuru, Makuba.

Horns short, starting obliquely outwards, with a single upward and backward lunate curve. Height at shoulder, from 3 feet 10 inches to 4 feet. General colour dark chestnut-red, with the face, shoulders, hips, upper portions of limbs, and tail-tuft black, and the region of the groin and margin of the ears white.

The sassaby has the reputation—in the opinion of all hunters who have tested its speed—of being the fleetest and most enduring antelope in South Africa; and were it not that, in common with the Cape hartebeest, it happens to be lacking in presence of mind, it would very seldom fall to the sportsman's rifle. A troop of sassaby may be often turned from its course, or brought to a halt, by firing over the heads of the fleeing animals. Or if the leader of the troop be wounded and turned out, the rest of the herd become confused and now and again offer easy shots.

Distribution.—South-East Africa, from north of the Orange River to the Zambesi, westward to Lake Ngami, and northwards to British Central Africa.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17½	7¼	11	N.E. Rhodesia	Sir Abe Bailey.
17½	8½	9¾	Do.	Earl of Kingston.
17¼	8½	10¾	Do.	R. D. Waterhouse.
17¼	7½	11½	Do.	Col. C. F. Blane.
17	8½	12¼	Do.	Col. A. Colville.
17	7¾	10½	Do.	P. M. Stewart.
16¾	7¼	12	Do.	W. A. Conduitt.
16¾	7¼	11¼	Ngamiland	Hon. G. Legge.
16¾	8¼	10¼	N.E. Rhodesia	J. Turner.
16⅝	7⅝	13¾	Do.	F. H. Melland.
16½	7½	14	Do.	R. Hayne.
16½	6¾	13¼	Ngamiland	A. G. Stigand.
16½	7½	12¼	N.E. Rhodesia	H. Cookson.
16½	7¾	10¾	Do.	Capt. S. H. Christy.
16½	7¾	10¼	S. Rhodesia	C. W. Adams.
16¼	7¼	11½	N.E. Rhodesia	Hon. W. Guinness.
16	7¾	11¼	?	A. Hugh Bainbridge.
16	7⅝	12¾	Chinama, B.C.A.	Hon. Walter Rothschild.
♀ 16	6¼	14¼	N.E. Rhodesia	Col. A. Colville.
15¾	7½	15½	Mashonaland	Sir John Willoughby, Bart.
15¾	7½	11	N.E. Rhodesia	F. H. Melland.
15⅝	7½	11¾	S. Africa	Sir Edmund G. Loder, Bart.
15½	8	11¾	N.E. Rhodesia	A. de L. Long.
15½	8¼	10¼	?	W. A. Simpson Hinchliffe.
15½	8	13	N.E. Rhodesia	P. K. Glazebrook.
15¼	...	...	Mashonaland	F. C. Selous.
15¼	7	14⅝	?	F. T. Garbutt.
15¼	8½	13¾	?	W. F. Wailes-Fairbairn.
15¼	8	12¼	S.E. Africa	British Museum (Sir Andrew Smith).
15¼	7¼	11½	Rhodesia	N. H. Barton.

OWNER'S MEASUREMENTS.

17¼	8	14½	N.E. Rhodesia	J. C. Phillips.
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Frontlet and Horns of Brindled Gnu. From specimen in the British Museum, presented by the late Mr. Rowland Ward.

The BRINDLED GNU or BLUE WILDEBEEST (*Connochætes taurinus*).

Ee-vumba, Makalaka.

Minyumbwi, Batonga.

Ikokoni, Basuto.

Munyumbwa, Chila.

Inkoni-koni, Amandebili.

Numbo, Masubia.

Inkongoni, Swazi and Zulu.

Nyamba, Chilala and Chisenga.

Kokong, Barotsi and Batoka.

Unzozo, Makuba.

From their near relatives the hartebeests the gnus, or wildebeests, are distinguishable at a glance by their grotesque shape and smooth horns, as they also are by their habits. The long, broad, and massive head has a blunt and bristly muzzle, and tufts of coarse hair on the forehead and chin; the chin-tuft also extending on to the throat. The horns, which are placed on the crown of the head, are approximated at their bases, especially in old bulls, and are nearly smooth, more or less flattened at the bases, but almost cylindrical at the tips; the curvature being at first outwards, or outwards and downwards, and then bending upwards at the tips. An abundant mane of long hair clothes the back of the neck; and the tail is covered with longer and softer hairs, reaching considerably below the hocks. It is from the equine form of the tail that these animals were long popularly known by the name of "horned horse." The hoofs are characterised by their narrow form.

The blue wildebeest, as this species is called in S. Africa, is a large animal, standing from 4 feet 3 to 4 feet $4\frac{1}{2}$ inches at the shoulder. Its most characteristic features are the outward direction of the horns, which are but little expanded at the base and not unlike those of a buffalo; the almost uniformly black tail, the partially pendent mane, the presence of a fringe on the throat, the downward direction of the long hair on the face, and the absence of long hair on the lower part of the chest and between the fore-legs. The general colour varies from

grizzled roan to blackish slaty brown, with more or less distinct vertical dark stripes, most conspicuous in the lighter-coloured specimens, on the sides of the neck and fore-quarters. Typically, the fringe of hair on the throat, like the mane and tuft on the forehead, is black.

Distribution.—Formerly ranging from the north of the Orange River for a long distance up East Africa, the brindled gnu is now practically exterminated in the Orange River Colony and the adjacent districts south of the Limpopo. It survives in parts of Griqualand



Head of Brindled Gnu.

West and the Kalahari, as well as in British Bechuanaland, and is numerous in northern Zululand, as well as in Khama's country, the Orange River Colony, and Rhodesia, and thence northwards through Central and East Africa, and it also occurs in Mozambique. In spite of its clumsy and ungainly appearance, the brindled gnu is a rapid mover; and even when severely wounded will not unfrequently succeed in making good its escape from the mounted hunter.

It is generally distributed in South-East Central Africa, and north of the Zambesi is represented by the Nyasa race (*C. taurinus johnstoni*), distinguished by the white chevron on the face. Another race is noticed below.

A.—TYPICAL (*C. taurinus typicus*) and NYASA RACES.

Widest outside.	Widest inside.	Length on front curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
32½	29	20	4	26½	P.E. Africa	British Museum (late Mr. Rowland Ward). See illustration, p. 150.
...	29	31	1 13¼	15¼	Sabi Flats	Dr. R. P. Mitchell.
32	28	24	4½	21	P.E. Africa	J. C. Phillips.
...	28½	21½	5¼	17½	Matabililand	G. H. M. Banks.
31½	28	22¼	4½	18½	Nyasaland	Capt. G. M. P. Hawthorne.
...	28½	20½	5	16	Pungwe	C. C. Gouldsmith.
30½	26½	21	4¼	21½	S.E. Africa	American National Collection.
30½	26½	23½	5½	16¼	?	Sir Abe Bailey.
30½	26½	23½	6½	18¼	S.E. Africa	F. C. Selous.
30½	26½	24¼	4½	18	P.E. Africa	Capt. R. A. McClymont.
30½	26	22¼	4½	18½	Do.	Col. A. Colville.
30¼	26	22	4½	17¾	Do.	W. A. Simpson Hinchliffe.
...	26½	21¼	4½	20½	Matabililand	Major R. Hayes-Sadler.
30¼	26¼	19¾	5	21½	?	B. Nicolson.
30	25½	21½	4½	19¼	Pungwe	Dr. S. Martin.
30	26¼	21½	4½	18¼	Do.	Hon. Walter Rothschild.
30	26	21	4½	19¼	Do.	Count R. Coudenhove-Kalergi.
...	25½	22	4¼	17	S. Africa	G. Richards.
29¾	25½	22	4½	16½	G.E. Africa	J. R. Rolls Richardson.
29¾	24¼	24½	4¼	18¾	S.E. Africa	H. W. Elliott.
29¾	26	22	4	18½	?	British Museum (Sir A. Smith).
29½	25	19¼	5	20¼	?	G. Bateman.
29½	25¼	20½	5	20	Zululand	Maj.-Gen. Sir David Bruce.
29½	25½	21¼	4¼	18½		Sir Owen Philipps.
29	26	19	4	21¼	N.E. Rhodesia	H. Cookson.
29	25½	...	3½	19	Pungwe	H.R.H. Prince Pedro d'Orléans et de Braganza.
29	24½	20¼	4¼	16½	?	A. Hugh Bainbridge.

OWNER'S MEASUREMENTS.

33½	28½	...	6½	24	Sabi Flats	B. Secretan.
30¾	27	...	4	20¾	S.E. Africa	H. M. von Archer.

1 Circumference.



Head of White Bearded Gnu.

B.—NYASA RACE.

Widest outside.	Widest inside.	Length on front curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
30	$25\frac{3}{4}$	$24\frac{1}{2}$	$4\frac{1}{2}$	$18\frac{3}{4}$	Nyasaland	Capt. R. Meinertzhagen.
$29\frac{1}{16}$	25	$20\frac{3}{4}$	5	16	Do.	A. R. Andrew.
29	$24\frac{3}{4}$	21	$4\frac{3}{4}$	14	Do.	T. Mills.
26	22	13	5	19	N.W. Rhodesia	G. Crompton.
26	$21\frac{1}{4}$	$13\frac{1}{4}$	$4\frac{1}{4}$	$17\frac{3}{4}$	Nyasaland	Sir Alfred Sharpe.
♀ $25\frac{7}{8}$	$21\frac{1}{8}$	$18\frac{7}{8}$	4	$12\frac{3}{8}$	Mashonaland	J. Ff. Darling.
$25\frac{3}{4}$	$21\frac{1}{2}$	$18\frac{3}{4}$	$4\frac{1}{2}$	$13\frac{1}{2}$	Nyasaland	R. H. Storey.
$25\frac{1}{2}$	$21\frac{3}{8}$	$17\frac{1}{2}$	4	15	Barotsiland	R. T. Coryndon.



Skull and Horns of White-bearded Gnu.

C.—KILIMANJARO or WHITE-BEARDED RACE (*C. taurinus albojubatus*).

Nyumbu, Swahili. *Lavagadli*, Somali.
Engat, Masai.

A race distinguished by its slightly paler colouring, and the yellowish white throat-fringe, a few whitish hairs being also mingled with the mane. The form of the widest part of the front of the horns is somewhat different from the corresponding region in the typical race. Weight, about 550 lbs.

Distribution.—East Africa—Athi plains, Ukambani, north of Kilimanjaro.

Widest outside.	Widest inside.	Length on front curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
29½	26¼	24¼	4½	18¾	East Africa	W. L. Spencer Churchill.
29½	25½	24	5¼	16¾	Do.	Sir Edmund G. Loder, Bart.
29¼	25¾	21½	4¾	17½	Do.	G. L. Harrison.
29	25	25¾	4¾	16¾	Do.	Mrs. J. E. R. Oldfield.
29	24¾	21	4¾	18	Do.	H. C. Phipps.
28¾	25	21½	4½	18¾	Do.	C. Bulpett.
28¾	25¼	21	4¾	18	Do.	W. Sewall.
28½	25	21	4½	17½	Do.	The late G. G. Longden.
28¼	24½	21	5	18¾	Do.	Abel Chapman.

Widest outside.	Widest inside.	Length on front curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
28 $\frac{1}{4}$	24 $\frac{1}{2}$	22	5	16	East Africa	J. H. Penruddock.
28 $\frac{1}{4}$	25	22	4 $\frac{1}{2}$	19	Do.	W. Neilson.
28 $\frac{1}{4}$	24 $\frac{1}{2}$	22 $\frac{1}{2}$	4 $\frac{1}{2}$	15	Do.	R. H. R. Brocklebank.
28 $\frac{1}{4}$	24 $\frac{1}{2}$	21	4 $\frac{3}{4}$	16 $\frac{3}{4}$	Do.	Capt. R. Meinertzhagen.
28 $\frac{1}{4}$	24	21 $\frac{1}{2}$	4 $\frac{3}{4}$	16 $\frac{1}{4}$	Do.	R. W. McKergow.
28	24 $\frac{1}{2}$	24 $\frac{3}{4}$	4 $\frac{3}{4}$	18	Do.	Dr. A. E. Herz.
28	23 $\frac{1}{2}$	20	4 $\frac{1}{2}$	18 $\frac{3}{4}$	Do.	Capt. V. C. de Crespigny.
28	25	24	4 $\frac{1}{4}$	18 $\frac{1}{4}$	Do.	Capt. G. F. Phillips.
28	24 $\frac{1}{2}$	22 $\frac{3}{4}$	5	19	Do.	G. W. C. Drexel.
27 $\frac{3}{4}$	24 $\frac{1}{4}$	21	5	18 $\frac{3}{4}$	Do.	C. B. C. Storey.
27 $\frac{3}{4}$	24 $\frac{1}{4}$	22 $\frac{3}{4}$	4 $\frac{1}{4}$	19 $\frac{1}{4}$	Do.	J. Anstruther.
27 $\frac{3}{4}$	23 $\frac{3}{4}$	21 $\frac{3}{4}$	5 $\frac{1}{2}$	17 $\frac{1}{4}$	Do.	Comdr. H. L. P. Herd, R.N.
27 $\frac{3}{4}$	24	23 $\frac{1}{2}$	4 $\frac{3}{4}$	15 $\frac{1}{4}$	Do.	Col. D. M. Lumsden.
27 $\frac{3}{4}$	25 $\frac{1}{2}$	22 $\frac{1}{4}$	5 $\frac{3}{4}$	14 $\frac{1}{2}$	Do.	Capt. T. H. Rivers Bulkeley.
27 $\frac{3}{4}$	23 $\frac{1}{2}$	25 $\frac{1}{4}$	4 $\frac{3}{4}$	16 $\frac{1}{2}$	Do.	W. N. McMillan.
27 $\frac{3}{4}$	24	25 $\frac{1}{4}$	4 $\frac{1}{2}$	14 $\frac{1}{4}$	Do.	F. C. Selous.
27 $\frac{3}{4}$	25	23 $\frac{1}{2}$	4 $\frac{3}{8}$	21	Do.	G. C. Slacke.
27 $\frac{3}{4}$	23 $\frac{3}{4}$	23	5 $\frac{1}{2}$	23	Do.	W. H. Levy.
27 $\frac{1}{2}$	23 $\frac{3}{4}$	21 $\frac{1}{2}$	4 $\frac{3}{4}$	15 $\frac{1}{4}$	Do.	C. Craig.
27 $\frac{1}{2}$	23 $\frac{3}{4}$	15 $\frac{1}{2}$	4 $\frac{3}{4}$	20 $\frac{3}{8}$	Do.	T. D. M. Cardeza.
27 $\frac{1}{2}$	23 $\frac{3}{4}$	21	4 $\frac{1}{2}$	16 $\frac{3}{4}$	Do.	Master of Belhaven.
27 $\frac{1}{2}$	...	22	6	15 $\frac{1}{2}$	Do.	Lord Delamere.
27 $\frac{1}{2}$	24	18 $\frac{3}{4}$	4 $\frac{1}{4}$	18 $\frac{1}{4}$	Do.	Dr. Clifford Brookes.
27 $\frac{1}{2}$	24	24 $\frac{1}{2}$	4 $\frac{1}{4}$	16 $\frac{1}{2}$	Do.	S. E. Milson.
27 $\frac{1}{4}$	23 $\frac{3}{4}$	18 $\frac{1}{4}$	4 $\frac{5}{8}$	19	Do.	Lord Alex. Thynne.
27 $\frac{1}{4}$	23	21	4 $\frac{1}{4}$	14 $\frac{1}{2}$	Do.	A. de Rothschild.
27 $\frac{1}{4}$	22 $\frac{3}{4}$	23	5 $\frac{1}{2}$	15	Do.	Major J. A. Hannington.
27 $\frac{1}{4}$	23 $\frac{1}{4}$	21	4 $\frac{1}{2}$	16 $\frac{3}{4}$	Do.	Percy C. Madeira.
27 $\frac{1}{4}$	23 $\frac{1}{2}$	20 $\frac{1}{4}$	4 $\frac{3}{4}$	21 $\frac{1}{2}$	Do.	C. Frick.
27 $\frac{1}{4}$	24	23	4 $\frac{1}{2}$	18 $\frac{1}{4}$	Do.	Lt.-Col. T. A. Colfox.
♀ 22 $\frac{3}{4}$	19 $\frac{1}{2}$	16 $\frac{1}{2}$	3 $\frac{1}{4}$	12 $\frac{3}{8}$	Do.	R. E. Wemyss.



Head of Gnu.

The GNU or BLACK WILDEBEEST (*Connochætes gnu*).

This southern species is the true gnu, which was formerly known to the Hottentots by that name, although, by the colonists, it is termed the black wildebeest. Its inferior size (height at shoulder, about 3 ft. 10 ins.), the downward curvature of the horns at starting and their great expansion at the base, the white tail, the abundant fringe of long hair on the lower part of the chest and between the fore-legs, the upright mane, and the crest of hair on the face, distinguish it from the brindled gnu. The general colour is uniform deep umber-brown, passing into black. Females are much smaller than males; and have the horns more slender and less expanded at the base.

Distribution.—The northern range of this species was approximately limited by the Vaal, or northern branch of the Orange River. At the time of the Boer War this gnu was represented by herds of a few hundred in the Orange River Colony and on Mr. C. D. Rudd's estate near Cape Town. On the plains of the latter country, as well as on the Karus of Cape Colony, it was formerly found in vast herds, generally in company with quaggas. Fierce and treacherous in disposition, it was especially characterised by its habit of indulging in grotesque capers and frolics on the approach of strangers.

Length on front curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
26 $\frac{1}{2}$	7 $\frac{3}{4}$	14 $\frac{1}{2}$	Orange River Colony	Sir Edmund G. Loder, Bart.
25 $\frac{1}{4}$	7 $\frac{5}{8}$	21 $\frac{1}{4}$	Do.	Major P. A. Cox.
25	6 $\frac{3}{4}$	15 $\frac{1}{4}$	Do.	A. Payne-Gallwey.
24 $\frac{1}{2}$	8	16	Do.	W. A. Simpson Hinchliffe.
24 $\frac{1}{2}$	7 $\frac{1}{4}$	18	Do.	Capt. C. Staveley.
24 $\frac{1}{2}$	8	17 $\frac{3}{4}$	Do.	Major C. D. Vaughan.
24 $\frac{1}{4}$	7 $\frac{1}{2}$	19 $\frac{1}{2}$	Do.	G. B. Plumptre.
24	8 $\frac{1}{2}$	15	Do.	Hon. Walter Rothschild.
24	9 $\frac{1}{2}$	15 $\frac{1}{2}$	Do.	Major C. L. Graham.
24	8 $\frac{1}{4}$	13 $\frac{1}{4}$	Do.	C. D. Rudd.
24	8	14	Do.	Col. Lord Douglas Compton.
23 $\frac{1}{2}$	8	16 $\frac{1}{2}$	Do.	E. McClellan.
23 $\frac{1}{2}$	7 $\frac{1}{4}$	15 $\frac{1}{2}$	Do.	A. F. William.
23	7 $\frac{1}{2}$	11 $\frac{1}{2}$	Do.	Capt. V. C. de Crespigny.
23	7 $\frac{1}{2}$	15	Do.	Bloemfontein Museum.
23	8	12 $\frac{1}{2}$	Do.	R. T. Coryndon.
23	7 $\frac{1}{4}$	13 $\frac{1}{2}$	Do.	Major B. Horsbrugh.
23	7 $\frac{3}{4}$	14 $\frac{3}{4}$	Do.	B. J. Fitzherbert.
22 $\frac{3}{4}$	7 $\frac{1}{4}$	15	Do.	F. C. Selous.
22 $\frac{3}{4}$	8 $\frac{1}{2}$	16 $\frac{1}{4}$	Do.	Capt. R. Meinertzhagen.
22 $\frac{3}{4}$	7 $\frac{5}{8}$	12 $\frac{1}{2}$	Do.	Sir H. J. Goold-Adams.
♀ 19 $\frac{3}{4}$	¹ 13 $\frac{1}{2}$	10 $\frac{3}{4}$	Do.	Dr. W. P. Y. Bainbrigge.

OWNER'S MEASUREMENTS.

30 $\frac{7}{8}$	¹ 22 $\frac{1}{2}$	14	Kalahari	Dr. F. H. H. Guillemard.
30	10 $\frac{1}{2}$	17 $\frac{1}{8}$	?	Mr. Justice Hopley.
29 $\frac{1}{2}$	6 $\frac{3}{4}$	7	Orange River Colony	Sir Abe Bailey.
27 $\frac{7}{8}$	7	11	Do.	Count E. Hoyo.
27 $\frac{1}{2}$	10	11 $\frac{1}{2}$	Do.	C. S. Mann.
26 $\frac{3}{4}$	7	14	?	Major W. Anstruther Gray.
26 $\frac{1}{4}$	8 $\frac{1}{2}$	15	Cape Colony	Grahamstown Museum.

¹ Circumference.



Skull and Horns of Abyssinian Duiker shot by Mr. J. G. Millais.

The DUIKERBOK (*Cephalophus grimmi*).

<i>Puti</i> , Bechuana.	<i>Impungi</i> , Swazi and Zulu.
<i>Impunzi</i> , Matabili.	<i>Imputi</i> , Basuto.
<i>Gwapi</i> , Chinyanja.	<i>Gudda</i> , Hausa.
<i>Nagi</i> , M'Kua.	<i>Mpewo</i> , Waganda.
	<i>Nakasha</i> , Chila.

The Cape duiker, or 'diver,' is a southern representative of an extensive group of, mostly small, antelopes confined to Africa. In all of these the muzzle is naked; face-glands of a more or less elongated form are present, as are lateral hoofs; the tail is of medium length, the knees have no tufts of long hair, and the females are provided with four teats. The horns, which are short and straight, are generally present in both sexes, but are smoother and more slender in the does than in the bucks; while in both sexes they are more or less hidden by a tuft of long hairs growing from the crown of the head. The upper cheek-teeth have low crowns, with square grinding surfaces, and the face-glands are arranged to form a bare line of pores on each side of the muzzle. The present species—the true duikerbok—is characterised by the horns (absent in the females) inclining upwards at an obtuse angle to the plane of the profile of the nose. Other features of the sub-group are the long and pointed ears, the general yellowish fawn colour, devoid of dark markings, except a brown nose-streak. The Cape duiker, which measures from 23 to 26 inches at the shoulder, ranges on the west as far north as Angola, and on the east, in the shape of local races, to the Shiré Highlands, north of which it is

replaced by shorter-eared races akin to the Abyssinian *C. g. abyssinicus*. Weight, about 30 lbs. Throughout its habitat the duikerbok is to be met with wherever sufficient covert exists; and its furtive, squatting, dodging habits are most aptly indicated by its name. Occurring either singly or in pairs, it strictly avoids both open plains and steep, rocky mountains.

A.—CAPE AND ALLIED RACES.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$6\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{9}{16}$	Transvaal . . .	Dr. W. Gibson.
$6\frac{1}{4}$	$2\frac{3}{8}$	$3\frac{1}{4}$	Do.	Sir Owen Philipps.
$5\frac{7}{8}$	$1\frac{7}{8}$	$2\frac{1}{2}$	South Africa . . .	W. A. Simpson Hinchliffe.
$5\frac{5}{8}$	2	$3\frac{1}{8}$	Do.	R. McClellan.
$5\frac{5}{8}$	$2\frac{1}{16}$	$2\frac{3}{4}$	N.W. Rhodesia . . .	Guy Nickalls.
$5\frac{1}{2}$	$2\frac{1}{8}$	$2\frac{7}{8}$	Selinya, Khama's country	F. C. Selous.
$5\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{3}{8}$	Cape Colony . . .	Mr. Justice Hopley.
$5\frac{1}{2}$	2	$2\frac{1}{4}$	Delagoa Bay . . .	F. W. Parish.
$5\frac{1}{4}$	$2\frac{1}{4}$	$1\frac{1}{2}$	Zululand	Major L. O. Williams.
$5\frac{1}{4}$	$2\frac{1}{8}$	$1\frac{5}{8}$	N.W. Rhodesia . . .	Earl of Kingston.
$5\frac{1}{4}$	$2\frac{1}{4}$	$3\frac{5}{16}$	Do.	Col. Lord Douglas Compton.
$5\frac{1}{4}$	$2\frac{3}{8}$	2	Do.	J. C. Phillips.
$5\frac{1}{8}$	2	3	S. Rhodesia	Capt. N. Livingstone Learmonth.
$5\frac{1}{8}$	$2\frac{1}{8}$	3	S.W. Transvaal . . .	W. F. Tuthill.
$5\frac{1}{8}$	2	$2\frac{3}{8}$	Transvaal	H. T. and A. H. Glynn.
$5\frac{1}{8}$	$2\frac{9}{16}$	$2\frac{3}{8}$	Cape Flats	Capt. W. Jardine.
5	2	$1\frac{3}{4}$	South Africa	J. J. B. Saffery.
5	$2\frac{1}{4}$	$2\frac{1}{4}$	Do.	G. Richards.
5	$2\frac{3}{8}$	$2\frac{1}{4}$	Do.	G. B. Plumptre.
5	$2\frac{1}{4}$	$2\frac{1}{2}$	Do.	F. C. Selous.
5	$2\frac{1}{4}$	$2\frac{1}{4}$	Angola	C. H. Pemberton.
5	$2\frac{1}{4}$	$2\frac{1}{2}$	?	C. C. Bowring.
5	$2\frac{1}{4}$	$2\frac{5}{8}$	Ngamiland	Mervyn G. Williams.
5	$2\frac{1}{2}$	$3\frac{1}{4}$	Northern Rhodesia . . .	F. Smitheman.
5	$2\frac{1}{4}$	$1\frac{1}{2}$	Do.	R. Beaumont.
5	$2\frac{1}{4}$	$2\frac{1}{4}$	Nyasaland	Dr. J. O. Shircore.

OWNER'S MEASUREMENTS.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
6½	...	...	Angola . . .	E. P. Cooper.
6¾	2¼	2¾	S. Africa . . .	C. S. Mann.
6	2½	3¼	Do. . . .	Col. J. J. Harrison.
6	2¾	2¾	Do. . . .	H. Henderson.
5¾	2¾	2¾	Do. . . .	Major H. Chamney.
5¾	2½	2½	Do. . . .	Sir Abe Bailey.
5¾	...	2½	Do. . . .	J. Whitaker.
♀ 4¾	2¾	2¾	?	P. C. Keytel.

B.—ABYSSINIAN (*C. grimmi abyssinicus*) AND ALLIED RACES.*Midaku*, Abyssinian.

Smaller than the Cape duiker, and agreeing in size and in the relative shortness of the ears with the crowned duiker (*C. g. coronatus*), this race differs from the latter by the general colour of the fur being greyish brown instead of bright yellow. Allied but larger races occur in the Kenia and Zomba districts of Eastern Africa, respectively known as *C. g. hindei* and *C. g. shirensis*.

Distribution.—The highlands of Abyssinia: the East African specimens mentioned below belong to the allied races.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
5¼	2½	2	E. Africa . . .	A. de L. Long.
4¾	2¼	...	Do. . . .	Abel Chapman.
4¾	2¼	2¼	Do. . . .	E. B. Horne.
4½	2¾	1¼	Do. . . .	Viscount Ennismore.
4½	2¼	2¾	Do. . . .	W. H. Lindsay.
4½	2	1½	Do. . . .	Gerard Buxton.
4½	2¼	2¾	Do. . . .	R. F. C. Tompson.
4¾	2¾	2½	Do. . . .	J. F. Franks.
4¼	2¾	2¼	Do. . . .	J. G. Millais.
4¼	2	2	Sudan	Major P. M. Dove.]
4¼	2¼	3	Abyssinia . . .	D. P. MacGillivray.
4¼	2¼	1¾	Do	W. F. Whitehouse.
4¼	2¾	¾	Bahr-el-Ghazal . . .	F. C. Selous.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4 $\frac{1}{8}$	2	2	Gallaland . . .	Lord Hindlip.
4 $\frac{1}{8}$	2 $\frac{1}{8}$	1 $\frac{7}{8}$	Abyssinia . . .	Major P. H. G. Powell-Cotton.
4 $\frac{1}{8}$	2	1 $\frac{3}{4}$	Do.	F. Gillett.
4 $\frac{1}{8}$	2 $\frac{3}{16}$	1	E. Africa . . .	E. H. Litchfield.
4 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{3}{8}$	Do.	K. V. Painter.
4 $\frac{1}{8}$	2	2 $\frac{1}{4}$	Do.	Sir Richard Dane.
4 $\frac{1}{8}$	2 $\frac{3}{8}$	1 $\frac{1}{2}$	Do.	Capt. C. J. Murray.
4 $\frac{1}{8}$	2 $\frac{5}{8}$	1 $\frac{1}{4}$	Do.	Sir J. Hume Campbell, Bart.
4 $\frac{1}{8}$	2	2	Sudan	Col. A. Colville.

C.—WESTERN RACES (*C. grimmi coronatus* and *C. g. campbelliæ*).

A small short-eared race standing about 15 or 16 inches in height, of a bright yellowish fawn colour, showing a faint tinge of black; *C. g. campbelliæ* is an allied West African race, with much more dark speckling in the coat, to which most or all of the following specimens probably belong.

Distribution.—West Africa.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4 $\frac{1}{8}$	2 $\frac{1}{4}$	2 $\frac{5}{8}$	N. Nigeria . . .	S. M. Grier.
4 $\frac{5}{8}$	2 $\frac{1}{4}$	...	Do.	Capt. G. C. Kelly.
4 $\frac{1}{2}$	2 $\frac{1}{2}$	$\frac{7}{8}$	Do.	Major E. M. Baker.
4 $\frac{1}{2}$	2 $\frac{1}{4}$	2 $\frac{7}{8}$	Nigeria . . .	Major J. A. Burdon.
4 $\frac{1}{2}$	2 $\frac{3}{4}$	1 $\frac{3}{4}$	Do.	Major J. B. Cockburn.
4 $\frac{3}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{2}$	Do.	Capt. W. M. Fowler.
4 $\frac{3}{8}$	2 $\frac{1}{4}$	1 $\frac{1}{2}$	Do.	G. W. Webster.
4 $\frac{3}{8}$	2 $\frac{1}{4}$	1 $\frac{7}{8}$	Gold Coast . . .	Capt. B. E. Murray.
4 $\frac{5}{16}$	2 $\frac{1}{2}$	1 $\frac{3}{8}$	Okutu, S. Borgu .	Major B. R. M. Glossop.
4 $\frac{1}{16}$	2 $\frac{1}{8}$	2 $\frac{1}{2}$	Nigeria . . .	C. Bryant.
4	2 $\frac{3}{8}$	3 $\frac{1}{2}$	Do.	Capt. F. Call.
4	2	1 $\frac{3}{8}$	Lokoja, Niger . .	Capt. T. N. Puckle.
2 $\frac{1}{16}$	1 $\frac{7}{8}$	1 $\frac{7}{8}$	Portuguese Guinea	Major P. H. G. Powell-Cotton.

THE BLACK DUIKER (*Cephalopus niger*).

Distribution.—Liberia to the Gold Coast.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3 $\frac{1}{4}$	2 $\frac{1}{8}$	2	?	J. C. Phillips.
2 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{3}{4}$	Gold Coast . . .	Capt. G. Wolfe-Murray.



Head of Blue Buck.

The **BLUE DUIKER** or **BLUE BUCK** (*Cephalophus monticola*).

Ipiti, Zulu.

In the great majority of duikers, that is to say all except those included in the group mentioned above, the horns, which are generally present in both sexes, slope backwards either in or just below the line of the profile of the nose. The present species is included in a subgroup characterised by the smoky-brown or blackish colouring, and is especially distinguished by the rufous legs and uniformly coloured rump, the height at the shoulder being 13 inches. Weight, about 8 lbs. clean.

Distribution.—Southern Africa, from the wooded districts of Cape Colony northwards to Benguela on the west, and Nyasaland on the east.

A.—TYPICAL RACE.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$2\frac{1}{2}$	$1\frac{2}{4}$	$1\frac{1}{2}$	Tushila Plain, B.C.A.	Hon. Walter Rothschild.
$2\frac{1}{8}$	$1\frac{3}{4}$	$\frac{7}{8}$	?	Sir Owen Philipps.
$2\frac{1}{16}$	$1\frac{1}{2}$	$1\frac{3}{4}$	Nyasaland . . .	D. D. Lyell.
2	$1\frac{1}{2}$	$1\frac{1}{2}$	Pondoland . . .	Sir Edmund G. Loder, Bart.
2	...	$1\frac{3}{4}$	Natal . . .	F. C. Selous.
2	$1\frac{5}{8}$	$1\frac{3}{4}$	Benguela . . .	G. W. Penrice.
2	$1\frac{3}{4}$	$1\frac{1}{4}$	N. Rhodesia . . .	L. de Fries.
2	$1\frac{3}{4}$	$1\frac{1}{2}$	?	Col. E. St. C. Pemberton.
♀ $1\frac{7}{8}$	$1\frac{3}{4}$	$1\frac{1}{4}$	Nyasaland . . .	D. D. Lyell.
$1\frac{3}{4}$	$1\frac{5}{8}$	$1\frac{3}{8}$	Benguela . . .	Hon. Walter Rothschild.

B.—SUDANI RACE (*C. monticola æquatorialis*).

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$1\frac{1}{2}$	$1\frac{2}{8}$	$1\frac{1}{2}$	Sudan . . .	Capt. C. Leigh.
$1\frac{1}{4}$	...	1	Uganda . . .	Capt. H. S. Toppin.

MAXWELL'S DUIKER (*Cephalophus maxwelli*).

This species belongs to the sub-group characterised by the smoky-brown or blackish colour. In size it is small (height at shoulder, about 14 inches). The face is coloured like the back; the limbs, like the body, are greyish brown; and the rump is not parti-coloured. It was first brought to England by Col. C. Maxwell, and described by Col. Hamilton Smith in 1827.

Distribution.—West Africa, from Gambia to the Gold Coast.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
2½	2¾	1¾	Portuguese Guinea . . .	Viscount de Thiene.
2¼	2¼	2⅛	Do. . . .	M. V. Hay.
2⅝	...	2⅝	Sierra Leone	L. J. Jones.
2¼	2⅝	1⅞	Ashanti	D. H. M. Boyle.
2⅝	2¼	2	S. Nigeria	Major E. M. Baker.
1⅝	2⅝	2	Fanti	Hon. Walter Rothschild.
♀ 1⅝	1¾	1⅞	S. Nigeria	Major E. M. Baker.

The RED or NATAL DUIKER (*Cephalophus natalensis*).

Rooi-Bosch-bokje, Boer. *Msumbi*, Swazis and Malonga.
Mkumbi, Zulu. *Isikupu*, Basuto.
Chisimbi, Lower Zambesi.

This duiker is classed in another sub-group of small or medium-sized species characterised by the fulvous, rufous, or chestnut ground-colour; and is specially distinguished by its small size (height at shoulder, 18 to 19 inches) and completely uniform colouring, having no dark markings on either the face or body. The horns are short and thick.

Distribution.—Natal, Transvaal, and Mashonaland (including all the forest and bush country of the East Coast), and perhaps the Lualwa River district of the Mozambique Province.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3⅞	2¾	2	?	Sir Abe Bailey.
3⅝	2¾	1¾	?	Major H. Chamney.
3⅝	3¼	3¼	Natal	C. S. Mann.
3⅝	2½	2⅝	Sabi Flats	Col. J. J. Harrison.
3¼	2⅝	2	?	S. Butcher.

- Owner's measurements.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3	2 $\frac{5}{8}$	1 $\frac{1}{4}$	?	Col. E. St. C. Pemberton.
3	2 $\frac{5}{8}$	1 $\frac{5}{8}$	Natal	Sir Owen Philipps.
3	...	1 $\frac{3}{8}$	?	J. H. Leche.
1 $\frac{3}{4}$	2 $\frac{3}{4}$	...	N. Makualand	Hon. Walter Rothschild.
- ♀ 2 $\frac{3}{4}$	1 $\frac{7}{8}$	1	Foot-hills of Kahlamba	F. Vaughan Kirby.
♀ 1 $\frac{5}{8}$	...	1	Near Durban	F. C. Selous.

- Owner's measurements.

¹ Determination provisional.

The BAY DUIKER (*Cephalophus dorsalis*).

From the last species the bay duiker, together with some allied West African forms, differs by the presence of a black stripe running along the back and continued to the tail. As a species, its special characters are the dark colour of the buttocks, and the evenly haired tail, which shows no sign of a tuft, and is white below.

Distribution.—West Africa, from Sierra Leone to the Gold Coast, being replaced in the Cameruns by *C. castaneus*.

Length on front.	Girth.	Tip to Tip.	Locality.	Owner.
31 $\frac{1}{8}$	2 $\frac{1}{8}$	2	West Africa	Hon. Walter Rothschild.
3 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{3}{8}$	Cameruns (<i>C. castaneus</i>)	C. S. Mann.
2 $\frac{7}{8}$	2 $\frac{1}{4}$	1 $\frac{1}{4}$	Sierra Leone	Major-Gen. P. S. Wilkinson.
2 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{5}{16}$	S. Nigeria	Major E. M. Baker.
2 $\frac{1}{2}$	2 $\frac{1}{2}$	1 $\frac{5}{8}$	Portuguese Guinea	C. S. Burnett.

BANDED DUIKER or ZEBRA-ANTELOPE (*Cephalophus dorisæ*).

The tiger-like transverse black bands on the orange ground of the back suffice to distinguish at a glance this pretty little duiker from all its kindred.

Distribution.—The interior of the West Coast of Africa from Liberia to Sierra Leone, where it is commonly known as the mountain deer.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
1 $\frac{7}{8}$	...	1	Liberia	British Museum (Dr. J. Büttikofer).
1 $\frac{5}{8}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	Do.	Hon. Walter Rothschild.



Head of Yellow-backed Duiker.

YELLOW-BACKED DUIKER (*Cephalophus sylvicultor*).

This species, which is the type of the genus, is distinguished from most other duikers by its large size, coupled with its blackish colouring, and the presence of a yellowish crest on the back and a similarly coloured longitudinal patch on the rump. Height at shoulder, 34 inches. The N.E. Rhodesian form of the species has been named *C. covi*, and the Ituri yellow-backed duiker has also received a name, but neither appears entitled to rank even as a distinct race.

Distribution.—The West Coast of Africa from Liberia to Angola, and thence eastwards through the forest-zone.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
7½	4¾	4½	N.E. Rhodesia . . .	E. R. D. Hall.
7	3½	...	Sierra Leone . . .	Major C. E. Palmer.
-6⅞	3	3	N.E. Rhodesia . . .	Dr. Albert von Stephani.
6¾	3¾	4½	Fanti	British Museum.
6⅞	3¾	3⅞	Luapulu River, N.E. Rhodesia	G. M. E. Leyer.
6½	3⅞	5	Sierra Leone . . .	W. St. J. Oswell.
6¼	3½	...	Ashanti	C. Beddington.
-6⅞	...	...		C. S. Mann.
-♀ 5¾	3¼	3⅞	Congo	Do.
5½	3⅞	4½	Gabun	Sir Edmund G. Loder, Bart.
5	3¾	4¼	Angola	Hon. Walter Rothschild.
5	3¾	4⅞	Do.	G. W. Penrice.
5	3	...	N.E. Rhodesia . . .	H. Cookson.
5	3	2¾	Do.	Earl of Kingston.

- Owner's measurements.

HARVEY'S DUIKER (*Cephalophus harveyi*).

This East African species is in size and its dark chestnut-red colour very similar to the Natal duiker, but with a dark brown or blackish blaze on the face, and the horns thick at the base and rough. *C. isaaci* is an allied species.

Distribution.—East Africa.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{1}{8}$	$2\frac{7}{8}$	$2\frac{1}{2}$	Kikuyu Forest . . .	Sir Edmund G. Loder, Bart.
$-3\frac{7}{8}$	2		East Africa . . .	Major H. W. A. Christie.
$1\frac{3}{8}$	$3\frac{1}{4}$	...	Mau Forest, East Africa .	Hon. Walter Rothschild.
$3\frac{3}{8}$	$2\frac{3}{4}$	$2\frac{1}{2}$	Do. . .	Sir F. J. Jackson.
$3\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{3}{8}$	East Africa . . .	The late Rear-Admiral R. A. J. Montgomerie.
$3\frac{1}{4}$	$3\frac{5}{8}$	$2\frac{3}{8}$	Do. . .	Sir J. Hume Campbell, Bart.

- Owner's measurements.

¹ *Cephalophus isaaci*.**LEOPOLD'S DUIKER** (*Cephalophus leopoldi*).*Distribution.*—Ituri Forest.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$3\frac{1}{2}$	$3\frac{1}{2}$	$1\frac{7}{8}$	Uganda . . .	Capt. H. S. Toppin.

RED-FLANKED DUIKER (*Cephalophus rufilatus*).*Gudda-n Kurimi*, Hausa.

This species stands about 14 inches, and is orange-rufous in colour, with the front of the face, the dorsal stripe, and the tail and limbs bluish grey, the crest black, the under-parts paler, and the throat whitish.

Distribution.—West Africa, from Senegambia to Nigeria.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$3\frac{3}{4}$	$3\frac{1}{2}$	$1\frac{3}{8}$	N. Nigeria . . .	H. de C. Mathews.
$3\frac{5}{8}$	$2\frac{3}{4}$	2	Do. . .	R. M. Blackwood.
$3\frac{1}{2}$	3	$2\frac{3}{8}$	Do. . .	B. C. B. Tower.
$3\frac{7}{16}$	$2\frac{7}{8}$	$2\frac{5}{8}$	Gambaga, Gold Coast	British Museum (Capt. W. Giffard).
$3\frac{3}{8}$	$2\frac{3}{4}$	$1\frac{1}{2}$	Nigeria . . .	Capt. C. C. West.
$3\frac{1}{4}$	$3\frac{1}{8}$	$1\frac{5}{8}$	Portuguese Guinea .	Major P. H. G. Powell-Cotton.
$3\frac{1}{8}$	$2\frac{1}{2}$	2	Nigeria . . .	Capt. P. A. Clive.
3	$2\frac{7}{8}$	$1\frac{1}{2}$	Okutu, S. Borgu . . .	Major B. R. M. Glossop.
$2\frac{7}{8}$	$2\frac{1}{2}$	$2\frac{3}{8}$	Lagos . . .	Capt. W. A. Ross.
$2\frac{3}{4}$	$2\frac{1}{2}$	$1\frac{1}{4}$	N. Nigeria . . .	G. W. Webster.
$2\frac{5}{8}$	$2\frac{1}{4}$	$1\frac{3}{4}$	Lokoja, Nigeria . .	Major-Gen. P. S. Wilkinson.
$2\frac{5}{8}$	$2\frac{1}{2}$	$1\frac{3}{4}$	Nigeria . . .	Capt. H. V. Venables Kyrke.
$2\frac{5}{8}$	$2\frac{1}{2}$	$1\frac{1}{2}$	Do. . .	W. D. Downes.
$2\frac{3}{8}$	$2\frac{5}{8}$	$1\frac{1}{4}$	Do. . .	Dr. M. W. Manuk.
$1\frac{3}{4}$	...	1	Ashanti . . .	Capt. B. E. Murray.



Head of Beira.

The BEIRA (*Dorcotragus melanotis*).

Beira or *Baira*, Somali.

Although at one time classed with the gazelles, this peculiar little Somali antelope is considered to be best placed in the neighbourhood of the dik-diks. The beira is characterised by the moderately long and spike-like horns of the bucks; but its most striking peculiarity is the great size of its ears, which led its discoverer, Mr. Menges, to describe it as a species of klipspringer. Another noticeable feature is the large size of the rounded hoofs, which are supported on globular pads. In colour, the upper-parts and legs are greyish fawn, with a tinge of pink; a darker band defining the fawn from the white of the under-parts, which (the white) is continued down the inner surfaces of the limbs as far as the knees and hocks. The head, from the ears to the nose, is bright rufous. Height at shoulder, about 23 inches.

Viscount Edmond de Poncins writes that "beira are good hill-climbers, and keep on rocky ground. The general shape is slender, the legs are long, the head is kept erect, the ears are very big and broad, shaped like the dik-dik's, eyes big and dark, nostrils black.

"Colour a sort of greyish blue, a bit like what we call in French *gorge-de-pigeon*, and exactly matching the colour of the ground, so, unless they are on the move, it is difficult to distinguish them. Unlike a gazelle, the tail is generally kept down. Horns resemble those of the klipspringer, but curve forward slightly more." From nose to root of tail, $32\frac{1}{4}$; height at shoulder, 21 inches; horns, 4 inches; weight, about 20 lbs.

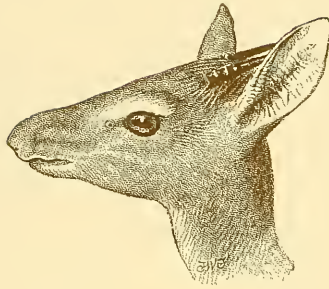
Distribution.—The interior of Somaliland and the upper part of the Blue Nile. The species appears to be rare and local, going about either singly or in pairs, and inhabiting the open desert. It was first made known to science in 1894.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
5	$1\frac{3}{4}$	$3\frac{1}{4}$	Somaliland . . .	J. Rosen.
$4\frac{1}{6}$	$1\frac{7}{8}$	...	Do.	Lord Delamere.
$4\frac{7}{8}$	$1\frac{3}{4}$	$1\frac{3}{4}$	Do.	Capt. J. H. Brocklehurst.
$-4\frac{3}{4}$	$1\frac{3}{4}$	$2\frac{5}{16}$	Northern Somaliland .	J. H. H. Dodds.
$-4\frac{3}{4}$	$1\frac{3}{4}$	$2\frac{1}{2}$	Do.	R. E. Mess, Roorkee.
$4\frac{5}{8}$	2	$2\frac{7}{8}$	Abyssinia	Major P. H. G. Powell-Cotton.
$4\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{5}{8}$	Northern Somaliland .	F. N. Ransford.
$4\frac{1}{4}$	2	$2\frac{1}{2}$	Abyssinia	W. F. Whitehouse.
$4\frac{1}{4}$	$1\frac{7}{8}$	$1\frac{3}{4}$	Somaliland	A. de L. Long.
$4\frac{5}{16}$	$1\frac{7}{8}$	$2\frac{5}{8}$	Do.	Capt. R. A. McClymont.
4	2	$2\frac{1}{16}$	French Somaliland . .	Viscount Edmond de Poncins.
4	$2\frac{1}{8}$	$2\frac{3}{4}$	Somaliland	Sir Edmund G. Loder, Bart.
$3\frac{7}{8}$	2	$2\frac{1}{4}$	Do.	Capt. H. C. Dobbs.
$3\frac{3}{4}$	$1\frac{3}{4}$	$2\frac{1}{4}$	Do.	W. Mure.
$3\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{8}$	Do.	H. D. Briggs.
3	$1\frac{1}{4}$	$2\frac{3}{4}$	Do.	P. K. Glazebrook.

- Owner's measurements.



Skull and Horns of Beira, from specimen shot by Major P. H. G. Powell-Cotton.



Head of Salt's Dik-dik.

SALT'S DIK-DIK (*Madoqua saltiana*).

This species, the Beni Israel of the Arabs, is the typical representative of a group of tiny, slenderly built antelopes characterised by the elongated, trunk-like nose, of which the tip is almost entirely hairy, the tuft of hair on the crown of the head, the short and almost rudimentary tail, and the minute size of the lateral hoofs. In the present species the last tooth in the lower jaw lacks the third lobe found in almost all ruminants, the muzzle is but moderately developed, and the general colour yellowish or fulvous grey, scarcely more rufous on the sides than on the back. Height at the shoulder, 14 inches.

Distribution.—The Coast Range of Eastern Abyssinia and adjacent districts.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3½	1½	1⅜	?	Hon. Walter Rothschild.
3¼	1½	1⅜	Abyssinia . . .	V. Bell.
3	1	1	Do. . . .	Sir Edmund G. Loder, Bart.
¹ 3	...	1⅝	Do. . . .	H. Boughton Leigh.
2¾	...	1⅜	Do. . . .	Major P. H. G. Powell-Cotton.
2¾	1¾	1¼	E. Sudan . . .	Major H. H. S. Morant.
2⅝	...	1¾	Abyssinia . . .	Sir Victor Brooke's Collection.
2½	1½	...	North Kassala . . .	Col. Ralph Vivian.
2⅜	...	1⅝	?	British Museum.

¹ Determination provisional.



Skull and Horns of Phillips's Dik-dik.



Head of Swayne's Dik-dik.

SOMALI DIK-DIKS

A.—*Madoqua swaynei*, *M. phillipsi*, and *M. [Rhynchotragus] guentheri*.

Sakáro, Somali.

Different districts of Somaliland are inhabited by several species of dik-diks, of which three are named above. The first of these is allied to Salt's dik-dik but smaller; it inhabits the northern half of Somaliland. Phillips's dik-dik, which also occurs in Northern Somaliland, is intermediate in size between Salt's and Swayne's dik-dik, from both of which it is distinguished by having the back grey and the sides and shoulders rich rufous or cinnamon. On the other hand, Günther's dik-dik is widely different from both, being nearly allied to the undermentioned Kirk's dik-dik, from which it is distinguished by the form of the nasal bones in the skull. It inhabits the central plateau of Northern Somaliland.

Height of Swayne's dik-dik at shoulder, about 13 inches.

Weight, ♂ 6 lbs.; ♀ 5 lbs.

Length on front.	Girth.	Tip to Tip.	Locality.	Owner.
1 3/8	1 5/8	2	Somaliland . . .	Col. H. D. Olivier.
3 1/2	1 1/4	1 5/8	Do. . . .	J. Kenneth Foster.
3 1/4	1 1/4	1 3/4	Do. . . .	W. W. Ashley.
3 1/8	...	1 7/8	Do. . . .	P. K. Glazebrook.
3 1/2	1 1/4	1 1/2	Do. . . .	Col. C. F. Blane.
1 3/8	...	1 3/8	Do. . . .	Sir Abe Bailey.
3 1/8	1 1/8	1 3/4	Do. . . .	P. H. Thomas.

¹ *M. guentheri*.

Length on front.	Girth.	Tip to Tip.	Locality.	Owner.
$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	Somaliland . . .	A. E. Pease.
$3\frac{1}{8}$	$1\frac{1}{2}$	$1\frac{3}{8}$	Do. . . .	Capt. F. L. Livingstone-Learnmonth.
3	$1\frac{1}{4}$	$1\frac{1}{2}$	Do. . . .	J. H. H. Dodds.
3	$1\frac{1}{8}$	$1\frac{1}{8}$	Do. . . .	J. H. Miller.
3	...	1	Do. . . .	Sir Edmund G. Loder. Bart.
3	$1\frac{1}{4}$	$1\frac{3}{8}$	Do. . . .	Capt. G. H. Hastings.
$2\frac{7}{8}$	...	$1\frac{3}{4}$	Do. . . .	Major P. H. G. Powell-Cotton.
$2\frac{7}{8}$	$1\frac{3}{8}$	$1\frac{5}{8}$	Do. . . .	Lord Delamere.
$2\frac{7}{8}$	$1\frac{1}{2}$	$1\frac{3}{8}$	Do. . . .	Lord Hindlip.
$2\frac{1}{8}$	$1\frac{1}{2}$	$\frac{7}{8}$	Do. . . .	Lieut.-Col. E. G. Harrison.
$2\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{1}{8}$	Do. . . .	R. E. Drake-Brockman.
$2\frac{3}{4}$	1	1	Do. . . .	T. W. H. Clarke.
$2\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{8}$	Do. . . .	A. E. Butter.
$2\frac{3}{4}$	$1\frac{1}{2}$	...	Do. . . .	C. Liddell.
$2\frac{3}{4}$	...	$1\frac{1}{10}$	Do. . . .	Major W. Anstruther Gray.
$2\frac{5}{8}$	$1\frac{1}{4}$	$1\frac{3}{8}$	Do. . . .	A. de L. Long.
$2\frac{1}{2}$	$1\frac{1}{4}$	$1\frac{3}{8}$	Do. . . .	J. C. Monteith.
$2\frac{1}{2}$	$1\frac{1}{4}$	$1\frac{3}{4}$	Do. . . .	Capt. A. H. Mosse.
$2\frac{1}{2}$	...	$1\frac{3}{8}$	Abyssinia	R. Hayne.

¹ *M. guentheri*.² *M. phillipsi*.

The following are the dimensions of a specimen of *M. guentheri* shot at Njemps by Sir F. J. Jackson:—

Length, $23\frac{1}{4}$. Height, $15\frac{1}{4}$. Horns, $2\frac{1}{2}$. Weight, $8\frac{1}{4}$ lbs.

B.—*M. piacentinii*.

Length on front.	Girth.	Tip to Tip.	Locality.	Owner.
$2\frac{5}{16}$	$1\frac{5}{16}$	$1\frac{1}{16}$	Somaliland	British Museum.
$2\frac{1}{4}$	$1\frac{5}{16}$	$1\frac{1}{8}$	Do.	Hon. Walter Rothschild.

KIRK'S DIK-DIK (*Madoqua* [*Rhynchotragus*] *kirki*).

This dik-dik belongs to a small group of species differing from the one containing *M. saltiana* by the presence of three lobes to the last tooth of the lower jaw, and likewise by the more decidedly trunk-like character of the muzzle. From the other members of the group *M. damarensis* differs by its superior size, and *M. guentheri* by the still greater development of the trunk. They belong to the subgenus *Rhynchotragus*. Weight, about 7 lbs.

Distribution.—East Africa, from Southern Somaliland to Ugogo, most numerous on the coast.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$3\frac{5}{8}$	$1\frac{1}{2}$	$1\frac{7}{8}$	East Africa . .	J. V. Colby.
$-3\frac{5}{8}$	$1\frac{5}{8}$	$1\frac{1}{8}$	Rift Valley . .	C. Steuart Betton.
$3\frac{1}{2}$	$1\frac{3}{4}$	...	East Africa . .	The late Prince P. Demidoff.
$3\frac{7}{8}$	$1\frac{3}{4}$	$1\frac{5}{8}$	Do. . .	J. B. Wheelwright.
¹ $3\frac{3}{8}$	...	$1\frac{1}{2}$	Do. . .	F. C. Selous.
$3\frac{3}{8}$	$1\frac{1}{4}$	2	Do. . .	Marquis of Tweeddale.
$3\frac{3}{8}$	$1\frac{1}{4}$	2	Do. . .	P. Fleming.
$3\frac{5}{8}$	$1\frac{1}{2}$	$1\frac{7}{8}$	Uganda . . .	Major P. H. G. Powell-Cotton.
$3\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{4}$	East Africa . .	Hon. Walter Rothschild.
$3\frac{1}{4}$	2	$1\frac{1}{2}$	Do. . .	K. V. Painter.
$3\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{8}$	Do. . .	Capt. M. L. Pears.
$3\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{5}{8}$	Do. . .	H. Johnson.
$3\frac{1}{4}$	$1\frac{1}{8}$	$1\frac{3}{4}$	Do. . .	W. P. Lowe.
$3\frac{1}{4}$	$1\frac{1}{8}$	$1\frac{3}{4}$	Do. . .	J. Todd.
$3\frac{1}{8}$	...	$2\frac{1}{4}$	Do. . .	Major W. E. Stobart.
$3\frac{1}{8}$	...	...	Do. . .	A. Benitz.
$3\frac{1}{8}$	...	$1\frac{1}{2}$	Do. . .	G. C. Slacke.
$3\frac{1}{8}$	...	$1\frac{5}{8}$	Do. . .	G. de P. Colville.
3	$1\frac{1}{2}$	$1\frac{3}{4}$	E. of Lake Chomo .	Lord Hindlip.
3	$1\frac{3}{4}$	$1\frac{3}{4}$	East Africa . .	H. Fowler.
3	...	$1\frac{1}{2}$	Do. . .	Sir F. J. Jackson.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3	...	$1\frac{1}{4}$	East Africa . . .	Capt. R. H. Hermon-Hodge.
3	2	$1\frac{5}{8}$	Do. . . .	Capt. the Hon. G. H. Douglas-Pennant.
3	...	$1\frac{1}{2}$	Do. . . .	R. de la Huerta.
3	$1\frac{1}{2}$	$1\frac{1}{2}$	Do. . . .	Percy C. Madeira.
3	...	2	Do. . . .	Gerard Buxton.
3	...	2	Do. . . .	S. S. Steele.
$1\ 2\frac{1}{8}\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{3}{4}$	Do. . . .	Sir F. J. Jackson.
$1\ 2\frac{3}{4}$	...	$1\frac{3}{4}$	Lake Baringo . . .	Rhys Williams.

¹ M. cavendishi.

DAMARA DIK-DIK (*Madoqua [Rhynchotragus] damarensis*).

Characteristics mentioned under heading of the preceding species.

Distribution.—Damaraland and Angola.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4	$1\frac{3}{4}$	$1\frac{1}{2}$	?	Sir Owen Philipps.
$-3\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	?	P. C. Keytel.
-3	...	...	?	Capt. M. Jurich.
$-2\frac{5}{8}$	$1\frac{5}{8}$	$1\frac{5}{8}$	Omararu	J. B. Wheelwright.
$-2\frac{5}{8}$	$1\frac{5}{8}$	$1\frac{5}{8}$	Do.	Capt. W. Jardine.
$-2\frac{1}{2}$	...	...	Damaraland	South African Museum. (Type specimen.)

HEMPRICH'S DIK-DIK (*Madoqua hemprichiana*).

Further information is desirable as to the claim of this dik-dik to distinction from *M. saltiana*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$3\frac{3}{8}$	$1\frac{3}{8}$	$1\frac{1}{2}$	Basaland	Hon. Walter Rothschild.
$2\frac{5}{8}$	$1\frac{1}{4}$	$1\frac{1}{4}$	Blue Nile	Capt. J. A. Pollock.
$2\frac{5}{16}$	$1\frac{3}{8}$	$1\frac{1}{8}$	Abyssinia	Hon. Walter Rothschild.

- Owner's measurements.



Head of Oribi.

The ORIBI (*Oribia scoparia*).Also known as *Oribia oribi*.

Inla, Swazi and Zulu. *Pulukudukamani*, Basuto.
Nakafwifwi, Chila. *Kamunda*, Barotsi and Batoka.
Mazia, Hausa.

The oribis, grysbok, klipspringer, and their allies constitute a group of comparatively small African antelopes presenting the following characters in common. The muzzle has a naked tip, the head is devoid of a tuft of hair, large face-glands open beneath the eyes by a small aperture on each side, the tail is short or moderate, and lateral hoofs may or may not be retained. Horns are usually present only in the bucks, and are short, almost or quite straight, with smooth tips and ridged bases. The upper cheek-teeth have tall and narrow crowns. The oribis, which are the largest members of the group, have normal hoofs and hair, and are specially distinguished by the presence of a bare glandular spot beneath each ear, and of a large opening in the skull beneath each eye-socket. In the typical species the horns of the bucks are comparatively smooth and slender, with only their basal two inches slightly ridged; there is a black patch on the forehead between the horns; and the tail is tufted and moderately bushy, with its terminal two-thirds black. Height at shoulders, 24 to 26 inches.

Distribution.—Typically, Africa south of the Zambesi. On grassy plains this graceful little antelope is still plentiful in many districts.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$7\frac{5}{16}$	$2\frac{5}{16}$	$2\frac{1}{4}$	Angola	G. W. Penrice.
$6\frac{1}{2}$	...	$2\frac{7}{8}$	Near Ladysmith . . .	Col. P. J. R. Crampton.
$6\frac{3}{8}$	$2\frac{1}{8}$	$1\frac{1}{8}$	N.W. Rhodesia . . .	P. R. Ramsey.
$6\frac{1}{4}$	$2\frac{1}{4}$	...	E. Griqualand	British Museum (J. ff. Darling).
6	$2\frac{1}{8}$	$2\frac{1}{4}$	Spitzkop	H. T. and A. H. Glynn.
6	$1\frac{1}{2}$	...	Rhodesia	H. H. Williams.
6	2	$2\frac{3}{8}$	Angola	C. H. Pemberton.
6	2	4	N.W. Rhodesia	R. E. Critchley-Salmonson.
$5\frac{7}{8}$	2	$3\frac{3}{4}$	Do. . . .	T. D. M. Cardeza.
$5\frac{7}{8}$	$2\frac{3}{8}$	$3\frac{1}{2}$	Do. . . .	R. C. Wood.
$5\frac{3}{4}$	$2\frac{3}{8}$	$2\frac{3}{8}$	Nyasaland	J. H. Hayes.
$5\frac{3}{4}$	2	$3\frac{1}{4}$	N.W. Rhodesia	H. Timmins.
$5\frac{3}{4}$	2	$2\frac{1}{4}$	Do. . . .	Capt. R. Meinertzhagen.
$5\frac{3}{4}$	2	$2\frac{3}{4}$	Do. . . .	Lady Sarah Wilson.
$5\frac{5}{8}$	2	$2\frac{3}{4}$	Bengueolo	F. Smitheman.
$5\frac{5}{8}$	$2\frac{1}{8}$	$1\frac{7}{8}$	Transvaal	F. R. N. Findlay.
$5\frac{5}{8}$	2	$2\frac{3}{8}$	N.W. Rhodesia	Col. Lord Douglas Compton.
$5\frac{5}{8}$	2	$2\frac{3}{4}$	Do. . . .	Sir Owen Philipps.
$5\frac{1}{2}$	2	$3\frac{1}{2}$	Do. . . .	Capt. H. T. Lumsden.
$5\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{5}{8}$	Do. . . .	G. L. Harrison.
$5\frac{1}{2}$	2	2	N.E. Rhodesia	Hon. W. Guinness.
$5\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{4}$	N.W. Rhodesia	Hon. Guy Wilson.

OWNER'S MEASUREMENTS.

$7\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{5}{8}$	Zomba, Nyasaland . . .	D. MacAlpine.
$6\frac{1}{2}$	...	$1\frac{3}{4}$	Batoka Plateau	E. Folley.
$6\frac{1}{2}$	...	$3\frac{3}{4}$	?	J. L. Drège.



Head of Abyssinian Oribe. Shot by Lieut.-Col. P. Polovtsoff.

The ABYSSINIAN ORIBI (*Oribia montana* or *O. cœrulea*).

Fäckō and *Mivaka*, Abyssinian.

Mori or *Lōyīk*, Dinka.

Very similar in most characters to the typical species, but with a shorter and less bushy tail, the tip of which has only a few sparse black hairs. Height at shoulder, 22 to 23 inches. These antelopes are shy and rarely seen in the open, preferring the thick bush and long grass. If disturbed, they go at a great pace with their heads quite close to the ground. The flesh is good.

A male weighing 38 lbs. stood $22\frac{1}{2}$ inches at the shoulder.

Distribution.—Abyssinia and Bogosland, with part of the Sudan.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$5\frac{5}{8}$	...	$2\frac{1}{8}$	Bahr-el-Ghazal . . .	Capt. J. L. F. Tweedie.
$5\frac{1}{2}$	...	$2\frac{1}{2}$	Bahr-el-Zaraf . . .	E. M. Tabor.
$5\frac{1}{2}$	2	$1\frac{1}{8}$	Kordofan	E. A. T. Bayley.
$5\frac{3}{8}$	2	$2\frac{5}{8}$	Abyssinia	Sir Abe Bailey.
$5\frac{3}{8}$	2	$2\frac{3}{8}$	Sudan	Capt. G. Wauhope.

EAST AFRICAN ORIBIS (*Oribia kenyæ*, *O. cottoni*, etc.)

Several oribis allied to the last have been described from B.E.A. ; *O. kenyæ* being from Mt. Kenia, and *O. cottoni* and *O. microdon* from the Guasin-gishu Plateau.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$6\frac{7}{8}$	$2\frac{3}{4}$	$3\frac{3}{8}$	E. Africa . . .	Lieut.-Col. P. Polovtsoff. (See illustration, page 176.)
$6\frac{3}{4}$	$2\frac{1}{2}$	3	Do. . . .	G. P. L. Cosens.
$6\frac{1}{2}$	$2\frac{1}{4}$	$3\frac{1}{4}$	Near Mount Elgon .	Capt. H. C. S. Ashton.
$6\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{3}{4}$	E. Africa . . .	Col. Max. C. Fleischmann.
$6\frac{3}{8}$	$2\frac{3}{8}$	2	Near Lake Victoria .	G. J. Muir.
$6\frac{1}{4}$	$2\frac{1}{4}$	3	E. Africa . . .	H. B. Tate.
$6\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{1}{4}$	Do. . . .	C. Bower Ismay.
$6\frac{5}{8}$	2	3	Do. . . .	W. A. Baird.
$6\frac{1}{8}$	2	$2\frac{3}{4}$	Do. . . .	R. B. Loder.
6	$2\frac{3}{8}$	$2\frac{7}{8}$	Do. . . .	H.R.H. the Duke of Connaught.
6	$2\frac{1}{4}$	$2\frac{3}{4}$	Do. . . .	Capt. M. L. Pears.
6	$2\frac{1}{4}$	$3\frac{1}{4}$	Do. . . .	Capt. R. Meinertzhagen.
6	2	$2\frac{7}{8}$	Do. . . .	W. N. McMillan.
6	$2\frac{1}{2}$	$2\frac{1}{4}$	Do. . . .	Capt. W. H. Wilkin.
$5\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{1}{2}$	Do. . . .	E. B. Horne.
$5\frac{3}{4}$	$2\frac{1}{4}$	2	Do. . . .	G. de P. Colville.
$5\frac{5}{8}$	$2\frac{3}{8}$	2	Do. . . .	Lieut. S. R. Bailey, R.N.
$5\frac{1}{2}$	$1\frac{3}{4}$	$3\frac{1}{8}$	Do. . . .	Duke of Medinaceli.
$5\frac{1}{2}$	2	$2\frac{1}{4}$	Do. . . .	F. C. Selous.
$5\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{3}{4}$	Do. . . .	Capt. R. Meinertzhagen.
$5\frac{1}{2}$	$2\frac{1}{4}$	2	Do. . . .	A. G. Murray Smith.
$5\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{8}$	Do. . . .	Capt. C. Brook.
$5\frac{1}{2}$	2	$2\frac{1}{8}$	Do. . . .	Sir Richard Dane.
$5\frac{1}{2}$	...	3	Do. . . .	L. L. Biddle.
$5\frac{1}{2}$	$2\frac{5}{8}$	$2\frac{1}{4}$	Do. . . .	H. Fowler.
$5\frac{3}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$	Do. . . .	A. de Rothschild.
$5\frac{3}{8}$	$2\frac{1}{4}$	2	Do. . . .	H. S. Keating.
$5\frac{3}{8}$	$2\frac{1}{8}$	$3\frac{3}{4}$	Do. . . .	Sir F. J. Jackson.
$5\frac{3}{8}$	$2\frac{1}{8}$	$1\frac{7}{8}$	Do. . . .	Duke of Peneranda.
$5\frac{3}{8}$	...	$2\frac{1}{2}$	Do. . . .	R. de la Huerta.
$5\frac{3}{8}$	...	3	Do. . . .	H. B. Cox.
$5\frac{3}{8}$	...	3	Do. . . .	C. W. Turner.
$5\frac{1}{8}$	$2\frac{3}{8}$	$2\frac{7}{8}$	Uganda . . .	Major P. H. G. Powell-Cotton.

The GAMBIAN ORIBI (*Oribia nigricaudata*).*Bevisia*, Hausa.

A species very close to the Abyssinian oribi, but of smaller size, greyer, and with a distinct black tip to the tail, as in the Cape species. Height at shoulder, 21 inches.

Distribution.—The open country of Senegal and Nigeria.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{3}{4}$	$2\frac{1}{2}$	$2\frac{1}{4}$	Lake Chad . . .	Capt. S. B. B. Dyer.
$4\frac{5}{8}$	$1\frac{3}{4}$	$2\frac{1}{2}$	N. Nigeria . . .	Capt. T. N. Puckle.
$4\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{4}$	Nigeria . . .	Capt. G. B. Scott.
$4\frac{5}{16}$	$1\frac{7}{8}$	2	Do.	F. Dwyer.
$4\frac{1}{8}$	$1\frac{3}{4}$	$2\frac{1}{4}$	Do.	Capt. H. V. Bastow.
$4\frac{1}{8}$	...	2	Gold Coast . . .	Capt. B. E. Murray.
4	$1\frac{3}{4}$	2	Nigeria . . .	Capt. H. A. Porter.
4	...	$2\frac{3}{4}$	Do.	Major J. A. Burdon.
4	$1\frac{3}{4}$	$2\frac{3}{4}$	Do.	Capt. S. C. Peck.
4	$1\frac{1}{2}$	...	Senegambia . . .	G. Fenwick Owen.
4	$1\frac{5}{8}$	$2\frac{1}{2}$	N. Nigeria . . .	Major E. M. Baker.
$3\frac{3}{4}$	$1\frac{5}{8}$	$1\frac{5}{8}$	Ashanti	D. H. M. Boyle.

HAGGARD'S ORIBI (*Oribia haggardi*).*Taya*, Swahili.*Nsilatso*, Uganda.

Distinguished from other oribis by the stouter horns, which are strongly ridged for rather more than the basal half of their length. Height at shoulder, about 24 inches.

Distribution.—The coast districts of East Africa in the neighbourhood of Lamu. Some of the undermentioned specimens may belong to allied species.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$6\frac{3}{8}$	$2\frac{1}{8}$	3	East Africa	Hon. Walter Rothschild.
6	$2\frac{1}{2}$	$2\frac{1}{8}$	Do.	H. Twyford.
$5\frac{3}{4}$	$2\frac{1}{2}$	2	Tana Valley	Capt. J. Harington.
$5\frac{5}{8}$	$2\frac{1}{4}$	$2\frac{1}{4}$	East Africa	C. Craig.
$5\frac{1}{2}$	...	$2\frac{7}{8}$	Do.	C. C. Bowring.
$5\frac{1}{2}$	$2\frac{1}{4}$	$3\frac{1}{8}$	Do.	L. Aylmer.
$5\frac{3}{8}$	2	$2\frac{5}{8}$	Tana Valley	Capt. Mackenzie Murray.
$5\frac{3}{8}$	...	$2\frac{3}{8}$	East Africa	Dr. A. Paget.
$1\frac{1}{2} 5\frac{1}{8}$	$2\frac{1}{4}$	2	East Central Africa . . .	Hon. Walter Rothschild.
$1\frac{1}{2} 5\frac{1}{8}$	$1\frac{1}{16}$	$2\frac{3}{8}$	North end of Lake Albert . . .	Col. Trevor Ternan.
$5\frac{1}{8}$	2	$3\frac{1}{4}$	East Africa	Col. A. Colville.

¹ Determination provisional.



Head of Suni. Shot by Mr. F. C. Selous.

The SUNI (*Neotragus moschatus*).

The elegant little antelopes included in the genus *Neotragus* are near relatives of the oribis, from which they are distinguished by the absence of a naked glandular patch below the ear and the want of lateral hoofs. They are further characterised by the horns being directed backwards nearly or quite in the plane of the face, as also by the large size of the open spaces in the skull in front of the sockets of the eyes, and the breadth of the nasal bones. In the present species the horns, although short, project behind the back of the head, are somewhat elevated above the plane of the forehead, and strongly and closely ridged, while the colour of the upper parts, inclusive of the tail-tip, is greyish fawn. Height at shoulder, 13 to 14 inches.

Distribution.—Zanzibar, adjacent islets, and mainland coast from B.E. Africa, through Kilimanjaro, to Mozambique.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$3\frac{1}{4}$	$1\frac{1}{2}$	2	Zanzibar . . .	Sir John Kirk.
$3\frac{1}{4}$	$1\frac{3}{8}$	$1\frac{1}{2}$	Do.	British Museum (Capt. Speke).
$3\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{1}{2}$	Do.	British Museum (Sir John Kirk).
$2\frac{1}{4}\frac{3}{8}$	$1\frac{1}{4}$	$1\frac{3}{4}$	Kikuyu	Master of Belhaven.
$2\frac{1}{4}\frac{3}{8}$	$1\frac{3}{8}$	$1\frac{3}{8}$	Do.	Sir F. J. Jackson.
$2\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	Near Nairobi	F. C. Selous. (See illustration.)

OWNER'S MEASUREMENTS.

$3\frac{7}{8}$	$1\frac{7}{8}$	$1\frac{3}{8}$	Zanzibar	Dr. Albert von Stephani.
$3\frac{3}{8}$	...	$1\frac{3}{8}$	Do.	F. C. Selous.



Skull and Horns of Livingstone's Suni.

LIVINGSTONE'S SUNI (*Neotragus livingstonianus*).

Lumswi, Shupanga.

Inhlegana, Amatonga.

Distinguished from the preceding species by its slightly superior dimensions (height at shoulder, 14 to 15 inches), the longer and thicker horns, more rufous coloration, and the blackish upper surface of the tail.

Two specimens killed by Mr. F. Vaughan Kirby measured—

	Male.	Female.
Extreme length over all, tip of nose to end of tail	27 $\frac{1}{8}$ ins.	25 $\frac{3}{4}$ ins.
Length of tail	3 $\frac{1}{2}$ "	3 "
Perpendicular shoulder-height	14 $\frac{1}{4}$ "	13 $\frac{1}{8}$ "
Girth behind the shoulder	14 $\frac{1}{8}$ "	13 $\frac{5}{8}$ "

Distribution.—South-East Africa, from Mozambique to Zululand; the race from Zululand being distinguished as *N. livingstonianus zuluensis*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{1}{2}$	Zambesia . . .	Rowland Ward.
4 $\frac{3}{8}$	2 $\frac{1}{8}$	...	Gungunyana's country	British Museum (H. T. Glynn).
4 $\frac{3}{16}$	...	1 $\frac{7}{8}$	Inhambani . . .	Major J. Stevenson-Hamilton.
4 $\frac{1}{4}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	Delagoa Bay . . .	Col. Lord Douglas Compton.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{1}{8}$	...	1	Delagoa Bay . . .	F. C. Selous.
4	...	$1\frac{7}{8}$	Do. . . .	A. Torre do Valle.
4	...	$1\frac{1}{2}$	Do. . . .	A. F. Williams.
$3\frac{7}{8}$	...	$1\frac{1}{2}$	Do. . . .	Sir Owen Philipps.
$3\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	Zambesia . . .	Sir Edmund G. Loder, Bart.
$3\frac{3}{4}$	$1\frac{1}{4}$	$2\frac{1}{4}$	Delagoa Bay . . .	W. E. Butcher.
$31\frac{1}{8}$	$1\frac{5}{4}$	$2\frac{5}{10}$	Do. . . .	Hon. Walter Rothschild.

OWNER'S MEASUREMENTS.

5	$1\frac{7}{8}$	$2\frac{1}{4}$	?	C. S. Mann.
$4\frac{5}{8}$	2	$2\frac{1}{4}$	?	Sir Abe Bailey.
$4\frac{1}{2}$	...	$1\frac{3}{4}$	?	F. J. Newnham.
$3\frac{7}{8}$	$1\frac{3}{4}$	$1\frac{1}{4}$	Delagoa Bay . . .	Capt. R. Meinertzhagen.



Skull and Horns of Record Steinbok, the property of Mr. D. Mackintosh.

The STEINBOK (*Rhaphiceros campestris*).

Isha, Swahili.

Ingaina, Swazi.

Timba, Barotsi and Batoka.

Impulupudi, Basuto.

Phuduhudu, Bechuana.

Umgwena, Matabili.

From the other members of the oribi group the grysbok and its cousin the steinbok are readily distinguished by the absence of a bare ear-patch, and by horns rising nearly vertically from the skull, in which the open spaces below the eye-sockets are unusually small. As mentioned below, this species is at once distinguished from the grysbok by the absence of the lateral hoofs and the uniform colour of the coat. The general tint of the latter is bright sandy rufous, becoming richer on the head, with a black horseshoe-mark on the crown. Height at withers, about 22 inches. Weight, about 25 lbs.

Distribution.—Africa south of the Zambesi on the east, and the Cuneni on the west, the north-east Transvaal race being separated as *R. c. capricornis*, and coming nearer to the Nyasa *R. c. neumanni*, which is paler. Probably owing to its small size, the steinbok has managed to escape the fate that has befallen so many South African antelopes. Wherever the traveller journeys on the veldt, he is

almost certain to meet this species, which may be regarded as the most familiar game-animal of the plains. Like many of its kindred, it is independent of water, and can exist in the heart of the Kalahari, where water may not occur for fifty miles.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$7\frac{1}{2}$	$1\frac{3}{4}$	$3\frac{1}{2}$	Cape Colony . . .	D. Mackintosh. (See illustration.)
$6\frac{1}{2}$	2	$2\frac{3}{4}$	?	Sir Owen Philipps.
6	2	$2\frac{1}{4}$	N. Transvaal . . .	Hon. Walter Rothschild.
$5\frac{3}{8}$	$1\frac{3}{4}$	$1\frac{5}{8}$	East Africa . . .	Percy C. Madeira.
$5\frac{1}{16}$	...	$2\frac{5}{8}$	Near Middelburg . . .	Major E. H. E. Abadie.
$5\frac{3}{4}$	2	$1\frac{7}{8}$	South Africa . . .	Sir Edmund G. Loder, Bart.
$15\frac{1}{2}$	...	$1\frac{9}{16}$	Kimberley . . .	F. C. Selous.
$5\frac{7}{16}$	...	$2\frac{5}{8}$	Cape Colony . . .	British Museum.
$5\frac{3}{8}$	2	$1\frac{3}{4}$	East Africa . . .	E. Gedge.
$5\frac{3}{8}$	$2\frac{1}{4}$	$2\frac{3}{8}$	?	G. B. Plumtre.
$5\frac{1}{4}$	...	$1\frac{1}{2}$	South Africa . . .	J. B. Neilson.
$5\frac{1}{4}$	$1\frac{7}{8}$	$2\frac{3}{8}$	Do. . . .	Capt. Lord R. Wellesley.
$5\frac{1}{4}$	$1\frac{7}{8}$	...	East Africa . . .	Capt. E. H. Sinkinson.
$5\frac{1}{4}$	$1\frac{3}{4}$	$2\frac{1}{8}$	Cape Colony . . .	E. McClellan.
$5\frac{1}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	East Africa . . .	F. C. Selous.
$5\frac{1}{8}$	$1\frac{3}{4}$	$1\frac{7}{8}$	Do. . . .	Mrs. Percy C. Madeira.
♀ 5	...	...	Do. . . .	J. G. Millais.

¹ Killed with hounds.

OWNER'S MEASUREMENTS.

$7\frac{3}{8}$	...	...	Cape Colony . . .	C. S. Mann.
$6\frac{7}{8}$	...	...	Graaf Reinet, C.C. . .	American National Collection.
$5\frac{7}{8}$	$1\frac{7}{8}$	3	?	Mr. Justice Hopley.
$5\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{7}{8}$	?	J. Whitaker.
$5\frac{5}{8}$	$1\frac{3}{4}$	$2\frac{1}{4}$	?	Major H. Chamney.
$5\frac{5}{8}$	2	$1\frac{1}{4}$	?	Sir Abe Bailey.
$5\frac{5}{8}$	$1\frac{3}{4}$	$1\frac{3}{4}$	Griqualand, West . . .	A. F. Williams.



Skull and Horns of Sharpe's Steinbok.

SHARPE'S STEINBOK (*Rhaphiceros sharpei*).

This species has the white-speckled chestnut coat of a grysbok, coupled with the feet of a steinbok. The crown of the head has a crescent-shaped black mark; and the large ears are very sparsely haired externally.

Distribution.—Nyasaland and Rhodesia; represented by a local race, *R. s. colonicus*, in North-eastern Transvaal and Swaziland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$2\frac{3}{16}$	$1\frac{3}{4}$	$1\frac{3}{4}$	B.C. Africa . . .	H. S. Buist.
$1\frac{3}{4}$	$1\frac{7}{16}$	...	Near Tete . . .	D. D. Lyell.
$1\frac{5}{8}$	...	$1\frac{5}{8}$	N.E. Rhodesia . . .	Major L. Boyd-Moss.
$1\frac{9}{16}$	$1\frac{1}{2}$	$1\frac{1}{2}$	Lower Shiré River . . .	Lord William Percy.
$1\frac{1}{2}$	...	2	B.C. Africa . . .	R. C. Wood.
$1\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{8}$	Do. . . .	Dr. J. O. Shircore.
$1\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	N.W. Rhodesia . . .	Marquis Pizzardi.
$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{5}{8}$	N.E. Rhodesia . . .	Hon. Walter Rothschild.
$1\frac{1}{4}$	$1\frac{7}{8}$	$1\frac{5}{8}$	B.C. Africa . . .	L. H. Cripps.

OWNER'S MEASUREMENTS.

2	...	...	N.W. Rhodesia . . .	Dr. A. H. B. Kirkman.
2	...	...	Do. . . .	C. S. Mann.



Head of Steinbok.

The GRYSBOK (*Rhaphiceros* [*Nototragus*] *melanotis*).

Isikupi, Basuto. *Kulu*, Makua. *Timba*, Chila.

Grysbok retain the lateral hoofs, which have disappeared in steinbok, and are further distinguished by the fur showing a large admixture of white, instead of being uniformly coloured. Height at shoulder, 22 inches. Weight, 24 lbs. The species has been made the type of a separate genus—*Nototragus*.

Distribution.—South Africa, extending as far north as Natal and Mozambique.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{7}{8}$	$1\frac{1}{2}$	$1\frac{7}{8}$	Cape Colony . . .	R. A. Cooper.
$4\frac{1}{2}$	$1\frac{3}{4}$	2	Do.	Lieut.-Col. H. J. G. Lloyd.
$4\frac{1}{2}$	...	$1\frac{1}{2}$	Do.	Sir Owen Philipps.
$3\frac{3}{8}$	$1\frac{3}{4}$	$2\frac{1}{4}$	Knysna, C.C. . . .	Commander the Hon. R. O. B. Bridgeman, R.N.
$3\frac{9}{16}$	$1\frac{3}{4}$	$1\frac{7}{8}$	Cape Colony . . .	F. C. Selous.
$3\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	Knysna	Sir H. J. Goold-Adams.

OWNER'S MEASUREMENTS.

$4\frac{5}{8}$	...	$1\frac{3}{4}$	Cape Colony . . .	P. C. Keytel.
4	...	...	Caledon, C.C. . . .	South African Museum.



Head of Klipspringer.

The KLIPSPRINGER (*Oreotragus saltator*).

Alakud, Somali.

Chipomco, Chilala.

Chinkomo, Chinyanja.

Ingululu, Makalaka.

Ikumi, Basuto.

Klipbok, Boer.

Ligoka, Zulu and Swazi.

Njereri, Batoka.

Sassa, Abyssinian.

Ngombani, Chila.

Not only from the other members of the oribi group, but from antelopes of all kinds, the agile little klipspringer, or "rock-jumper," is distinguished by the peculiar conformation of its hoofs and the structure of its hair. The former are large, cylindrical, blunt, and so situated in regard to the rest of the limb that the animal walks on what corresponds to their tips in other antelopes, the whole hoof thus rising vertically from the ground. As regards the hair, this may best be compared with that of the musk-deer, having the same brittle, pithy structure. Lateral hoofs are retained; the tail is reduced to a mere rudimentary stump; and the horns of the bucks rise nearly vertically from the head, with a slight forward curvature, and are ringed for their basal third. The hairs are olive-grey tipped with golden yellow, thus giving the characteristic speckled hue to the coat. Height at shoulder, from about 20 to 22 inches.

Distribution.—Mountainous and rocky districts in South and East Africa, from the Cape northwards to Nigeria in the west and Abyssinia in the east. The species has been divided into several local races of which the typical southern one has relatively short ears, with little black on them. In the East African *O. s. schillingsi* the females carry horns; the Nigerian race is *O. s. porteousi*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
5 $\frac{3}{16}$	2 $\frac{1}{4}$	1 $\frac{5}{8}$	N. E. Rhodesia . . .	P. M. Stewart.
5 $\frac{1}{2}$	2 $\frac{3}{8}$	1 $\frac{5}{8}$	P. E. Africa . . .	Hon. Walter Rothschild.
5 $\frac{3}{8}$	2	2 $\frac{1}{8}$	N. E. Rhodesia . . .	Dr. F. O. Stoehr.
5 $\frac{1}{4}$	2 $\frac{1}{2}$	2 $\frac{1}{4}$	Swaziland . . .	C. H. Taylor.
5 $\frac{1}{8}$	2	2 $\frac{1}{4}$	Lebombo Mts. . .	R. T. Coryndon.
4 $\frac{3}{4}$	1 $\frac{3}{4}$	2 $\frac{3}{8}$	East Africa . . .	Capt. W. B. Brook.
4 $\frac{3}{4}$	2	2 $\frac{1}{2}$	Nyasaland . . .	J. Stewart Wells.
4 $\frac{3}{8}$	2 $\frac{3}{8}$	2 $\frac{1}{8}$	Rhodesia . . .	Col. Lord Douglas Compton.
4 $\frac{5}{8}$	2	2 $\frac{1}{2}$	East Africa . . .	Capt. J. N. Price Wood.
4 $\frac{1}{2}$	2 $\frac{5}{16}$	2 $\frac{1}{16}$	Witberg, Cape Colony .	H. A. Bryden.
4 $\frac{1}{2}$	...	2 $\frac{3}{8}$	N. E. Rhodesia . . .	Major L. Boyd-Moss.
4 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	?	Capt. J. Harington.
4 $\frac{1}{2}$	...	1 $\frac{3}{4}$	S. Rhodesia . . .	Major L. Williams.
4 $\frac{1}{2}$	2	3 $\frac{1}{4}$	East Africa . . .	E. Gedge.
4 $\frac{1}{2}$	...	2 $\frac{3}{8}$	Do. . .	Sir Owen Philipps.
4 $\frac{1}{2}$	2 $\frac{1}{4}$	2 $\frac{1}{8}$	B. C. Africa . . .	E. Homer.
4 $\frac{7}{16}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	E. Mashonaland . . .	F. C. Selous.
4 $\frac{3}{8}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	Matabililand . . .	Hon. R. A. Ward.
4 $\frac{3}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{4}$	N. E. Rhodesia . . .	H. Cookson.
4 $\frac{3}{8}$	2 $\frac{1}{4}$	2 $\frac{1}{8}$	East Africa . . .	W. H. Levy.
4 $\frac{3}{8}$	...	2 $\frac{1}{8}$	Do. . .	G. B. Blackwell.
4 $\frac{3}{8}$	2	2	Somaliland . . .	Capt. C. Steele.
4 $\frac{1}{4}$	2 $\frac{1}{4}$	2 $\frac{5}{8}$	Do. . .	Capt. R. A. McClymont.
4 $\frac{1}{4}$	2	2 $\frac{1}{4}$	Do. . .	A. de L. Long.
4 $\frac{1}{8}$	2 $\frac{1}{2}$	1 $\frac{3}{4}$	North Nyasaland . . .	James Yule.
4	1 $\frac{7}{8}$	2	Sudan . . .	Major H. H. S. Morant.
♀ 4	2	2 $\frac{1}{4}$	East Africa . . .	Capt. R. Hall.
3 $\frac{7}{8}$	1 $\frac{7}{8}$	2 $\frac{1}{4}$	Abyssinia . . .	Major P. H. G. Powell-Cotton.
3 $\frac{7}{8}$	2	2 $\frac{1}{4}$	Do. . .	J. H. Miller.
3 $\frac{11}{16}$	...	2 $\frac{3}{8}$	N. Nigeria . . .	British Museum (Dr. E. J. Porteous).
♀ 3 $\frac{1}{4}$	1 $\frac{3}{4}$	2	East Africa . . .	Stephenson R. Clarke.

OWNER'S MEASUREMENTS.

5 $\frac{7}{8}$	2 $\frac{1}{4}$	3	Transvaal . . .	C. S. Mann.
♀ 4 $\frac{3}{8}$	2	1 $\frac{11}{16}$	East Africa . . .	Capt. R. S. Hart.



Frontlet and Horns of Waterbuck.

The WATERBUCK (*Cobus ellipsiprymnus*).

Chuzu, Chilala and Chizenga.

Kring-gaat, Boer.

Li Tumogha, Matabili.

Mukulo, Chila.

M'dongoma or *Matutwi*, Barotsi.

Kuru, Swahili.

Tumoga, Bechuana.

Na'Toro, M'Kua.

The waterbucks and their smaller allies the kobs, together with the reedbucks and vaal rhebok, constitute a well-defined group of large or medium-sized African antelopes presenting the following characteristics. They have the muzzle naked, rudimentary face-glands, a moderately long tail, well-developed lateral hoofs, and the horns confined to the bucks. In shape and size the horns are variable, being either long or medium, but never spirally twisted, and always with smooth tips, below which they are ridged; usually they are at first inclined somewhat backwards, after which they are curved upwards and more or less forwards, although they may have a sinuous curvature, and in the vaal rhebok are straight. The upper cheek-teeth are tall and narrow. In the waterbucks and kobs, which include the largest representatives of the

group, there are no naked patches on the head below the ears, the tail is comparatively long, with a slight terminal tuft, and the lateral hoofs are large. A characteristic feature of the skull is the presence of a deep hollow in the forehead. From its allies the true or common waterbuck is recognisable at a glance by the elliptical white ring on the buttocks, which extends downwards to the thighs. Height at shoulder, from 48 to 53 inches. Weight, about 360 lbs. clean.

Distribution.—Africa north of the Limpopo along the eastern coast region as far as the Shebeyli River in Somaliland; thus including Nyasaland and British and German East Africa. Its present strongholds are the districts between the Sabi and Zambesi, the affluents of the latter, and the Chobi, Okavango, and other rivers above Lake Ngami; it occurs locally in Mozambique and Portuguese Amatongaland; but in Barotsiland, N.W. Rhodesia, it is stated to be replaced by the defassa. White waterbuck, with eyes of normal colour, occur on the Guasu-nyero, near the Lorian swamp, B.E. Africa. Numerous local races have been named.

Length on front.	Circumference.	Tip to Tip. ^a	Locality.	Owner.
36 $\frac{1}{4}$	8 $\frac{3}{4}$	20 $\frac{1}{4}$	Delagoa Bay . . .	American National Collection.
35	9 $\frac{3}{4}$	16 $\frac{3}{4}$	Sabi River . . .	Major J. Stevenson Hamilton.
33 $\frac{1}{2}$	9 $\frac{1}{4}$	21 $\frac{1}{2}$	S.E. Africa . . .	Hon. Walter Rothschild.
33	8 $\frac{3}{4}$	22 $\frac{3}{8}$	Nyasaland . . .	Capt. R. Meinertzhagen.
33	9 $\frac{3}{8}$	11 $\frac{1}{2}$	Mashonaland . . .	British Museum (F. C. Selous).
33	8 $\frac{3}{4}$	24	Do. . . .	J. G. Millais.
32 $\frac{3}{4}$	9 $\frac{3}{4}$	21 $\frac{3}{8}$	South Africa . . .	Sir Victor Brooke's Collection.
32 $\frac{5}{8}$	8 $\frac{3}{4}$	25 $\frac{1}{4}$	N. Transvaal . . .	Major F. W. Jarvis.
32 $\frac{1}{2}$	9 $\frac{1}{2}$	29 $\frac{1}{2}$	N.W. Rhodesia . . .	R. T. Coryndon.
32	10	22 $\frac{1}{2}$	Rhodesia . . .	Val Gielgud.
31 $\frac{3}{4}$	9 $\frac{1}{4}$	24	Zululand . . .	Major L. O. Williams.
31 $\frac{3}{4}$	11	18 $\frac{3}{4}$	N.W. Rhodesia . . .	J. H. Leche.
31 $\frac{3}{4}$	8 $\frac{1}{4}$	22 $\frac{1}{2}$	P.E. Africa . . .	British Museum (the late Rowland Ward).
31 $\frac{1}{2}$	9 $\frac{1}{4}$	13 $\frac{1}{4}$	Do. . . .	J. Pinto Leite.
31 $\frac{1}{2}$	9	23 $\frac{1}{4}$	Do. . . .	Sir Owen Philipps.
31 $\frac{1}{4}$	9	16	East Africa . . .	A. Saunderson.
31 $\frac{1}{4}$	10 $\frac{5}{8}$	13 $\frac{5}{8}$	Pungwe . . .	Earl of Dunmore.
31 $\frac{1}{4}$	9 $\frac{5}{8}$	19 $\frac{1}{4}$	South Africa . . .	Sir Edmund G. Loder, Bart.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
31	9½	22	Zululand . . .	R. D. Talbot.
31	9½	15	Rhodesia . . .	A. W. Griffin.
31	8¾	32	Zambesia . . .	R. H. Storey.
31	9½	22	Mashonaland . . .	F. C. Selous.
30¾	9½	27	E.C. Africa . . .	C. E. Dashwood.
30¾	9¼	24¼	Ngamiland . . .	Mervyn G. Williams.
30¾	8	23¼	Pungwe . . .	Col. Lord Douglas Compton.
30¾	8¼	24½	Do.	J. C. Phillips.
30½	8¾	25	Nyasaland . . .	S. Robins.
29¾	9	15¼	Rhodesia . . .	C. W. Adams.
29¾	8¾	25	East Africa . . .	J. Giffard.
29	9	10	P.E. Africa . . .	R. Elliott-Cooper.
29	8½	32¾	Do.	Rhys Williams.
29	9½	26	East Africa . . .	E. Gedge.
29	9	23¾	S.E. Africa . . .	R. E. Critchley-Salmonson.
29	9½	16½	East Africa . . .	Col. W. H. Williams.
28¾	8½	23	Lake Baringo . . .	H. Hyde-Baker.
28¾	8¼	8½	P.E. Africa . . .	Capt. R. A. McClymont.
28¾	10½	13¼	Rhodesia . . .	Dr. Sauer.
28½	10½	22½	Do.	W. Harcourt Webb.
28½	10	15½	S.E. Africa . . .	H. W. Elliott.
28½	9¼	20¾	N.E. Rhodesia . . .	F. H. Melland.
28½	9¾	10	East Africa . . .	G. de P. Colville.
27¾	8	18	Somaliland . . .	A. E. Butter.
27	8¾	21¼	Gallaland . . .	Ivor Buxton.

OWNER'S MEASUREMENTS.

36¾	...	39	?	C. S. Mann.
35¼	9	14	?	Mr. Justice Hopley.
34½	...	...	Limpopo Valley, S.E. Africa	H. T. and A. H. Glynn.
33	8¾	17¼	Do.	A. Ohlsson.
31¾	8¼	21¾	North of Pungwe . . .	Count E. Hoyos.
31½	9	17	?	Sir Abe Bailey.



Skull and Horns of Defassa Waterbuck, in the Tervueren Museum.

The DEFASSA or SING-SING WATERBUCK (*Cobus defassa*).

Defassa, Abyssinian.

Gürümes, Galla.

Nsama, Waganda.

Pior, Dinka.

Katambur, Sudani.

Kuru, Swahili.

Distinguished from the typical waterbuck by the general presence of a large white patch on the lower part of the buttocks, instead of a white elliptical ring extending higher up. Several local races of this species have been named. Among these, the West African or sing-sing (*C. d. unctuosus*), of Senegal, Nigeria, etc., is characterised by its rufous colour and the small amount of white in the region of the eye; Crawshay's defassa (*C. d. crawshayi*), from Nyasaland, has a dusky coloration and shorter horns; while in the Angola defassa (*C. d. penricei*), from the interior of Benguela, Angola, the general colour is so dark as to appear almost black at a distance. Then follows the typical Abyssinian defassa (*C. d. typicus*), from Western Abyssinia, but generally stated to extend through Sennar, Kordofan, and the valley of the White

Nile to British and German East Africa. The ears are longer and more pointed, and there is more white in the region of the eye than in the preceding races; the general colour being brownish rufous. Nearly allied are *C. d. matschiei* of Lake Abaya and *C. d. ugandæ*, of Uganda; the latter characterised by its bright rufous colour, especially on the forehead, and having the finest horns of all. Many other names have been given to local forms.

A.—**ABYSSINIAN DEFASSA** (*C. defassa typicus*).¹

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
34 $\frac{1}{4}$	8 $\frac{1}{4}$	18	White Nile . . .	G. W. Egerton.
33 $\frac{1}{2}$	...	...	Bahr-el-Ghazal . . .	A. L. Butler.
33 $\frac{1}{2}$	8 $\frac{1}{2}$	32 $\frac{1}{2}$	G. E. Africa . . .	S. E. White.
33 $\frac{1}{4}$	8 $\frac{1}{4}$	25 $\frac{1}{2}$	Sudan . . .	Capt. C. E. Hills.
33 $\frac{1}{4}$	8 $\frac{1}{2}$	19 $\frac{3}{4}$	Pibor River . . .	Capt. H. V. Venables Kyrke.
33	8	17	Sudan . . .	Lord Desborough.
33	9	31 $\frac{1}{2}$	East Africa . . .	J. Jay White.
32 $\frac{3}{4}$	8 $\frac{3}{4}$	22	Do. . . .	Hon. H. Brougham.
32 $\frac{3}{4}$	8 $\frac{1}{2}$	21 $\frac{1}{4}$	Sudan . . .	N. C. Cockburn.
32 $\frac{1}{2}$	8 $\frac{1}{4}$	18 $\frac{1}{4}$	Bahr-el-Ghazal . . .	R. Colville.
32 $\frac{1}{2}$	9	18 $\frac{3}{4}$	Do. . . .	Capt. E. P. Blencowe.
32 $\frac{1}{2}$	8 $\frac{3}{4}$	25 $\frac{3}{4}$	Do. . . .	Sir Robert Harvey, Bart.
32 $\frac{1}{2}$	8 $\frac{1}{2}$	18	Sudan . . .	Major P. M. Dove.
32 $\frac{1}{4}$	8 $\frac{3}{4}$	20 $\frac{1}{4}$	Do. . . .	A. J. Grieve.
32 $\frac{1}{4}$	8 $\frac{5}{8}$	30	East Africa . . .	Baron M. de Rothschild.
32 $\frac{1}{4}$	8 $\frac{3}{4}$	24 $\frac{3}{4}$	Dinder Valley . . .	C. E. Russell.
32 $\frac{1}{4}$	9 $\frac{1}{4}$	17 $\frac{3}{4}$	Abyssinia Border . . .	Capt. J. A. Pollock.
32 $\frac{1}{4}$	8	20 $\frac{1}{2}$	Sudan . . .	Lieut.-Gen. Sir B. T. Mahon.
32	9	22 $\frac{1}{2}$	Bahr-el-Ghazal . . .	Lieut.-Col. G. Christian.
32	9	20	Sudan . . .	Major C. S. Cumberland.
32	9	26 $\frac{3}{4}$	Do. . . .	C. E. Oakley.
31 $\frac{3}{4}$	8 $\frac{3}{4}$	16 $\frac{1}{2}$	Do. . . .	Capt. J. P. V. Hawksley.
31 $\frac{1}{2}$	8	15 $\frac{1}{4}$	Do. . . .	F. W. Greswolde-Williams.
31 $\frac{3}{8}$	8	20 $\frac{3}{4}$	Do. . . .	S. H. Whitbread.
31 $\frac{1}{4}$	10 $\frac{1}{4}$	22 $\frac{3}{4}$	East Africa . . .	E. H. Litchfield.
31 $\frac{1}{4}$	9 $\frac{3}{4}$	11 $\frac{3}{4}$	Do. . . .	Major G. A. Swinton Home.
31 $\frac{1}{4}$	7 $\frac{1}{4}$	24	Sudan . . .	Capt. E. C. Hamilton.
31	9	20	East Africa . . .	B. Dominick.
31	8 $\frac{1}{2}$	17 $\frac{1}{2}$	Sudan . . .	Earl of Kingston.
31	8 $\frac{1}{2}$	14 $\frac{3}{4}$	Do. . . .	Lieut.-Col. J. W. Yardley.
31	9 $\frac{3}{4}$	18 $\frac{1}{2}$	East Africa . . .	N. E. F. Corbet.
30 $\frac{3}{4}$	8 $\frac{1}{2}$	34	Sudan . . .	W. F. Wailes-Fairbairn.
30 $\frac{3}{4}$	9 $\frac{1}{2}$	15	Do. . . .	E. M. Tabor.

— Owner's measurements.

¹ Inclusive of the large number of local forms named by Dr. Matschie.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
30 $\frac{3}{4}$	11	28 $\frac{1}{2}$	East Africa . . .	W. N. McMillan.
30 $\frac{3}{4}$	10	12 $\frac{3}{4}$	Do.	Duke of Alba.
30 $\frac{3}{4}$	10 $\frac{1}{4}$	20 $\frac{3}{4}$	Do.	H. Sampson.
30 $\frac{3}{4}$	8 $\frac{1}{2}$	24	Dinder Valley . . .	Lord Villiers.
30 $\frac{3}{4}$	8 $\frac{3}{4}$	20	Sudan	Capt. Lord R. Innes-Ker.
30 $\frac{1}{2}$	8 $\frac{3}{4}$	21	?	N. E. Waterfield.
30 $\frac{1}{2}$	10	16	East Africa . . .	H. G. Watson.
30 $\frac{1}{2}$	8 $\frac{1}{2}$	17 $\frac{1}{2}$	Sudan	W. D. Roberts.
30 $\frac{1}{2}$	8 $\frac{3}{4}$	9 $\frac{1}{2}$	Do.	N. Macklin.
30 $\frac{1}{2}$	9 $\frac{1}{4}$	15 $\frac{1}{2}$	Do.	Major F. F. Carroll.
30 $\frac{1}{2}$	8 $\frac{3}{4}$	25	East Africa . . .	Earl of Warwick.
30 $\frac{1}{2}$	9 $\frac{3}{8}$	16	Do.	Capt. H. C. S. Ashton.
30 $\frac{1}{2}$	9 $\frac{1}{4}$	14 $\frac{3}{4}$	Do.	J. G. Millais.
30 $\frac{1}{2}$	8 $\frac{1}{4}$	19 $\frac{1}{2}$	Sudan	Major R. M. Sanders.
30 $\frac{1}{4}$	8 $\frac{1}{2}$	28 $\frac{3}{4}$	Do.	R. H. Willan.
30 $\frac{1}{4}$	8	18 $\frac{1}{2}$	Do.	Col. A. Colville.
30 $\frac{1}{4}$	8	19 $\frac{1}{2}$	Do.	W. Mure.
30 $\frac{1}{4}$	10	21 $\frac{3}{4}$	East Africa . . .	Gerard Buxton.
30 $\frac{1}{4}$	9 $\frac{1}{2}$	13 $\frac{3}{8}$	Do.	Capt. R. Clemm.
30 $\frac{1}{4}$	9 $\frac{3}{4}$	12 $\frac{1}{2}$	Do.	G. P. L. Cosens.
30	8 $\frac{1}{4}$	18	Sudan	R. McD. Hawker.
30	8 $\frac{1}{2}$	30 $\frac{1}{2}$	Do.	Capt. O. C. Downes.
30	8 $\frac{1}{2}$	21	Do.	Capt. G. S. Nickerson.
30	8 $\frac{3}{4}$	16	Do.	Capt. H. Craufurd.
30	9	12	East Africa . . .	Duke of Medinaceli.
30	10 $\frac{1}{4}$	15	Do.	R. B. Loder.
30	9 $\frac{1}{2}$	18	Do.	Sutton Timmis.
30	8	10 $\frac{1}{4}$	Do.	H. Fowler.
30	8 $\frac{1}{4}$	21 $\frac{1}{4}$	Sudan	C. C. Branch.
30	9 $\frac{3}{4}$	12	Do.	W. R. Rhinelanders Stewart.
29 $\frac{3}{4}$	9 $\frac{1}{2}$	14 $\frac{1}{2}$	East Africa . . .	S. S. Steel.
29 $\frac{3}{4}$	9 $\frac{1}{4}$	20 $\frac{1}{4}$	Do.	A. G. Murray Smith.
29 $\frac{3}{4}$	8 $\frac{1}{2}$	21 $\frac{1}{2}$	Do.	F. C. Havemeyer.
29 $\frac{3}{4}$	8 $\frac{3}{4}$	15 $\frac{1}{4}$	Sudan	Major A. J. B. Percival.
29 $\frac{3}{4}$	8 $\frac{3}{4}$	18	Do.	Capt. E. S. Stephenson.
29 $\frac{3}{4}$	8 $\frac{1}{4}$	12	Do.	G. Munn.
29 $\frac{3}{4}$	8 $\frac{3}{4}$	16 $\frac{3}{4}$	Do.	C. A. Munn.
29 $\frac{3}{4}$	8 $\frac{1}{4}$	21 $\frac{1}{2}$	Do.	Capt. R. F. Balfour.
29 $\frac{3}{4}$	9 $\frac{1}{4}$	23 $\frac{1}{4}$	Do.	W. H. Lindsay.
29 $\frac{1}{2}$	8 $\frac{3}{4}$	17	Do.	Capt. C. Leigh.
29 $\frac{1}{2}$	8 $\frac{3}{4}$	18 $\frac{3}{8}$	Do.	Capt. the Hon. M. P. Macnaghten.
29 $\frac{1}{2}$	9 $\frac{1}{2}$	18 $\frac{3}{4}$	Do.	Capt. J. G. A. Massy.
29 $\frac{1}{2}$	10	20	East Africa . . .	O. Mosley.
29 $\frac{1}{2}$	9	19 $\frac{1}{2}$	Do.	G. P. Gough.
29 $\frac{1}{2}$	8 $\frac{3}{4}$	15	Do.	W. Sewall.
29 $\frac{1}{2}$	10	15 $\frac{1}{2}$	Do.	Capt. M. L. Pears.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
29½	9	17¼	East Africa . . .	A. Vonwiller.
29½	9½	19¾	Do. . . .	G. de P. Colvile.
29½	9	22	Sudan	Major C. P. B. Wood.
29½	8	21	Do. . . .	C. R. Gurney.
29¾	7¾	33	Do. . . .	Major the Hon. H. Fraser.
29¾	8½	16½	Do. . . .	F. L. Slade.
29¾	9¼	24	Do. . . .	Capt. P. M. Larken.
29¾	9¾	19	Do. . . .	Norman B. Smith.
29¾	8	10¾	Do. . . .	H. W. Thornton.
29¾	9	21½	Do. . . .	A. Robinson.
29¾	8½	23¼	Do. . . .	C. D. Eyre.
29¾	9	17	East Africa . . .	Sir Kenneth Crossley.
29¾	9	19½	Do. . . .	Viscount Ennismore.
29¾	9½	21¾	Do. . . .	Sir H. Seton Karr.

B.—UGANDA DEFASSA (*C. defassa ugandæ*).

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
37¾	8¾	25¾	Kivu District . . .	Tervueren Museum. (See illustration.)
36¾	9¾	36	Nr. Lake Albert Edward .	A. F. R. Wollaston.
36¾	9	20½	Do. . . .	F. A. Knowles.
36¾	8½	19½	Semliki Valley . . .	Duke of Peneranda.
¹ 35½	10½	22½	Uganda	Major de Courcy Ireland.
35	9¼	29¾	Lake George	Col. C. F. Blane.
34¾	9½	22½	Do. . . .	Dr. H. B. Owen.
34¾	9½	35½	Semliki Valley . . .	The late G. G. Longden.
34¾	8¾	27	Uganda	British Museum (Sir F. J. Jackson).
34¾	10¾	18¼	Edward Nyanza . . .	Major P. H. G. Powell-Cotton.
34¼	10	32	Uganda	Capt. R. H. Leeke.
34¼	10¼	23½	Semliki Valley . . .	Hon. G. Legge.
34¼	9½	31¼	Uganda	Douglas M'Douall.
34½	8¾	20¼	Toru, Uganda . . .	British Museum (Sir H. H. Johnston).
33¾	8½	27¾	Do. . . .	Sir F. J. Jackson.
33½	9¾	17	Lado	Major P. H. G. Powell-Cotton.
33¼	10	29¾	Semliki Valley . . .	G. Blaine.
33¼	9	19½	Uganda	E. Canaple.
33¼	9½	22¾	Do. . . .	Hon. Walter Rothschild.
32¾	9	18¾	Do. . . .	H. Twyford.
32½	8¼	27¼	Semliki Valley . . .	Col. R. Bright.
32¼	10½	18	E. Congo	Hon. M. W. Elphinstone.
32½	9	19½	Edward Nyanza . . .	Mrs. P. H. G. Powell-Cotton.
32	9¾	22	Semliki Valley . . .	R. de la Huerta.
31¾	9	21	Do. . . .	Major R. A. Markham.
31¼	10	26¼	Do. . . .	D. Carruthers.
31¼	9½	21	Gondokoro	Major A. W. Jennings Bramly.

¹ In collection of Sir Hy. E. M. James.

C.—RHODESIAN DEFASSA (*C. defassa crawshayi*).*Idcitwi*, Barotsi.*Ingonduma*, Matoko.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
29	9	22	Lake Mweru . . .	Hon. Walter Rothschild.
27 $\frac{3}{4}$	8 $\frac{1}{4}$	20	N.W. Rhodesia . . .	Capt. C. G. Leslie.
27 $\frac{1}{2}$	7 $\frac{3}{4}$	12 $\frac{1}{2}$	N.E. Rhodesia . . .	G. Sandeman.
27 $\frac{1}{2}$	9	12	Do.	P. M. Stewart.
27 $\frac{1}{4}$	8	16 $\frac{3}{4}$	Lake Mweru	K. C. North.
27	9 $\frac{1}{4}$	17 $\frac{1}{2}$	Do.	Capt. H. E. Hambro.
27	9 $\frac{3}{4}$	12	N.W. Rhodesia	Capt. J. F. Laycock.
27	8 $\frac{3}{8}$	17 $\frac{3}{8}$	N.E. Rhodesia	W. A. Conduitt.
26 $\frac{7}{8}$	8 $\frac{3}{4}$	13 $\frac{3}{4}$	Do.	Capt. L. E. H. Molyneux-Seel.
26 $\frac{3}{4}$	9	13 $\frac{1}{2}$	Nyasaland	L. H. Cripps.
26 $\frac{3}{4}$	9	15 $\frac{1}{4}$	N.E. Rhodesia	Major L. Boyd-Moss.

D.—WESTERN DEFASSA, or SING-SING (*C. defassa unctuosus*).*Dadoko* and *Gwombaza*, Hausa.*Sing-sing*, Gambian.

Height at shoulder, 47 to 48 ins.

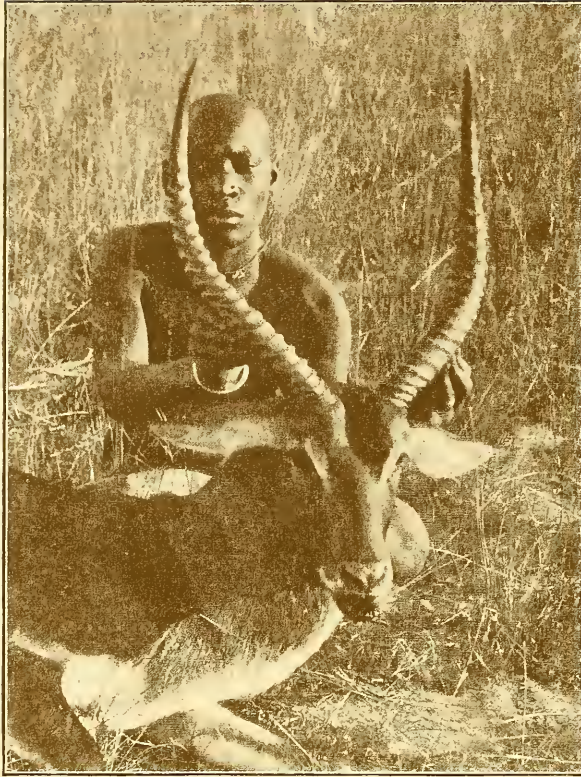
Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
31 $\frac{1}{2}$	10 $\frac{1}{4}$	19 $\frac{3}{4}$	Sierra Leone	C. Cary Barnard.
29 $\frac{3}{4}$	8 $\frac{3}{8}$	21 $\frac{3}{4}$	N. Nigeria	Capt. N. K. Street.
29 $\frac{1}{2}$	7 $\frac{1}{4}$	23	Nigeria	Maj.-Gen. P. S. Wilkinson.
29 $\frac{1}{2}$	8 $\frac{1}{4}$	17 $\frac{1}{2}$	Do.	R. Marmion.
28 $\frac{1}{2}$	8 $\frac{1}{4}$	19 $\frac{1}{4}$	Do.	Capt. A. C. Aubin.
28 $\frac{1}{2}$	8	18 $\frac{3}{4}$	Do.	Capt. H. T. G. Moore.
28	8	17 $\frac{1}{4}$	Sierra Leone	Major W. Gillman.
27 $\frac{3}{4}$	8	15	Gambia	H. North.
27 $\frac{3}{8}$	8 $\frac{1}{4}$	17 $\frac{1}{4}$	Nigeria	W. F. Gowers.
27 $\frac{1}{2}$	7 $\frac{1}{2}$	12	Do.	Lady Constance Stewart Richardson.
27	8	14 $\frac{1}{4}$	Do.	Capt. W. H. Wilkin.
26 $\frac{1}{2}$	8	17 $\frac{1}{4}$	Senegambia	G. Fenwick Owen.
26 $\frac{1}{4}$	7	19 $\frac{1}{4}$	Gold Coast	Capt. P. J. Mackesy.
26	7 $\frac{1}{2}$	19 $\frac{1}{4}$	Nigeria	Major E. M. Baker.

E.—ANGOLA DEFASSA (*C. defassa penricei*).

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
29	8 $\frac{3}{4}$	18 $\frac{1}{2}$	Benguela	G. W. Penrice.
28 $\frac{3}{4}$	7 $\frac{1}{4}$	9 $\frac{3}{4}$	Do.	Major Boyd A. Cuninghame.
25 $\frac{1}{4}$	8 $\frac{3}{4}$	10 $\frac{3}{4}$	Do.	W. C. Neilson.
24 $\frac{1}{2}$	8	9 $\frac{1}{8}$	Do.	Hon. Walter Rothschild.

OWNER'S MEASUREMENTS

28 $\frac{1}{2}$	8 $\frac{3}{4}$	20	Benguela	E. P. Cooper.
28 $\frac{1}{4}$	8 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	A. Ohlsson.



Head and Fore-quarters of Lechwe. From a photograph by Mr. Poulett-Weatherley.

The LECHWE (*Cobus* [*Onotragus*] *leche*).

Umbundu, Angola.

Lechi or *Li-gwi*, Makololo.

Lechwi, Barotsi and Ngami.

Inya, Masubia.

Mumembi (male), *Ngia* (female),

Unya, Makuba.

Chilala and Chibisa.

Bainanja, Mushu Kulumbwi.

Nainja, Chila.

In this antelope the horns are relatively long, considerably exceeding twice the length of the head, and show a tendency to a double curvature; the front of the fore-legs is black, and the hair is long and coarse. Height at shoulder, 40 or 41 inches.

Like the puku, this antelope was discovered by Livingstone and his companions Oswell and Murray during their journey to Lake Ngami in 1849. In point of size it approximates to the true waterbucks.

The general colour is fulvous, of a lighter tint than in the Uganda kob.

Seldom found very far from water, this antelope is most abundant in the lagoons and swamps formed by the annual rising of the Upper Zambesi, the Botletli, Chobi, Tamulakan, and other rivers of the interior, in localities where the surrounding flats are inundated for some part of the year. Lechwe seldom venture into the deep rivers from fear of the crocodiles, but frequent the reed-beds, shallow lagoons, and flooded flats, and in the less accessible regions frequently occur in vast herds. Excellent swimmers they progress by a succession of splashing bounds at great speed through the lagoons and shallows. They are extremely tenacious of life.

Distribution.—Zambesia, Barotsiland, and Nyasaland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
34 $\frac{7}{8}$	8 $\frac{1}{2}$	14 $\frac{5}{8}$	N.W. Rhodesia . . .	O. C. Bevan.
33	9	19 $\frac{1}{4}$	Do. . . .	Major G. A. Swinton Home.
33	8 $\frac{1}{2}$	26	Do. . . .	Major P. G. A. Cox.
32 $\frac{3}{8}$	8	29 $\frac{1}{4}$	Do. . . .	R. C. Wood.
32 $\frac{1}{4}$	7 $\frac{3}{4}$	19 $\frac{3}{4}$	Do. . . .	G. L. Harrison.
32 $\frac{1}{4}$	8 $\frac{1}{4}$	18 $\frac{1}{4}$	Do. . . .	Earl of Kingston.
32 $\frac{1}{4}$	9 $\frac{1}{4}$	26 $\frac{1}{2}$	Do. . . .	C. M. Rolker.
31 $\frac{1}{2}$	8	22	Do. . . .	Hon. Guy Wilson.
31 $\frac{1}{2}$	7	18	Do. . . .	Col. C. Harding.
31 $\frac{1}{2}$	8	19 $\frac{3}{8}$	Do. . . .	Capt. A. Willis.
31 $\frac{1}{2}$	8 $\frac{3}{4}$	21 $\frac{1}{2}$	Do. . . .	Major G. J. Fitzgerald.
31 $\frac{1}{4}$	8 $\frac{3}{8}$	24 $\frac{1}{2}$	Do. . . .	Capt. F. W. Reichwald.
31 $\frac{1}{4}$	8 $\frac{1}{4}$	22 $\frac{1}{4}$	Do. . . .	Capt. F. O. Grenfell.
31	8	18 $\frac{1}{2}$	Do. . . .	A. de L. Long.
31	8 $\frac{1}{4}$	23 $\frac{1}{4}$	Do. . . .	W. H. Rawnsley.
31	8 $\frac{3}{4}$	13	Do. . . .	P. K. Glazebrook.
30 $\frac{3}{4}$	8	25 $\frac{1}{4}$	Do. . . .	G. de P. Colvile.
30 $\frac{1}{2}$	8	18 $\frac{3}{4}$	Do. . . .	Lieut.-Col. R. W. R. Barnes.
30 $\frac{1}{2}$	7 $\frac{7}{8}$	25 $\frac{3}{4}$	Do. . . .	H. M. P. Hewett.
30 $\frac{2}{5}$	8 $\frac{1}{5}$	19 $\frac{1}{4}$	Do. . . .	Sir Edmund G. Loder, Bart.
30 $\frac{1}{4}$	8	20 $\frac{3}{4}$	Do. . . .	Capt. R. A. McClymont.
30 $\frac{1}{4}$	8 $\frac{1}{2}$	21 $\frac{1}{4}$	Do. . . .	G. F. Watherston.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
30 $\frac{1}{4}$	8	19 $\frac{1}{2}$	N.W. Rhodesia . . .	Capt. Viscount Bury.
30	8	25 $\frac{3}{4}$	Do. . . .	V. F. Bishop.
30	8 $\frac{1}{4}$	20 $\frac{1}{2}$	Nyasaland	J. H. Hayes.
29 $\frac{3}{4}$	8 $\frac{1}{2}$	18 $\frac{3}{4}$	N.W. Rhodesia . . .	Capt. G. M. Lumsden.
29 $\frac{3}{4}$	8	20 $\frac{3}{4}$	Do. . . .	Duke of Westminster.
29 $\frac{1}{2}$	8 $\frac{1}{4}$	17 $\frac{1}{4}$	Do. . . .	B. Ryan.
29 $\frac{3}{8}$	7 $\frac{3}{4}$	15 $\frac{3}{4}$	Do. . . .	Sir J. Walton, Bart.
29 $\frac{1}{4}$	8 $\frac{1}{4}$	20 $\frac{1}{2}$	Do. . . .	Major J. Carden.
29	8	19 $\frac{1}{4}$	Do. . . .	P. B. Vander Byl.
29	8	16 $\frac{1}{2}$	Do. . . .	Col. Lord Douglas Compton.
28 $\frac{3}{4}$	8	28 $\frac{1}{2}$	Do. . . .	R. T. Coryndon.
28 $\frac{3}{4}$	7 $\frac{1}{4}$	12 $\frac{1}{2}$	Do. . . .	H. H. Williams.
28 $\frac{3}{4}$	8	18	Do. . . .	Capt. P. R. Bald.
28 $\frac{3}{4}$	8 $\frac{1}{4}$	16	Do. . . .	T. D. M. Cardeza.
28 $\frac{3}{4}$	7 $\frac{1}{2}$	21	Do. . . .	Capt. the Hon. G. H. Douglas-Pennant.
28 $\frac{3}{4}$	8	28	Do. . . .	Capt. J. F. Laycock.
28 $\frac{3}{4}$	8 $\frac{1}{4}$	26 $\frac{1}{2}$	Do. . . .	Hon. Mrs. Guy Wilson.
28 $\frac{1}{2}$	6 $\frac{1}{2}$	18	Do. . . .	Dr. Russell.
28 $\frac{1}{2}$	8	17 $\frac{3}{4}$	Do. . . .	R. D. Waterhouse.
28	7 $\frac{1}{2}$	17 $\frac{1}{4}$	Do. . . .	R. Beaumont.
27 $\frac{3}{4}$	8	6	Ngamiland	A. G. Stigand.
27 $\frac{1}{2}$	7 $\frac{1}{2}$	14 $\frac{1}{2}$	Do. . . .	F. T. Garbutt.
27 $\frac{1}{2}$	10 $\frac{3}{4}$	19 $\frac{1}{2}$	Chobi Valley	British Museum (F. C. Selous).
27 $\frac{1}{2}$	8	20 $\frac{1}{2}$	N.W. Rhodesia . . .	Lord H. Seymour.
27 $\frac{1}{2}$	8	17 $\frac{1}{2}$	Chobi Valley	R. Campbell Heathcote.
27 $\frac{1}{2}$	8 $\frac{3}{4}$	12	Do. . . .	Capt. C. G. Leslie.

OWNER'S MEASUREMENTS.

34 $\frac{1}{8}$	8 $\frac{1}{4}$	17	N.W. Rhodesia . . .	A. Faulkener.
33 $\frac{1}{2}$	7	26 $\frac{3}{4}$	Lake Bangweolo . . .	Poulett-Weatherley.
33 $\frac{1}{4}$	...	27	N.W. Rhodesia . . .	Major W. Q. Winwood.

In the *Field* of September 17, 1910 (vol. cxvi. p. 551), Mr. H. W. Martin states that he once came across a herd of white lechwe with black points, of which one was killed, but the skin subsequently lost. The locality is not mentioned.



Head of Black Lechwe.

The BLACK LECHWE (*Cobus* [*Onotragus*] *smithemani*).

Nearly allied to the last, of which it may be only a local race, but the upper-parts of adult males blackish brown, and the horns with a more distinct double curvature.

Distribution.—Lake Mweru district, and thence to Lake Bangweolo, North-east Rhodesia. A North Rhodesian black lechwe has been separated as *C. robertsi*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
29 $\frac{3}{8}$	7 $\frac{5}{8}$	19	N.E. Rhodesia . . .	J. E. Hughes.
25 $\frac{1}{4}$	7	19 $\frac{1}{2}$	Do.	P. M. Stewart.
24 $\frac{3}{8}$	7 $\frac{1}{4}$	15	Do.	C. S. Mann.
24 $\frac{1}{4}$	7	14 $\frac{1}{2}$	Lake Bangweolo . . .	Claude Francis.
23 $\frac{3}{4}$	7 $\frac{1}{2}$	20 $\frac{3}{4}$	Do.	Earl of Kingston.
23 $\frac{1}{2}$	7 $\frac{1}{2}$	12 $\frac{3}{8}$	Do.	Major L. Boyd-Moss.
23 $\frac{1}{2}$	7 $\frac{1}{4}$	13 $\frac{1}{4}$	Do.	Capt. S. H. Christy.
23 $\frac{1}{2}$	6 $\frac{3}{4}$	22 $\frac{3}{4}$	Do.	J. Turner.
23 $\frac{1}{4}$	7 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	Hon. W. Guinness.
23 $\frac{1}{4}$	7	13 $\frac{1}{2}$	Do.	W. A. Conduitt.
23 $\frac{1}{4}$	5 $\frac{7}{8}$	11 $\frac{7}{8}$	Do.	Hon. Walter Rothschild.
23 $\frac{1}{4}$	6 $\frac{1}{4}$	17	Do.	P. K. Glazebrook.
22 $\frac{3}{4}$	6 $\frac{1}{2}$	13 $\frac{3}{4}$	N.E. Rhodesia . . .	R. Hayne.
22 $\frac{3}{4}$	7 $\frac{1}{4}$	17 $\frac{1}{4}$	Do.	A. de L. Long.
22 $\frac{3}{4}$	6 $\frac{3}{4}$	11 $\frac{1}{4}$	Do.	G. F. Watherston.
22 $\frac{3}{4}$	6 $\frac{3}{4}$	15 $\frac{1}{2}$	Do.	F. H. Melland.
22	7	16	Do.	Capt. J. Harington.
22	7 $\frac{1}{2}$	11 $\frac{3}{8}$	Do.	O. L. Beringer.

- Owner's measurements.



Head of Mrs. Gray's Lechwe.

MRS. GRAY'S LECHWE (*Cobus* [*Onotragus*] *maria*).

This handsome species is distinguished by the long, slender, doubly curved horns, ridged nearly to the tips, and the blackish brown body-colour of the old bucks; the dark colour being relieved by a whitish patch in front of the withers, the yellowish white ears, a yellowish white patch in front of and behind each eye, and the yellowish muzzle, chin, and lower part of the throat. The limbs and much of the underparts are wholly dark-coloured. Coat long and rough. Height at shoulder, about 38 inches. Young males and females of all ages are chestnut-coloured.

It seems not improbable that Mrs. Gray's lechwe is the supreme development of the lechwe stock (with which it agrees in its long, rough coat); thus occupying a position analogous to that held by the white-eared kob as compared with Buffon's kob. The black lechwe forms in some respect a connecting link between the true lechwe and

the present animal, in which the extreme blackness is doubtless due to the hot, moist climate of the Bahr-el-Ghazal.

Distribution.—The swamps bordering the White Nile and its tributaries.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
34 $\frac{1}{4}$	6 $\frac{7}{8}$	24	Sudan	J. C. Phillips.
—33 $\frac{1}{2}$	...	...	Do.	Lieut. W. Scott-Hill, R.N.
32 $\frac{3}{4}$	6 $\frac{1}{4}$	18	Do.	Col. A. Colville.
—32 $\frac{3}{8}$	...	...	Do.	C. S. Mann.
32 $\frac{1}{4}$	7 $\frac{1}{4}$	16 $\frac{1}{4}$	Do.	Sir Abe Bailey.
32	6 $\frac{7}{8}$	...	Near Junction of Bahr-el-Gebel and White Nile	Major H. N. Dunn.
31 $\frac{3}{8}$	6 $\frac{1}{4}$	19 $\frac{1}{4}$	?	R. H. Willan.
—31 $\frac{1}{4}$	7 $\frac{3}{8}$	18 $\frac{1}{2}$	Bahr-el-Ghazal	Sir W. Garstin.
31 $\frac{1}{8}$	6 $\frac{3}{4}$	11 $\frac{3}{4}$	Do.	Norman B. Smith.
31	7 $\frac{1}{2}$	19 $\frac{1}{2}$	Sobat-Pibor District . .	Capt. J. A. Pollock.
31	6 $\frac{1}{4}$	21 $\frac{1}{2}$	?	Col. J. J. Asser.
30 $\frac{3}{4}$	7	21 $\frac{1}{4}$	Bahr-el-Ghazal	Capt. A. H. Vivian.
30 $\frac{5}{8}$	7	14	Do.	Capt. H. Gordon.
30 $\frac{1}{2}$	7	9	Do.	R. A. Colvin.
30 $\frac{1}{4}$	7	14 $\frac{3}{4}$	Bahr-el-Zaref	Capt. C. E. Hills.
30	7	14 $\frac{1}{2}$	Do.	Major W. H. Drake.
30	6 $\frac{1}{2}$	14 $\frac{1}{2}$	Do.	H. St. C. Garrod.
29 $\frac{3}{4}$	6 $\frac{1}{2}$	10 $\frac{1}{4}$	White Nile	Major P. M. Dove.
29 $\frac{3}{4}$	7 $\frac{5}{8}$	17 $\frac{3}{4}$	Do.	Countess of Sefton.
29 $\frac{3}{4}$	6 $\frac{1}{4}$	12	Do.	Hon. Walter Rothschild.
29 $\frac{1}{2}$	7 $\frac{1}{4}$	16	Do.	C. H. Goschen.
29 $\frac{1}{4}$	7 $\frac{1}{8}$	19 $\frac{1}{4}$	Do.	Major A. W. Jennings Bramly.
29 $\frac{1}{2}$	7 $\frac{1}{2}$	...	Do.	N. C. Cockburn.
29 $\frac{1}{4}$	7 $\frac{1}{4}$	17 $\frac{1}{4}$	Sudan	Capt. C. Hankey.
29 $\frac{1}{4}$	7	20 $\frac{3}{4}$	Do.	Duke of Alba.
29 $\frac{1}{4}$	6 $\frac{5}{8}$	12 $\frac{5}{8}$	Do.	G. L. Wingfield.
29	7 $\frac{3}{4}$	12 $\frac{3}{4}$	Do.	Col. E. G. T. Bainbridge.
29	7	16	Tonga Island, White Nile	Col. W. Hayes-Sadler.
29	7	24 $\frac{1}{2}$	Sudan	G. W. Egerton.

— Owner's measurements.



Head of Western Kob. Shot by Lady Constance Stewart Richardson in Nigeria.

THE KOB (*Cobus* [*Adenota*] *cob*).

Maria, Hausa.

There is little doubt of the existence of a more or less complete gradation from the wholly fulvous typical or Buffon's kob to the white-eared kob, in which the general colour of old bucks is blackish brown. The simpler form and smaller size of the horns affords a sufficient distinction from *C. maria*.

Distribution.—The Forest Zone and Swamps of the White Nile.

A.—**WESTERN RACES** (*C. cob typicus*), etc.¹

This race has the back of the ears rufous like the body: the horns are less than twice the length of the head, the hair is short, and the front of the fore-legs black. The approximate height at the shoulder is from 32 to 35 inches.

Distribution.—Gambia to Nigeria and Lake Chad district.

¹ Several allied races have been described from the Lake Chad (Shari) district, which are included under the present heading.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
22 $\frac{1}{4}$	7	11 $\frac{3}{4}$	N. Nigeria . . .	Major E. M. Baker.
22 $\frac{3}{8}$	7 $\frac{3}{8}$	7 $\frac{3}{4}$	Do. . . .	Capt. G. Bonham-Carter.
22	6 $\frac{1}{2}$	11 $\frac{3}{4}$	Do. . . .	E. H. M. Bennett.
21 $\frac{3}{4}$	7 $\frac{3}{4}$	10	Do. . . .	J. Goad Adams.
21 $\frac{1}{2}$	7 $\frac{1}{4}$	9 $\frac{1}{4}$	Do. . . .	Capt. L. C. Brodie.
21	6 $\frac{1}{2}$	8 $\frac{1}{4}$	Do. . . .	Dr. C. W. O'Keefe.
21	6	14 $\frac{1}{4}$	Do. . . .	Lady Constance Stewart Richardson.
20 $\frac{5}{8}$	6 $\frac{1}{2}$	9 $\frac{3}{4}$	French Congo . .	W. S. Race.
20 $\frac{1}{2}$	6 $\frac{3}{4}$	10 $\frac{1}{2}$	Nigeria	Capt. W. H. Wilkin.
20 $\frac{1}{2}$	7 $\frac{1}{4}$	10	Lake Chad . . .	Capt. L. C. Jackson.
-20 $\frac{1}{2}$	7	7 $\frac{1}{2}$	Nigeria	Capt. P. Chapman.
20 $\frac{1}{4}$	6 $\frac{1}{4}$	12 $\frac{1}{4}$	Do.	Capt. A. B. Baillie-Hamilton.
20	7	7	Do.	W. F. Gowers.
20	7	7 $\frac{3}{4}$	Do.	Sir E. Stewart Richardson, Bart.
20	6 $\frac{5}{8}$	6 $\frac{3}{4}$	Lake Chad . . .	Sir Edmund G. Loder, Bart.
20	7 $\frac{3}{8}$	14 $\frac{1}{2}$	Do.	Major J. B. Cockburn.
20	7	10 $\frac{1}{8}$	Nigeria	C. S. Burnett.
19 $\frac{3}{4}$	7	3 $\frac{1}{4}$	Do.	Major Lord J. S. Cavendish.
19 $\frac{3}{4}$	7 $\frac{3}{8}$	9	Lake Chad . . .	Maj.-Gen. T. L. N. Morland.
19 $\frac{3}{4}$	6 $\frac{7}{8}$	7 $\frac{1}{4}$	Nigeria	Major A. H. Festing.
19 $\frac{1}{2}$	6 $\frac{1}{2}$	8	Do.	Major T. Astley Cubitt.
19 $\frac{1}{2}$	6 $\frac{1}{4}$	6 $\frac{1}{2}$	Do.	Capt. R. W. Fox.
19 $\frac{1}{2}$	6	14 $\frac{1}{2}$	N. Nigeria . . .	L. C. Murray.
19 $\frac{1}{2}$	6 $\frac{1}{4}$	5 $\frac{1}{2}$	S. Nigeria . . .	Capt. W. V. Nugent.
19 $\frac{1}{4}$	7	8 $\frac{7}{8}$	N. Nigeria . . .	C. S. Mann.
19 $\frac{1}{4}$	6	11 $\frac{1}{8}$	Do.	Dr. G. J. Pirie.
19 $\frac{1}{4}$	6 $\frac{1}{4}$	6 $\frac{1}{2}$	Do.	Capt. F. E. Bissell.
19 $\frac{1}{4}$	6 $\frac{3}{4}$	13	Lake Chad . . .	Capt. J. C. Parker.
19 $\frac{1}{4}$	6 $\frac{3}{8}$	11	N. Nigeria . . .	Major C. A. Booth.
19	6 $\frac{3}{4}$	13 $\frac{1}{2}$	Lake Chad . . .	Capt. A. Noel Woods.
19	6 $\frac{1}{2}$	11	Do.	Capt. S. B. B. Dyer.
19	6 $\frac{3}{4}$	8 $\frac{3}{4}$	Nigeria	Capt. G. C. Kelly.
19	6 $\frac{1}{2}$	9 $\frac{3}{4}$	Do.	D. W. Pawle.
18 $\frac{1}{4}$	6	5 $\frac{3}{8}$	Gambia	G. Blaine.
17 $\frac{3}{8}$	5 $\frac{3}{4}$	6 $\frac{1}{8}$	S. Nigeria . . .	C. E. Stewart.
17 $\frac{1}{2}$	6 $\frac{1}{2}$	10 $\frac{3}{4}$	Sierra Leone . .	C. Cary Barnard.
17 $\frac{1}{4}$	6	8 $\frac{3}{4}$	Portuguese Guinea .	M. V. Hay.
16 $\frac{3}{8}$	6	10 $\frac{3}{4}$	Sierra Leone . .	Major W. Gillman.
16 $\frac{3}{8}$	6 $\frac{1}{4}$	9 $\frac{5}{8}$	Portuguese Guinea .	Major P. H. G. Powell-Cotton.
15 $\frac{1}{2}$	6	7 $\frac{3}{4}$	Senegambia . . .	G. Fenwick Owen.
15	5 $\frac{1}{2}$	5 $\frac{3}{4}$	Gold Coast . . .	Capt. G. H. Hastings.



Skull and Horns of Uganda Kob.

B.—UGANDA RACE (*Cobus cob thomasi*).

Nsuna, N'Sunu, or Sunu, Waganda.

From the typical Buffon's kob the eastern or Uganda race is distinguished mainly by its superior size, and the presence of a complete white ring round each eye, instead of having only a white line above the same. General colour rich fulvous, with the muzzle, lips, chin, under-parts, and inner surfaces of upper portion of fore-legs and thighs white; front of fore-legs with a black line, and hind-legs with a similar line, which does not, however, ascend within some distance of the hocks. Height at shoulder, about 35 inches.

Distribution.—East Africa, from Kavirondo to Uganda.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
24½	7½	12	Wadelai	Major G. A. S. Cape.
23½	7¼	6¾	Mruli	Lieut.-Col. J. Ponsonby.

— Owner's measurements

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-23	7½	16½	Edward Nyanza . . .	Mrs. P. H. G. Powell-Cotton.
22¾	7¾	15½	Uganda	P. F. Hadow.
22¾	7¾	11½	Do.	Major C. A. Sykes.
22½	7¾	14¼	Do.	Capt. W. S. Nicolson.
22½	6½	10¾	Albert Nyanza . . .	Capt. P. Garrard.
22¼	8½	15½	Uganda	Major R. H. Price.
22¼	6¾	10¾	Do.	Dr. Shircore.
22	7½	12¾	Do.	Capt. A. J. Whittle.
22	7	7¾	Do.	P. B. Vander Byl.
21⅞	7	15¾	Do.	Capt. P. M. Larken.
21¾	6⅞	12⅞	Do.	Col. C. F. Blane.
21¾	7¾	9	Do.	Major R. A. Markham.
21¾	6¾	6	Do.	G. C. Slacke.
21½	7½	10½	Do.	Sir F. J. Jackson.
21½	8	9¾	Do.	Douglas M'Douall.
21¼	6¾	13	Do.	Sir F. J. Jackson.
21¼	6⅝	7½	Do.	R. de la Huerta.
21¼	7¼	14	Do.	Miss C. Buxton.
-21⅓	7½	13¼	Lado	Major P. H. G. Powell-Cotton.
21⅓	7¼	7¾	Wadelai	Lieut.-Col. M. L. Carleton.
21	6¾	5	Uganda	G. L. Harrison.
21	7¾	11	East Africa	F. C. Selous.
21	6¾	14½	Semliki Valley . . .	M. P. Lupton.
21	7¾	9½	Do.	R. E. Dent.

- Owner's measurements.

C.—VAUGHAN'S RACE (*Cobus cob vaughani*).

Very similar to the last, but the general colour of old bucks at one season bright foxy red, much as in the typical race; the red extends on to the bases of the ears, and there is rather less white on the face than in the next race. Adult bucks may become more or less black at one season. Possibly the name *vaughani* will have to be replaced.

Distribution.—The south-western districts of the Bahr-el-Ghazal province.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
23	6	15 $\frac{3}{4}$	Nr. Wau . . .	Capt. L. D. Spencer.
21 $\frac{1}{2}$	7 $\frac{1}{4}$	9 $\frac{1}{2}$	Bahr-el-Ghazal . . .	H. St.-C. Garrood.
20 $\frac{3}{4}$	6 $\frac{1}{2}$	12	Do. . . .	Major P. M. Dove.
20 $\frac{3}{4}$	7 $\frac{3}{8}$	8 $\frac{1}{2}$	Do. . . .	G. L. Wingfield.
20 $\frac{3}{4}$	6 $\frac{1}{2}$	11	Do. . . .	C. Mathews.
20	6 $\frac{3}{4}$	9 $\frac{5}{8}$	Do. . . .	Major F. F. Carroll.
19 $\frac{1}{4}$	7	11 $\frac{1}{2}$	Do. . . .	Capt. P. E. Vaughan.
19	6 $\frac{3}{4}$	5 $\frac{1}{2}$	Do. . . .	J. C. Phillips.
18 $\frac{1}{2}$	6 $\frac{3}{4}$	7	Do. . . .	Major J. L. J. Conry.
18 $\frac{1}{4}$	6 $\frac{1}{4}$	8 $\frac{3}{4}$	Do. . . .	Hon. Walter Rothschild.

D.—WHITE-EARED RACE (*Cobus cob leucotis*).

Hamaraia dyl, Sudani, *Kala*, Niam-Niam.
Jwil, Dinka and Shooli.

The old bucks of this race are of the same blackish-brown colour as those of *C. maria*, but have no light patch in front of the withers, and are further characterised by the ears, a large patch extending from the same to surround each eye, the muzzle, chin, upper portion of the throat, the under-parts, and portions of the inner and front surfaces of the limbs being pure white. The direction of the hair on the middle line of the back is reversed from the loins instead of from the middle of the back. Young bucks and females are red. Height at shoulder, about 34 or 35 inches.

Distribution.—The region of the Upper Nile, including the Sobat, Bahr-el-Ghazal, and their tributaries.



Head of White-eared Kob.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
¹ 24 $\frac{3}{4}$	7 $\frac{1}{4}$	11	Bahr-el-Ghazal . . .	Capt. J. P. V. Hawksley.
23 $\frac{1}{4}$	6 $\frac{1}{2}$	12 $\frac{1}{4}$	Do. . . .	Major A. J. B. Percival.
23 $\frac{1}{4}$	6 $\frac{1}{4}$	10 $\frac{3}{8}$	White Nile	C. Bulpett.
23 $\frac{1}{4}$	6 $\frac{3}{4}$	11 $\frac{1}{4}$	Sobat-Pibor District . . .	Capt. J. A. Pollock.
23	6 $\frac{1}{2}$	10	White Nile	Capt. A. H. Vivian.
23	6 $\frac{1}{4}$	11 $\frac{3}{4}$	Bahr-el-Ghazal	Sir Robert Harvey, Bart.
22 $\frac{7}{8}$	7 $\frac{1}{2}$	15 $\frac{3}{4}$	White Nile	Capt. G. L. Cameron.
22 $\frac{3}{4}$	6 $\frac{3}{4}$	11 $\frac{1}{4}$	Do.	W. H. Lindsay.
22 $\frac{1}{4}$	6	10 $\frac{5}{8}$	Pibor District	Capt. H. V. Venables Kyrke.
22 $\frac{1}{4}$	5 $\frac{3}{4}$	11 $\frac{1}{2}$	Sudan	E. M. Tabor.
22	6 $\frac{1}{2}$	10	White Nile	F. W. Greswolde-Williams.
22	6	13	Do.	Capt. A. Craufurd.
21 $\frac{3}{4}$	6 $\frac{1}{2}$	13 $\frac{1}{2}$	Do.	Major J. H. Rivers.
21 $\frac{3}{4}$	6	14 $\frac{1}{2}$	Do.	Lord Desborough.

¹ Determination provisional.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
21 $\frac{3}{4}$	6 $\frac{1}{2}$	9 $\frac{3}{4}$	White Nile	E. C. Crispin.
21 $\frac{3}{4}$	6 $\frac{3}{4}$	8 $\frac{1}{2}$	Do.	F. C. Selous.
21 $\frac{3}{4}$	6 $\frac{1}{4}$	7 $\frac{1}{2}$	Do.	P. M. Tottenham.
21 $\frac{3}{4}$	6 $\frac{3}{4}$	13 $\frac{3}{8}$	Do.	F. L. Slade.
21 $\frac{1}{2}$	7 $\frac{1}{4}$	12 $\frac{1}{4}$	Do.	Lieut.-Gen. Sir B. T. Mahon.
21 $\frac{1}{2}$	7	11 $\frac{1}{2}$	Do.	H. Fitzroy.
21 $\frac{1}{2}$	6 $\frac{3}{4}$	12	Do.	R. McD. Hawker.
21 $\frac{1}{2}$	6 $\frac{3}{4}$	10 $\frac{1}{4}$	Do.	Capt. E. C. Hamilton.
21 $\frac{1}{2}$	6 $\frac{1}{2}$	7	Do.	C. Bower Ismay.
21 $\frac{1}{2}$	6 $\frac{1}{2}$	13	Do.	C. de la Huerta.
21 $\frac{1}{2}$	6	9 $\frac{1}{4}$	Do.	C. C. Branch.
21 $\frac{1}{2}$	6 $\frac{3}{4}$	7 $\frac{1}{2}$	Do.	Major W. F. Sweny.
21 $\frac{1}{4}$	7 $\frac{1}{2}$	12 $\frac{1}{4}$	Do.	E. D. H. Tollemache.
21 $\frac{1}{4}$	6	13 $\frac{3}{4}$	Do.	Capt. G. Stewart.
21 $\frac{1}{4}$	6 $\frac{3}{4}$	11	Do.	Major W. Hayes-Sadler.
21 $\frac{1}{4}$	6 $\frac{1}{4}$	8	Do.	Major R. M. Sanders.
21 $\frac{1}{4}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Capt. H. R. Headlam.
21 $\frac{1}{4}$	6 $\frac{1}{2}$	4	Do.	W. R. Rhinelander Stewart.
21 $\frac{1}{4}$	7	11 $\frac{1}{2}$	Do.	N. C. Cockburn.
21 $\frac{1}{4}$	7 $\frac{1}{4}$	9 $\frac{3}{4}$	Do.	G. Munn.
21 $\frac{1}{4}$	7 $\frac{1}{4}$	15	Do.	Capt. R. G. C. Brock.
21 $\frac{1}{4}$	6	11 $\frac{1}{2}$	Do.	Duke of Alba.
21 $\frac{1}{4}$	6 $\frac{3}{4}$	10 $\frac{1}{8}$	Do.	G. L. Wingfield.
21	6 $\frac{1}{2}$	8 $\frac{3}{8}$	Do.	Capt. G. F. Pridham.
21	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Do.	J. H. Greathead.

E.—LODER'S PUKU (*C. cob loderi*).

Typified by the under-mentioned skull, but probably identical with a puku-like kob subsequently described as *Adenota pousarguesi*. Horns of a somewhat puku-like type.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
21	8	8 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.



Skull and Horns of Puku.

The PUKU (*Cobus [Adenota] vardoni*).

Impuku, Masubia.

Puku, Ngami.

Muntinya, Barotsi.

Seūla, Chilala and Chibisa.

Sichisunu, Chila.

From the other small kobs with the back of the ears rufous, the puku is distinguishable at once by the uniformly foxy colour of the fore-legs, as well as by the greater length of the hair, especially in the region of the back and loins, where it has a tendency to curl. General colour reddish yellow. Height at shoulder, about 39 or 40 inches. Weight, about 190 lbs.

Distribution.—Chobi and Zambesi valleys, including Barotsiland, very common, and found in small herds of ten to twenty in North-west and North-east Rhodesia.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{3}{4}$	7 $\frac{5}{8}$	17	N.E. Rhodesia . .	Hon. Walter Rothschild.
20 $\frac{1}{2}$	6 $\frac{3}{4}$	11	N.W. Rhodesia . .	Dr. Cole.
-20 $\frac{1}{2}$	7	15	Do.	C. S. Mann.
20 $\frac{1}{4}$	8 $\frac{1}{2}$	12 $\frac{1}{4}$	Lake Bangweolo . .	F. Smitheman.
20	7 $\frac{3}{4}$	7 $\frac{1}{4}$	N.W. Rhodesia . .	T. D. M. Cardeza.
19 $\frac{5}{8}$	7 $\frac{3}{4}$	6 $\frac{7}{8}$	N.E. Rhodesia . .	W. A. Conduitt.
19 $\frac{1}{4}$	6 $\frac{1}{2}$	4	Do.	H. Cookson.
19 $\frac{1}{4}$	7 $\frac{1}{2}$	9 $\frac{1}{4}$	?	T. G. Davey.
19 $\frac{3}{8}$	6 $\frac{3}{4}$	8 $\frac{1}{2}$	?	J. Carr Saunders.
19	7 $\frac{3}{4}$	5 $\frac{3}{4}$	N.W. Rhodesia . .	Major J. Carden.
19	7 $\frac{1}{4}$	8	N.E. Rhodesia . .	F. H. Melland.
-19	7 $\frac{1}{2}$	6	Do.	J. C. Phillips.
18 $\frac{7}{8}$	8	6 $\frac{5}{8}$	Do.	Earl of Kingston.
18 $\frac{3}{4}$	6 $\frac{3}{8}$	8 $\frac{1}{2}$	N.W. Rhodesia . .	R. T. Coryndon.
18 $\frac{3}{4}$	7	6 $\frac{1}{2}$	?	J. L. Drège.
18 $\frac{3}{4}$	6	6	Nyasaland	Dr. A. MacCarthy Morrogh.
18 $\frac{1}{2}$	6 $\frac{1}{2}$	9 $\frac{1}{4}$	?	S. R. Price.
18 $\frac{1}{2}$	6 $\frac{1}{2}$	4 $\frac{1}{2}$	?	Sir Owen Philipps.
18 $\frac{1}{2}$	7 $\frac{1}{4}$	7 $\frac{3}{4}$	N.E. Rhodesia . .	Col. C. F. Blane.
18 $\frac{1}{4}$	7	8 $\frac{3}{4}$	?	W. H. Fountain.
18 $\frac{1}{4}$	7 $\frac{1}{4}$	8	?	Capt. G. M. Spencer-Smith
18 $\frac{1}{4}$	7 $\frac{1}{4}$	7 $\frac{1}{2}$	N.E. Rhodesia . .	P. M. Stewart.
18	7	9 $\frac{1}{2}$	N.W. Rhodesia . .	Capt. H. E. Hambro.
18	7	11 $\frac{1}{4}$	Do.	Col. C. Harding.
18	7 $\frac{3}{8}$	6	Do.	The late George Grey.
17 $\frac{3}{4}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Capt. A. L. Godman.
17 $\frac{3}{4}$	6	7 $\frac{1}{2}$	Do.	J. Ripley.
17 $\frac{3}{4}$	7 $\frac{1}{4}$	8	Ulanga Valley . .	R. Berridge.
17 $\frac{5}{8}$	6 $\frac{1}{4}$	9 $\frac{1}{2}$	N.E. Rhodesia . .	J. Turner.
17 $\frac{1}{2}$	6 $\frac{3}{4}$	7 $\frac{1}{4}$	Tanganyika Plateau .	Claude Francis.
17 $\frac{1}{2}$	7 $\frac{1}{8}$	5 $\frac{5}{8}$	N.E. Rhodesia . .	Col. A. Colville.
17 $\frac{1}{2}$	7 $\frac{1}{4}$	14	N.W. Rhodesia . .	Capt. H. L. Archer-Houblon.
17 $\frac{1}{2}$	7	12 $\frac{5}{8}$	Do.	Major A. H. Daukes.
17 $\frac{1}{2}$	7	7	Do.	E. McClellan.
17 $\frac{1}{2}$	7 $\frac{1}{2}$	5 $\frac{3}{4}$	Do.	J. H. Leche.
17 $\frac{1}{2}$	6 $\frac{3}{4}$	8	Do.	E. Fowler.
♀ 5 $\frac{5}{8}$	3 $\frac{5}{8}$	5 $\frac{1}{4}$	Loru Valley	J. Gibson Hall.

- Owner's measurements.



Head of Vaal Rhebok.

The GREY or VAAL RHEBOK (*Pelea capreolus*).

Vaal Rhebok, Cape Dutch.

Pshiatla, Basuto.

Iliza, Swazi.

Peeli, Bechuana.

The short, upright, straight, and slender horns, together with the somewhat woolly nature of the hair, serve to differentiate the vaal rhebok from the antelopes of the kindred genera. The tail, like that of the reedbucks, is moderately long and bushy; the ears are tall and narrow; the build is slight and graceful; and the general colour is uniformly pale grey, tending somewhat to fawn on the head and limbs. Height at shoulder, about 28 inches in females and 30 or 31 inches in males. The chief distinctions between this antelope and reedbuck are the form of the horns and the absence of the bare patches below the ears.

Distribution.—The open hilly districts of Africa south of the Zambesi.

In the mountain ranges of the eastern and northern districts of Cape Colony, and thence onwards to the Zambesi, the vaal rhebok

affords good sport; and although its somewhat stiff and stily appearance is not at first suggestive of unusual activity, yet the pace and regularity with which a party of these antelopes will race up the steep flank of a mountain are wonderful. A peculiar feature of the vaal rhebok is the soft and woolly nature of the grey coat; the horns afford insignificant trophies, and the flesh is of poor quality.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
11½	2½	4½	?	Sir Owen Philipps.
10¾	2	2½	Basutoland . .	Sir Abe Bailey.
10¼	2½	3	Cape Colony . .	H. Hodgson.
10⅞	2	3⅞	Near Middelburg .	Major E. H. E. Abadie.
9¼	2½	2¾	?	Dr. Oakeshott.
9	2⅝	2⅝	?	Mr. Justice Hopley.
8⅝	2⅝	2½	Cape Colony . .	R. H. Venables Kyrke.
8⅝	2½	2⅝	South Africa . .	British Museum (Dr. Burchell).
8½	2½	2	?	G. Richards.
8	2¼	2¾	?	Capt. R. Meinertzhagen.
8	2	4⅛	?	R. E. Critchley-Salmonson.
8	2	3½	?	V. Ryves.

OWNER'S MEASUREMENTS.

11½	...	...	Spitzkop . . .	American National Collection.
11½	...	...	Cape Colony . .	South African Museum.
10⅝	...	6	Do.	E. T. Murray.
10½	2⅞	4⅞	Transvaal . . .	H. T. and A. H. Glynn.
10¼	2¾	5½	?	Major H. Chamney.
9½	..	3¼	?	Major W. Anstruther Gray.
9⅞	2	4¼	Basutoland . .	Lord Milner.
9¼	2¼	2½	Near Cape Town .	Capt. W. Jardine.
9	2¼	3½	Natal	C. S. Mann.



Head of Reedbuck.

The REEDBUCK (*Redunca*¹ *arundinum*).

Rietbok, Cape Dutch.

Bushmat, Sudani.

Bemba, Masara.

Inzigi, Amandebili.

Im-vwi, Masubia.

Um-vwi, Makuba.

Inhlango, Swazi.

Iklabu, Basuto.

Impoyo, Lower Zambesi.

Mziki, Zulu and Matabili.

Natafwi, Mashukulumbwi.

Mutobo, Barotsi.

Sibughat, Ngami.

Mpoyo, Chilala and Chibisa.

N'tobi, M'Kua.

Maluvwi, Chila.

Reedbucks, none of which is so large as a waterbuck, differ from the latter and the kobs by their lighter build, and the presence of a completely bare or very short-haired patch on each side of the head immediately beneath the ear. The tail is more bushy and shorter, the

¹ Commonly known as *Cervicapra*; a name which is unfortunately preoccupied.

lateral hoofs are relatively smaller, and the black horns, which are of medium length and stoutness, diverge in an upward and outward direction, with a forward curvature at the tips, which may be hooked. Till very late in life the basal portion of the horns is of a pasty consistence, and sportsmen's measurements on the field often include this. The present species, the true rietbok of the Boers, is the largest of the genus, standing about 36 or 37 inches at the shoulder; and has the ear-patch completely bare, and the horns curving regularly forwards without terminal hooks. Reedbuck are generally met with in small family parties, and when excited or alarmed utter a shrill whistle. Their flesh is of fair quality.

Distribution.—Africa, from the Cape to Angola on the western side, and on the eastern side through Mozambique and South Nyasaland to lat. $8^{\circ} 25'$ N. in the Bahr-el-Ghazal district. As their name implies, reedbuck frequent the reed-brakes fringing so many African rivers; some of the rivers where they are still fairly abundant being the Lotsani in Bamangwato and those of Ngami-land and the country between Mashonaland and the east coast. The under-mentioned Rhodesian specimens probably belong to *R. a. occidentalis*, distinguished by a greyish tinge in the coat.

Length ¹ on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
17	6	$15\frac{3}{4}$	N.W. Rhodesia	C. Mathews.
$16\frac{3}{4}$	$6\frac{1}{4}$	$15\frac{3}{4}$	Sabi River	Major J. Stevenson-Hamilton.
$16\frac{1}{2}$	$5\frac{3}{4}$	$14\frac{1}{2}$	P.E. Africa	British Museum (the late Rowland Ward).
$16\frac{1}{2}$	6	$12\frac{3}{4}$	Do.	Hon. Walter Rothschild.
$16\frac{3}{8}$	$6\frac{3}{8}$	11	N.W. Rhodesia	Capt. P. R. Bald.
$16\frac{1}{4}$	6	$16\frac{3}{4}$	Matabililand	R. C. Batley.
$16\frac{1}{4}$	$6\frac{1}{2}$	$15\frac{1}{2}$	N.W. Rhodesia	Col. Lord Douglas Compton.
$16\frac{1}{4}$	$5\frac{1}{2}$	$20\frac{1}{2}$	Barotsiland, N.W. Rhodesia	R. T. Coryndon.
16	$7\frac{1}{2}$	$9\frac{1}{2}$	Do.	Col. C. Harding.
16	$7\frac{1}{2}$	$11\frac{3}{4}$	N.W. Rhodesia	Capt. F. W. Reichwald.
$15\frac{7}{8}$	$6\frac{1}{4}$	$10\frac{1}{2}$	?	C. D. Rudd.
$15\frac{7}{8}$	$6\frac{1}{4}$	$14\frac{1}{4}$	?	British Museum.
² $15\frac{3}{4}$	$6\frac{1}{8}$	$13\frac{1}{2}$	Transvaal	Sir Abe Bailey.
$15\frac{3}{4}$	6	19	Tanganyika Plateau . .	Hon. Walter Rothschild.
$15\frac{3}{4}$	$7\frac{1}{4}$	$16\frac{1}{4}$	N.W. Rhodesia	Lieut.-Col. R. W. R. Barnes.

¹ Horn only, not the pad.

² Abnormal head.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15½	5½	19½	Mpimbi, Nyasaland . . .	British Museum (the late Col. F. Trollope).
15½	6½	13	Nyasaland	Capt. J. Harington.
15¾	5½	19¼	?	Sir Owen Philipps.
15¼	6¼	13¾	N.W. Rhodesia	A. P. Henderson.
15¼	6¼	13¾	Barotsiland, N.W. Rhodesia	F. V. Worthington.
15¼	6	13½	Do.	Norman B. Smith.
15¼	6	13¾	Do.	The late George Grey.
15¼	6½	12¾	N.W. Rhodesia	J. E. R. Oldfield.
15¼	6½	10	Do.	M. C. Crawshay.
15¾	6¾	11¼	Manica Plateau, N. of Zambesi	F. C. Selous.
15	6½	9¾	Mashonaland	Sir John Willoughby, Bart.
15	6½	13	N. Zululand	R. T. Coryndon.
15	6¼	8½	N.E. Rhodesia	Col. C. F. Blane.
15	5½	11	N.W. Rhodesia	G. T. Hutchinson.
15	6¾	14¼	Do.	J. Bell.
15	6½	9¼	Do.	T. D. M. Cardeza.
14¾	5½	9½	Do.	Capt. R. Meinertzhagen.
14¾	6¾	15½	Do.	Capt. H. E. Hambro.
14¾	6	10½	Do.	R. E. Critchley-Salmonson.
14¾	6½	11½	Do.	Capt. H. E. E. Pankhurst.
14¾	6¾	9¼	Do.	Capt. C. G. Leslie.
14¾	6¼	...	Do.	J. H. Leche.
14¾	7	13½	Do.	Val Gielgud.
¹ 12¼	5¼	9½	Congo	H. M. Stephenson.
² 12	6½	12½	Nyasaland	Mrs. C. B. C. Storey.

OWNER'S MEASUREMENTS.

³ 18	...	...	South Africa	F. Vaughan Kirby.
17½	6½	17½	Barotsiland, N.W. Rhodesia	Percy C. Reid.
16¾	...	...	?	C. S. Mann.
16¾	5¾	13½	Zululand	J. Sealy-Bell.

¹ Determination provisional.

² Albino specimen.

³ This was seen and measured by Mr. Kirby. It had one horn only; the other was shot off.



Skull and Horns of Eastern Mountain-Reedbuck.

MOUNTAIN-REEDBUCK or ROOI RHEBOK (*Redunca fulvorufula*).

This reedbuck is considerably smaller than the type species, measuring from about 28 to 31 inches at the shoulder, but has horns of much the same type, without distinct hooks to the tips. The general colour is greyish fawn, showing in some cases a more or less distinct rufous tinge.

Distribution.—Eastern Africa to the south of the Zambesi, particularly Natal, Zululand, and Bechuanaland; represented farther north by the undermentioned race. Rooi (red) rhebok differ from the typical representative of the genus in being inhabitants of the basal slopes of mountains, at a lower level than the tract frequented by the vaal rhebok. They are generally found in small troops of a dozen head or less; and from their active habits and the difficult nature of the ground they frequent, afford excellent stalking. In the neighbourhood of the tributaries of the Limpopo, on the Mabubi, Tamulikan, Machabi, Sunta, and Chobi rivers, as well as the tributaries of the Zambesi east of the Victoria Falls, they are still abundant. Those from the Manica plateau, north of the Zambesi, may be the East African race.

Certain reedbuck from the Lydenburg range of the Transvaal exhibit a tendency to albinism, and have been described as a distinct race (*Redunca fulvorufula subalpina*), but are more probably "sports."

A reed buck from the Mount Kenia district of East Africa appears to be a local race of this species (*R. fulvorufula chanleri*). In the original specimen the nose shows a dark streak like the one often seen in this and the typical reed buck.

A.—TYPICAL RACE (*R. fulvorufula typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
8	$3\frac{7}{8}$	$3\frac{1}{2}$	S. E. Africa . . .	H. W. Elliott.
$7\frac{3}{4}$	$4\frac{3}{4}$	$4\frac{3}{4}$	?	Hon. Walter Rothschild. (Shot by F. C. Selous.)
$7\frac{3}{8}$	$3\frac{3}{4}$	$4\frac{1}{8}$	Zululand . . .	Sir Owen Philipps.
$7\frac{1}{4}$	5	3	Near Bloemfontein . . .	Major R. Rankin.
$7\frac{1}{8}$	$3\frac{3}{4}$	$3\frac{1}{4}$	?	R. T. Coryndon.
7	$3\frac{1}{2}$	$4\frac{1}{4}$	Zululand . . .	A. Cameron.
7	$3\frac{3}{4}$	$4\frac{3}{4}$	?	H. E. Berry.
7	$3\frac{1}{2}$	6	?	P. H. Stewart.
7	$3\frac{1}{2}$	$5\frac{3}{4}$	?	G. Bateman.

OWNER'S MEASUREMENTS.

$9\frac{1}{16}$	5	$6\frac{1}{2}$	Zululand . . .	C. S. Mann.
$8\frac{3}{8}$	$4\frac{7}{8}$	$4\frac{3}{4}$	Humansdorp . . .	F. Vaughan Kirby.
$8\frac{5}{16}$	$5\frac{1}{8}$	5	?	P. C. Keytel.
$8\frac{1}{4}$	$3\frac{3}{4}$	$4\frac{1}{4}$	Transvaal . . .	F. R. N. Findlay.
$7\frac{3}{4}$	...	$2\frac{1}{2}$	Do. . . .	J. L. Drège.
$7\frac{1}{2}$	4	$3\frac{1}{2}$	Lebombo Range, S. A.	Count E. Hoyos.

B.—EASTERN RACE (*R. fulvorufula chanleri*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
7	$4\frac{1}{4}$	$4\frac{1}{8}$	East Africa . . .	H. G. Watson.
$6\frac{3}{4}$	$4\frac{1}{2}$	3	Do. . . .	Earl of Kingston.
$6\frac{3}{4}$	3	$2\frac{3}{8}$	Do. . . .	A. E. Butter.
$-6\frac{3}{4}$	$3\frac{1}{2}$	$5\frac{3}{4}$	Do. . . .	Major H. W. A. Christie.
$6\frac{3}{4}$	4	$3\frac{3}{8}$	Do. . . .	Capt. T. H. Rivers Bulkeley.
$6\frac{3}{4}$	$3\frac{1}{2}$	$4\frac{1}{4}$	Do. . . .	N. J. Hitchens.
$6\frac{3}{4}$	$3\frac{1}{2}$	$3\frac{1}{2}$	Do. . . .	Duke of Sutherland.
$6\frac{3}{4}$	$3\frac{3}{4}$	$3\frac{3}{4}$	Do. . . .	Capt. J. A. Morrison.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$6\frac{5}{8}$	$4\frac{1}{4}$	...	East Africa	Capt. E. H. Sinkinson.
$6\frac{5}{8}$	$4\frac{1}{2}$	$3\frac{3}{4}$	Do.	G. W. C. Drexel.
$6\frac{5}{8}$	$4\frac{1}{4}$	$2\frac{3}{4}$	Do.	G. Henry.
$6\frac{5}{8}$	$3\frac{3}{4}$	$3\frac{1}{2}$	Do.	Lord Waleran.
$6\frac{5}{8}$	$3\frac{1}{4}$	$3\frac{5}{8}$	Do.	Col. J. E. Gough.
$-6\frac{5}{8}$	$5\frac{1}{4}$	$4\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
$6\frac{1}{2}$	$4\frac{1}{2}$	$2\frac{7}{8}$	Do.	K. V. Painter.
$6\frac{1}{2}$	4	$5\frac{1}{4}$	Do.	Sir H. Seton Karr.
$6\frac{1}{2}$	$3\frac{1}{4}$	$3\frac{5}{8}$	Do.	Col. C. F. Blane.
$6\frac{1}{2}$	4	$4\frac{3}{8}$	Do.	W. A. Baird.
$6\frac{1}{2}$	$3\frac{3}{4}$	5	Do.	D. L. Seth-Smith.
$6\frac{3}{8}$	$3\frac{3}{4}$	4	Do.	Capt. H. C. Hart.
$6\frac{3}{8}$	$4\frac{1}{4}$	$3\frac{1}{2}$	Do.	S. H. Christy.
$6\frac{3}{8}$	$3\frac{1}{2}$	$5\frac{1}{4}$	Do.	P. K. Glazebrook.
$6\frac{3}{8}$	$4\frac{1}{4}$	$3\frac{1}{4}$	Do.	J. R. Bradley.
$6\frac{3}{8}$	$3\frac{5}{8}$	4	Do.	Mrs. Percy C. Madeira.
$6\frac{1}{4}$	$4\frac{1}{2}$	$2\frac{5}{8}$	Do.	Sir Robert Harvey, Bart.
$6\frac{1}{4}$	$3\frac{1}{2}$	...	Do.	J. Jay White.
$6\frac{1}{4}$	$3\frac{3}{4}$	$3\frac{1}{4}$	Do.	E. B. Bronson.
$6\frac{1}{4}$	4	$4\frac{5}{8}$	Do.	A. de L. Long.
$6\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{3}{4}$	Do.	R. Holmes.
$6\frac{1}{4}$	$4\frac{1}{4}$	$2\frac{3}{4}$	Do.	J. Leslie.
$6\frac{1}{4}$	$3\frac{7}{8}$	$3\frac{5}{8}$	Do.	Capt. A. Neave.
$6\frac{1}{4}$	$4\frac{1}{4}$	$3\frac{3}{4}$	Do.	G. P. Gough.
$6\frac{1}{8}$	$3\frac{3}{4}$	$4\frac{3}{4}$	Do.	R. de la Huerta.
$6\frac{1}{8}$	$4\frac{1}{8}$	$4\frac{3}{4}$	Do.	A. Fowler.
$6\frac{1}{8}$	$3\frac{7}{8}$	$4\frac{1}{8}$	Do.	Gorham Brooks.
$6\frac{1}{8}$	$4\frac{1}{4}$	4	Do.	Major P. H. G. Powell-Cotton.
$6\frac{1}{8}$	$4\frac{1}{2}$	$3\frac{1}{2}$	Do.	S. L. Hinde.
$6\frac{1}{8}$	$3\frac{1}{2}$	3	E. of Lake Margherita	Lord Hindlip.
$6\frac{1}{8}$	$3\frac{3}{4}$	4	East Africa	H. Johnson.
$6\frac{1}{8}$	4	4	Do.	G. C. Slacke.
$6\frac{1}{8}$	4	$2\frac{1}{2}$	Do.	I. Barrington White.
$6\frac{1}{8}$	4	$3\frac{1}{4}$	Do.	R. B. Loder.

- Owner's measurements.



Frontlet and Horns of Eastern Bohor Reedbuck.

The BOHOR REEDBUCK (*Redunca redunca*).

Kwantan Rafi, Hausa. *Njaza*, Waganda.

Distinguished from the mountain-reedbuck (with which it agrees approximately in size) by the distinct forward curvature of the tips of the horns, so as to form hooks. General colour uniformly bright fawn, usually with somewhat darker markings on the face and part of forelimbs; tail only slightly bushy, fawn-coloured above and white beneath. The height of the East African race is about 28 inches.

Distribution.—West, East, and North-east Africa.

In addition to one other the following races are recognised :—

R. redunca typica.—Senegal, Gambia, and Gold Coast. Size small; horns short and stout, very thick at base, curved in front, points turned inwards.

R. redunca nigeriensis.—N. Nigeria. Size larger and horns larger and depressed below level of frontal plane.

R. redunca cottoni.—Kordofan, White Nile, and Isle of Meroë, to east of Lado and western Somaliland. Horns long and thin, much curved outwards and backwards, with the points curled straight over, or turning outwards or inwards.¹

R. redunca bohor.—Central Abyssinia. Horns shorter, stouter, and less curved than in *cottoni*.

R. redunca wardi.—East Africa. Horns larger, stout, curved outwards, with the points much turned inwards.

¹ In the Dinder Valley the type of head with in-curving horns described as *Cervicapra r. donaldsoni* intergrades with *cottoni*.

A.—TYPICAL RACE (*R. r. typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10	4 $\frac{3}{4}$	6 $\frac{1}{4}$	Gold Coast . . .	Capt. G. H. Hastings.
8 $\frac{3}{4}$	5 $\frac{3}{4}$	4 $\frac{3}{8}$	Gambia . . .	Commr. A. A. Ellison, R.N.
8 $\frac{1}{4}$	5 $\frac{1}{2}$	5	Senegambia . . .	G. Fenwick-Owen.
8 $\frac{1}{8}$	4 $\frac{1}{2}$	5 $\frac{3}{4}$	Portuguese Guinea . .	Major P. H. G. Powell-Cotton.

B.—NIGERIAN RACE (*R. r. nigeriensis*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11	5	7	N. Nigeria . . .	L. Donisthorpe.
10 $\frac{3}{4}$	6 $\frac{1}{8}$	7	Do. . . .	Major C. A. Booth.
10 $\frac{5}{8}$	6	4 $\frac{1}{4}$	Do. . . .	F. Beckles Gall.
10 $\frac{3}{8}$	6 $\frac{1}{2}$	2 $\frac{7}{8}$	Lake Chad . . .	Capt. S. B. B. Dyer.
10 $\frac{3}{8}$	5 $\frac{1}{2}$	8	N. Nigeria . . .	Capt. O. Oakes.
-10 $\frac{1}{4}$	5 $\frac{1}{4}$	4 $\frac{1}{2}$	Do. . . .	Capt. C. F. Watson.
10 $\frac{1}{4}$	5	4 $\frac{3}{4}$	Do. . . .	Capt. G. C. Kelly.
10	5 $\frac{3}{4}$	5 $\frac{3}{4}$	Do. . . .	Capt. J. C. Parker.
10	5 $\frac{1}{2}$	6 $\frac{7}{8}$	Do. . . .	Capt. L. C. Brodie.
10	5 $\frac{1}{2}$	5 $\frac{1}{4}$	Nigeria . . .	Capt. W. H. Wilkin.
9 $\frac{3}{4}$	5 $\frac{3}{4}$	5	N. Nigeria . . .	A. A. Smith.
9 $\frac{3}{4}$	5	7	Do. . . .	H. C. Bridges.
9 $\frac{1}{2}$	5 $\frac{1}{4}$	7 $\frac{3}{4}$	Do. . . .	Capt. A. Noel Woods.
9 $\frac{1}{2}$	5	3 $\frac{3}{8}$	Do. . . .	Major J. W. Carroll.
9 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	Do. . . .	Capt. A. C. Aubin.
9 $\frac{1}{4}$	5 $\frac{1}{2}$	2 $\frac{3}{4}$	Do. . . .	G. L. Harrison.
9 $\frac{1}{4}$	5	4 $\frac{1}{2}$	Do. . . .	Capt. W. C. N. Hastings.
9 $\frac{1}{4}$	5 $\frac{1}{2}$	4 $\frac{1}{4}$	Do. . . .	Major Lord J. S. Cavendish.
9 $\frac{1}{5}$	5 $\frac{1}{4}$	6 $\frac{1}{4}$	Do. . . .	Major W. Anstruther Gray.
9 $\frac{1}{8}$	4 $\frac{3}{4}$	6 $\frac{3}{4}$	Do. . . .	Capt. S. C. Peck.
9 $\frac{1}{8}$	6 $\frac{3}{4}$	3	Do. . . .	Capt. G. Bonham-Carter.
9	4 $\frac{1}{2}$	7 $\frac{1}{2}$	Do. . . .	Lady Constance Stewart-Richardson.
9	5	5 $\frac{1}{4}$	Do. . . .	Sir E. Stewart-Richardson, Bart.



Skull and Horns of Abyssinian Bohor Reedbuck.

C.—ABYSSINIAN RACE (R. r. bohor).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{3}{4}$	5 $\frac{3}{4}$	11 $\frac{3}{4}$	West of Lake Tana	Major P. H. G. Powell-Cotton.
10 $\frac{5}{8}$	5 $\frac{1}{2}$	5	Abyssinia . . .	D. P. MacGillivray.
10	4 $\frac{1}{2}$	3 $\frac{1}{4}$	Do.	Sir Edmund G. Loder, Bart.
9 $\frac{3}{4}$	5 $\frac{3}{4}$	5	Lake Zuay . . .	Lord Hindlip.
9 $\frac{3}{4}$	6	8	Zuguala Mt. . .	A. E. Butter.
9 $\frac{1}{2}$	5 $\frac{7}{8}$	9 $\frac{1}{2}$	Abyssinia . . .	R. Hayne.
9 $\frac{1}{4}$	5 $\frac{3}{4}$	5 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.

D.—SUDANI RACE (R. r. cottoni).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16	5	23 $\frac{3}{8}$	Mongalla . . .	E. M. Sinauer.
15	4 $\frac{1}{2}$	17	Dinder Valley . .	R. von Rothermann.
15	5 $\frac{1}{4}$	12 $\frac{5}{8}$	Do.	C. Bower Ismay.
14 $\frac{3}{4}$	5 $\frac{1}{4}$	16 $\frac{3}{8}$	Do.	Capt. B. W. Y. Danford.
14 $\frac{5}{8}$	6	11 $\frac{3}{4}$	Do.	Col. A. Colville.
14 $\frac{1}{2}$	5 $\frac{1}{4}$	13	Do.	Lord Villiers.
14 $\frac{1}{2}$	4 $\frac{3}{4}$	15	Blue Nile . . .	G. L. Harrison. (See illustration, p. 222.)



Head of Sudani Bohor Reedbuck, showing the divergent type of horns.
Shot by Mr. G. L. Harrison.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{3}{4}$	5 $\frac{1}{2}$	13	Sudan . . .	Prince Colloredo Mannsfeld.
14	6	16 $\frac{2}{3}$	Dinder Valley . . .	Norman B. Smith.
-14	...	16 $\frac{2}{3}$	Blue Nile . . .	A. L. Butler.
-14	...	18	Do.	G. B. Middleton.
13 $\frac{3}{4}$	5 $\frac{1}{4}$	9	Sudan	Douglas M'Douall.
13 $\frac{3}{4}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	Dinder Valley . . .	C. D. Eyre.
13 $\frac{3}{4}$	5 $\frac{1}{4}$	15	White Nile	P. Santos Saurez.
13 $\frac{3}{4}$	6	9 $\frac{3}{8}$	Dinder Valley . . .	Miss C. Buxton.
13 $\frac{3}{4}$	5	12 $\frac{1}{2}$	Do.	Major C. P. B. Wood.
13 $\frac{3}{4}$	6	9 $\frac{3}{8}$	Do.	Prince F. Liechtenstein.
13 $\frac{3}{4}$	6	12	Do.	Capt. J. C. Graham.
13 $\frac{3}{8}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	Do.	Capt. A. Craufurd.

- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{1}{4}$	5	18 $\frac{1}{4}$	Dinder Valley . . .	C. E. Russell.
13 $\frac{1}{4}$	5 $\frac{3}{8}$	12 $\frac{3}{8}$	Mongalla . . .	Capt. P. A. Wilson.
13 $\frac{1}{4}$	5 $\frac{1}{2}$	15 $\frac{1}{4}$	White Nile . . .	Duke of Alba.
12 $\frac{3}{4}$	6 $\frac{1}{4}$	8	Blue Nile . . .	Hon. T. G. B. Morgan-Grenville.
12 $\frac{3}{4}$	5	15	Sudan . . .	Major P. M. Dove.
12 $\frac{3}{8}$	5 $\frac{7}{8}$	11 $\frac{1}{4}$	Mongalla . . .	Capt. R. F. Balfour.

E.—EASTERN RACE (R. r. wardi).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{3}{8}$	5 $\frac{1}{8}$	8 $\frac{1}{8}$	East Africa . . .	British Museum (Sir John Kirk).
13 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{1}{2}$	Do. . .	Maj.-Gen. Sir J. R. Macdonald.
-12	7	5 $\frac{1}{2}$	G.E. Africa . . .	S. E. White.
11 $\frac{1}{2}$	6 $\frac{1}{4}$	9 $\frac{1}{4}$	East Africa . . .	Lord Hindlip.
11 $\frac{3}{8}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	Do. . .	S. H. Christy.
10 $\frac{3}{8}$	6 $\frac{3}{8}$	8 $\frac{1}{2}$	Do. . .	A. Fowler.
10 $\frac{5}{8}$	5 $\frac{3}{4}$	7 $\frac{3}{8}$	Do. . .	Sutton Timmis.
10 $\frac{5}{8}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	Do. . .	Sir Robert Harvey, Bart.
10 $\frac{1}{2}$	5 $\frac{1}{2}$	9 $\frac{1}{2}$	Uganda ¹ . . .	Duke of Peneranda.
10 $\frac{1}{2}$	6 $\frac{3}{8}$	3 $\frac{3}{4}$	Do. . .	Col. C. F. Blane.
10 $\frac{1}{2}$	6 $\frac{3}{8}$	7	East Africa . . .	F. C. Selous.
10 $\frac{1}{2}$	5 $\frac{1}{4}$	10 $\frac{1}{4}$	G.E. Africa . . .	F. H. Melland.
10 $\frac{1}{4}$	6 $\frac{1}{4}$	4	East Africa . . .	Lord Montgomerie.
10 $\frac{1}{4}$	6	4 $\frac{1}{4}$	Do. . .	Lord Wodehouse.
10 $\frac{1}{4}$	5 $\frac{7}{8}$	7 $\frac{1}{8}$	Do. . .	H. Fowler.
10 $\frac{1}{4}$	6 $\frac{1}{2}$	5 $\frac{1}{2}$	Do. . .	J. Todd.
10 $\frac{1}{4}$	5 $\frac{3}{4}$	7 $\frac{1}{4}$	Do. . .	B. Barr Smith.
10 $\frac{5}{8}$	6	5 $\frac{1}{4}$	?	Col. Max. C. Fleischmann.
10	5 $\frac{1}{2}$	6 $\frac{1}{4}$	Mau Plateau . . .	Sir F. J. Jackson.
10	7 $\frac{1}{4}$	4 $\frac{3}{8}$	East Africa . . .	C. Craig.
10	5 $\frac{3}{4}$	5	Do. . .	Capt. R. Meinertzhagen.
10	6	7 $\frac{1}{2}$	Do. . .	R. de la Huerta.
10	6	5	Do. . .	Duke of Medinaceli.
10	5 $\frac{3}{4}$	6 $\frac{1}{2}$	Do. . .	Duke of Alba.
10	5 $\frac{1}{2}$	6	Do. . .	N. C. Cockburn.
10	5 $\frac{1}{4}$	7	Do. . .	W. N. McMillan.

- Owner's measurements.

¹ May belong to *R. r. uganda*.



Head of Dibatag.

The DIBATAG (*Ammodorcas clarkei*).

Although resembling the gazelles in the face-markings, the dibatag approximates in foot-structure and the form of the horns to the reedbuck group, to which it may be related. The horns of the males are rather short, and have a regular upward and forward curvature, somewhat like those of a reedbuck; they are ridged on the front for a considerable portion of their length. The neck is considerably elongated, and the tail long and thin. The general colour of the upper-parts is a deep cinnamon. Height at shoulder, about 33 inches; weight, from 65 to 70 lbs. When running, the long neck is thrown back towards the tail, which is elevated, so that the two look as though they would touch. Discovered by Mr. T. W. H. Clarke in 1890.

Distribution.—Central Somaliland, in the eastern districts of the Haud.

Length on front curve.	Circumference.	Tip to Tip.	Owner.
12 $\frac{5}{8}$	5 $\frac{1}{4}$	4 $\frac{5}{8}$	Hon. Walter Rothschild.
11 $\frac{3}{4}$	4 $\frac{7}{8}$	3 $\frac{5}{8}$	Gen. Sir Arthur Paget.
11 $\frac{3}{4}$	4 $\frac{3}{4}$	3 $\frac{5}{8}$	T. W. H. Clarke.
11 $\frac{1}{4}$	4 $\frac{1}{4}$	6	R. McD. Hawker.

Length on front curve.	Circum- ference.	Tip to Tip.	Owner.
11 $\frac{1}{4}$	4 $\frac{1}{2}$	4 $\frac{3}{4}$	Col. J. E. Gough.
11	5 $\frac{1}{2}$	2 $\frac{3}{4}$	Major B. R. M. Glossop.
11	5	5 $\frac{1}{2}$	S. Payne-Gallwey.
10 $\frac{3}{4}$	4 $\frac{1}{4}$	4 $\frac{3}{4}$	Mr. Justice Hopley.
10 $\frac{3}{4}$	5 $\frac{1}{2}$	4	Sir Edmund G. Loder, Bart.
10 $\frac{2}{3}$	4 $\frac{1}{2}$	3	Capt. B. E. Murray.
10 $\frac{1}{4}$	4 $\frac{3}{4}$	4 $\frac{5}{8}$	Capt. A. H. Mosse.
10 $\frac{1}{8}$	4 $\frac{1}{8}$	4 $\frac{1}{2}$	Major P. H. G. Powell-Cotton.
9 $\frac{3}{4}$	4 $\frac{1}{2}$	5 $\frac{1}{8}$	British Museum (T. W. H. Clarke).
9 $\frac{5}{8}$	4	3 $\frac{1}{2}$	Capt. H. A. Carter.
9 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{5}{8}$	Dr. R. E. Drake-Brockman.
9 $\frac{1}{2}$	5	5	Capt. F. R. Tarleton.

OWNER'S MEASUREMENTS.

13	...	...	J. D. Inverarity.
12 $\frac{3}{4}$	...	...	Capt. G. G. S. Brander.
12	...	...	C. S. Mann.
11 $\frac{5}{8}$	4 $\frac{1}{4}$	5	Capt. J. Brander-Dunbar.
11 $\frac{1}{8}$	4 $\frac{1}{2}$	5 $\frac{5}{16}$	Capt. M. McNeill.
10 $\frac{7}{8}$	4 $\frac{1}{4}$	5	P. C. Keytel.



Head of Pala.

The PALA or IMPALA (*Æpyceros melampus*).

Rooibok, Cape Dutch.

Inzero, Masubia.

Swala, Swahili.

Luondo and *Mpala*, Barotsi,

Ngami, Chilala, and Chibisa.

Pala, Waganda, Basuto, and Be-
chuna.

Impala, Zulu, Swazi, and Matonga.

Luboudar, Chila.

The pala, saiga, and chiru have been generally classed with the gazelles, but apparently form independent groups. The specific name (black-footed) of the first refers to the pair of black tufts on each hind-foot. The horns of the bucks, which are of considerable length in proportion to the size of the animal, show a characteristic and graceful double curvature; and the bright foxy-red hue of the shining hair of the upper-parts is very characteristic. Height at shoulder, from about 34 to 37 or 38 inches. Weight, from about 130 to 160 lbs.

Distribution.—Southern and Eastern Africa, extending as far north as Lower Kordofan. In Angola replaced by an allied form, usually regarded as a distinct species, but which is perhaps only a local race (*Æ. melampus petersi*), distinguished by the presence of a purplish-black streak down the middle of the face and another through the line of each eye. In the days of their abundance pala

were found in big troops, such as are still to be met with on the Upper Zambesi, in East Mashonaland, and parts of British East and Central Africa. Some half-century ago they were to be found in similar numbers among the covert on the banks of every river in the Transvaal and Bechuanaland; but it is not till the northern border of the former country that they are now to be met with, and then only in small parties. Pala are some of the fleetest of all antelopes, and are in the habit of leaping high in the air; their presence always implies the neighbourhood of water.

A.—TYPICAL RACE (*Æ. melampus typicus*).

Length.				Locality.	Owner.
On front curve.	Straight.	Circumference.	Tip to Tip.		
31 $\frac{5}{8}$	25 $\frac{1}{2}$	6 $\frac{1}{2}$	18 $\frac{1}{4}$	East Africa . .	Sir Richard Dane.
31 $\frac{1}{2}$	24 $\frac{5}{8}$	6	16 $\frac{5}{8}$	Do. . . .	W. Judd.
31 $\frac{1}{4}$	25	6 $\frac{5}{8}$	13	Do. . . .	E. M. Crosfield.
30 $\frac{3}{4}$	...	5 $\frac{3}{4}$	23 $\frac{1}{2}$	Do. . . .	Capt. E. Berry.
30 $\frac{1}{4}$	24 $\frac{3}{4}$	6 $\frac{3}{8}$	24 $\frac{1}{2}$	Do. . . .	T. de Halpert.
30 $\frac{1}{4}$	23 $\frac{1}{2}$	6 $\frac{1}{4}$	15 $\frac{1}{2}$	Do. . . .	J. G. Millais.
30	24 $\frac{3}{4}$	6 $\frac{1}{2}$	20 $\frac{3}{4}$	Do. . . .	Count C. Podstatzky.
30	24	6 $\frac{1}{4}$	17 $\frac{1}{2}$	Do. . . .	Lord Delamere.
29 $\frac{3}{4}$	24	5 $\frac{7}{8}$	19 $\frac{3}{4}$	Do. . . .	P. F. Hadow.
29 $\frac{3}{4}$	24 $\frac{1}{4}$	6 $\frac{1}{4}$	17	Do. . . .	Capt. W. M. Burrell.
29 $\frac{5}{8}$	23 $\frac{1}{2}$	6 $\frac{1}{2}$	18	Do. . . .	G. C. Slacke.
29 $\frac{1}{2}$	25	6	24	Do. . . .	H. Hyde-Baker.
29 $\frac{1}{2}$	24 $\frac{3}{4}$	6	22 $\frac{3}{4}$	Do. . . .	C. Fahnstock.
29 $\frac{1}{2}$	24	6	18 $\frac{1}{4}$	Do. . . .	J. E. R. Oldfield.
29 $\frac{1}{2}$	23 $\frac{1}{2}$	6 $\frac{1}{2}$	19 $\frac{1}{2}$	Do. . . .	G. P. L. Cosens.
29 $\frac{1}{2}$	23 $\frac{3}{4}$	6 $\frac{1}{2}$	15 $\frac{3}{4}$	Do. . . .	A. E. Butter.
29 $\frac{1}{4}$	24 $\frac{1}{2}$	6	19 $\frac{1}{2}$	Do. . . .	Count E. Hoyos.
29 $\frac{1}{4}$	23 $\frac{5}{8}$	6 $\frac{3}{8}$	16 $\frac{1}{4}$	Do. . . .	W. W. Ashley.
29 $\frac{1}{4}$	24 $\frac{1}{2}$	6 $\frac{1}{2}$	22 $\frac{1}{2}$	Do. . . .	H. B. Cox.
29 $\frac{1}{4}$	24 $\frac{1}{4}$	6 $\frac{1}{4}$	16 $\frac{1}{4}$	Do. . . .	A. J. A. Douglas.
29 $\frac{1}{4}$	23 $\frac{3}{4}$	5 $\frac{7}{8}$	18 $\frac{3}{4}$	Do. . . .	Capt. G. V. Clarke.
29 $\frac{1}{4}$	23 $\frac{3}{8}$	6 $\frac{3}{8}$	17	Do. . . .	Capt. E. Sartorius.
29	24 $\frac{1}{2}$	6	27 $\frac{1}{2}$	Do. . . .	Capt. F. H. Span.
29	23 $\frac{3}{4}$	6 $\frac{1}{4}$	19 $\frac{3}{4}$	Do. . . .	Major W. E. Stobart.
29	24 $\frac{1}{4}$	6	21 $\frac{1}{4}$	Do. . . .	Capt. M. L. Pears.
29	22 $\frac{1}{2}$	6	14	Do. . . .	Marquis of Tweeddale.

RECORDS OF BIG GAME

On front curve.	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	Straight.					
29	24 $\frac{1}{4}$	6 $\frac{3}{8}$	16 $\frac{3}{4}$	East Africa	H. S. L. Scott.	
29	24 $\frac{1}{2}$	6 $\frac{1}{2}$	22 $\frac{1}{4}$	Do.	T. W. H. Clarke.	
29	23	6 $\frac{1}{4}$	17 $\frac{1}{2}$	Do.	Capt. T. H. Rivers Bulkeley.	
29	22 $\frac{3}{4}$	5 $\frac{3}{4}$	19 $\frac{3}{4}$	Do.	Lieut.-Col. P. Polovtsoff.	
29	22 $\frac{1}{2}$	6	9 $\frac{3}{8}$	Do.	Dr. A. Paget.	
28 $\frac{7}{8}$	...	5 $\frac{3}{4}$	17 $\frac{3}{8}$	Do.	Major P. H. G. Powell-Cotton.
28 $\frac{3}{4}$	24	6 $\frac{1}{2}$	17 $\frac{1}{4}$	Do.	Major L. Boyd-Moss.	
28 $\frac{3}{4}$	23 $\frac{1}{2}$	6 $\frac{1}{4}$	19	Do.	Sir Edmund G. Loder, Bart.	
28 $\frac{3}{4}$	22 $\frac{1}{2}$	6	16 $\frac{1}{4}$	Do.	N. C. Cockburn.	
28 $\frac{3}{4}$	24 $\frac{1}{4}$	6 $\frac{1}{4}$	18 $\frac{3}{4}$	Do.	Capt. C. Steele.	
28 $\frac{3}{4}$	23 $\frac{1}{2}$	6	15 $\frac{1}{4}$	Do.	Capt. E. C. Hamilton.	
28 $\frac{3}{4}$	23 $\frac{1}{2}$	6	12 $\frac{1}{4}$	Do.	Capt. R. A. McClymont.	
28 $\frac{5}{8}$	23 $\frac{1}{2}$	6	24	Do.	W. N. McMillan.	
28 $\frac{5}{8}$	22 $\frac{3}{4}$	6 $\frac{1}{4}$	13 $\frac{1}{2}$	Do.	Capt. J. N. Price Wood.	
28 $\frac{1}{2}$	23 $\frac{1}{4}$	6	16	Do.	C. W. Turner.	
28 $\frac{1}{2}$	23	6 $\frac{1}{4}$	21 $\frac{1}{2}$	Do.	C. J. Blackburn Maze.	
28 $\frac{1}{2}$	22	6 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	Major Lord J. S. Cavendish.	
28 $\frac{1}{2}$	23 $\frac{1}{4}$	6 $\frac{1}{2}$	16 $\frac{1}{2}$	Do.	Capt. E. F. Hausburg.	
28 $\frac{1}{2}$	22 $\frac{1}{2}$	6 $\frac{1}{4}$	12 $\frac{1}{4}$	Do.	Capt. L. H. Lloyd.	
28 $\frac{1}{2}$	24 $\frac{1}{4}$	6	20 $\frac{1}{2}$	Do.	Capt. L. H. Hickson.	
28 $\frac{1}{4}$	24 $\frac{5}{8}$	6 $\frac{1}{4}$	24 $\frac{1}{2}$	Do.	Capt. R. Meinertzhagen.	
28 $\frac{1}{4}$	23	6 $\frac{1}{2}$	11 $\frac{1}{4}$	Do.	J. R. Bradley.	
28 $\frac{1}{4}$	23	6	19	Do.	G. F. Archer.	
28 $\frac{1}{4}$	21 $\frac{3}{4}$	5 $\frac{3}{4}$	17 $\frac{3}{4}$	Do.	H. C. Allfrey.	
28 $\frac{1}{4}$	23 $\frac{1}{2}$	6 $\frac{1}{4}$	22 $\frac{1}{2}$	Do.	Duke of Sutherland.	
28 $\frac{1}{4}$	23 $\frac{1}{4}$	6	19 $\frac{3}{4}$	Do.	E. B. Horne.	
28 $\frac{1}{4}$	23 $\frac{1}{2}$	6 $\frac{1}{2}$	16 $\frac{3}{8}$	Do.	Capt. R. Clemm.	
28 $\frac{1}{4}$	23 $\frac{1}{4}$	5 $\frac{3}{4}$	14 $\frac{1}{2}$	Do.	R. B. Loder.	
28 $\frac{1}{4}$	23	6 $\frac{1}{2}$	21 $\frac{3}{4}$	Do.	Col. C. F. Blane.	
28 $\frac{1}{4}$	23 $\frac{1}{4}$	5 $\frac{3}{4}$	17 $\frac{1}{2}$	Do.	R. de la Huerta.	
28 $\frac{1}{4}$	23	6	18	Do.	A. Hamilton Gault.	
28 $\frac{1}{4}$	23 $\frac{1}{2}$	6	20 $\frac{3}{4}$	Do.	H. H. Williams.	
28	23	6 $\frac{1}{2}$	12	Do.	H.R.H. Prince Arthur of Connaught.	
28	22 $\frac{3}{8}$	6 $\frac{3}{4}$	25	Do.	Earl of Warwick.	
28	23	6 $\frac{1}{4}$	13	Do.	Walter Jones.	
28	24 $\frac{1}{4}$	6 $\frac{3}{8}$	17 $\frac{1}{4}$	Do.	R. Hayne.	

On front curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight.	Circumference.			
28	$23\frac{1}{4}$	$5\frac{3}{8}$	22	East Africa . . .	Hon. E. Coke.
28	$23\frac{3}{4}$	$5\frac{3}{4}$	$17\frac{3}{4}$	Do. . . .	C. H. Tritton.
28	24	6	$22\frac{3}{4}$	Do. . . .	H. B. Tate.
28	$22\frac{1}{2}$	6	12	Do. . . .	Sir F. J. Jackson.
28	21	$5\frac{7}{8}$	$12\frac{1}{4}$	Do. . . .	G. E. Smith.
28	22	$5\frac{1}{2}$	$16\frac{1}{4}$	Do. . . .	Capt. F. W. Barrett.
28	$22\frac{3}{4}$	$5\frac{1}{2}$	$13\frac{1}{2}$	Do. . . .	The Master of Belhaven.
28	$23\frac{1}{2}$	$6\frac{1}{4}$	22	Do. . . .	Capt. C. J. Murray.
28	$22\frac{3}{4}$	$5\frac{3}{4}$	$24\frac{1}{8}$	Do. . . .	Capt. W. H. Wilkin.
28	$22\frac{1}{2}$	$5\frac{3}{4}$	$19\frac{3}{4}$	Do. . . .	Capt. J. Fitzgerald.
28	$22\frac{1}{4}$	6	13	Do. . . .	D. Davies.
28	$22\frac{3}{4}$	$6\frac{1}{4}$	$9\frac{1}{2}$	Do. . . .	G. O. Sloper.
28	$22\frac{1}{2}$	$6\frac{1}{4}$	$18\frac{3}{8}$	Do. . . .	P. Fleming.
$27\frac{3}{4}$	23	$6\frac{1}{4}$	19	Do. . . .	Lord Wodehouse.
$27\frac{3}{4}$	$22\frac{1}{2}$	6	$11\frac{1}{4}$	Do. . . .	Capt. G. F. Phillips.
$27\frac{3}{4}$	22	$5\frac{3}{4}$	$16\frac{3}{4}$	Do. . . .	Capt. the Hon. G. H. Douglas-Pennant.
$27\frac{3}{4}$	21	6	$9\frac{1}{2}$	Do. . . .	Lieut.-Col. the Hon. W. A. W. Lawson.
$27\frac{3}{4}$	23	$5\frac{3}{4}$	18	Do. . . .	Hon. Mrs. Blyth.
$27\frac{3}{4}$	$23\frac{1}{4}$	6	$13\frac{1}{2}$	Do. . . .	Major H. F. T. Fisher.
$27\frac{3}{4}$	$21\frac{1}{2}$	6	$12\frac{3}{4}$	Do. . . .	F. Garside.
$27\frac{1}{2}$	$22\frac{1}{4}$	$5\frac{3}{4}$	$15\frac{1}{4}$	Do. . . .	Major S. Belfield.
$27\frac{1}{2}$	$23\frac{1}{4}$	$5\frac{3}{4}$	$12\frac{3}{4}$	Do. . . .	Rhys Williams.
$27\frac{1}{2}$	$22\frac{1}{4}$	6	$11\frac{3}{4}$	Do. . . .	F. C. Selous.
$27\frac{1}{2}$	$21\frac{1}{2}$	$5\frac{3}{4}$	$13\frac{1}{2}$	Do. . . .	Lord Hindlip.
$27\frac{1}{2}$	23	6	$19\frac{1}{2}$	Do. . . .	G. C. Whitaker.
$27\frac{1}{2}$	$22\frac{1}{4}$	$6\frac{1}{4}$	$14\frac{3}{4}$	Do. . . .	A. Brocklehurst.
$27\frac{1}{2}$	$22\frac{3}{8}$	$6\frac{1}{4}$	$10\frac{1}{2}$	Do. . . .	Major C. U. Price.
$27\frac{1}{2}$	$23\frac{1}{8}$	6	$18\frac{3}{8}$	Do. . . .	A. Bayley-Worthington.
$27\frac{1}{2}$	$21\frac{1}{2}$	$6\frac{3}{8}$	$10\frac{3}{4}$	Do. . . .	G. de P. Colville.
$27\frac{1}{2}$	$23\frac{1}{2}$	$5\frac{5}{8}$	$21\frac{1}{2}$	Do. . . .	H. C. Phipps.
$27\frac{1}{2}$	$22\frac{1}{4}$	$6\frac{1}{4}$	$17\frac{1}{4}$	Do. . . .	Capt. J. A. Morrison.
$27\frac{1}{2}$	$23\frac{1}{2}$	$5\frac{3}{4}$	$19\frac{1}{4}$	Do. . . .	Arthur James.
$27\frac{1}{2}$	21	$5\frac{7}{8}$	$14\frac{1}{4}$	South Africa . . .	British Museum (Dr. Burchell).
24	$19\frac{1}{4}$	$6\frac{1}{4}$	12	N. Zululand . . .	Col. Lord Douglas Compton.
$23\frac{3}{4}$	$18\frac{5}{8}$	$5\frac{1}{2}$	$10\frac{7}{8}$	Ngamiland . . .	A. G. Stigand.

B.—NYASA RACE (*Æ. melampus johnstoni*).

Most of the following specimens are only referred provisionally to this race.

Mr. R. T. Coryndon writes that although in N.E. Rhodesia horns of 20 inches are rare, in the Northern Transvaal and Swaziland, where pala abound, horns of 22 inches are not uncommon, and a few specimens are still longer.

On front curve.	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	Straight.					
22½	18¼	5¼	9½	N.W. Rhodesia . . .	H. D. Hannay.	
22¼	18½	5½	9¾	N.E. Rhodesia . . .	R. D. Waterhouse.	
22	18¼	5¼	11	Nyasaland	A. V. Willcox.	
21	18½	4¾	11¾	Do.	Capt. J. S. Brogden.	
21	17½	5¼	15½	Rhodesia	A. W. Griffin.	
20¼	17	6	9½	N.W. Rhodesia . . .	J. Bell.	
20	16	5¼	8½	N.E. Rhodesia . . .	F. H. Melland.	
20	16	5	6½	Do.	H. Cookson.	
20	16	5	6½	N.W. Rhodesia . . .	Hon. J. Cunliffe-Lister.	
19¾	16½	5½	6½	Do.	Major J. Carden.	
19¾	16	4¾	9¼	Do.	R. C. Wood.	
19½	15¾	5	6¼	Nyasaland	K. L. Storey.	
19½	17	5	7¾	N.W. Rhodesia . . .	J. H. Leche.	
19½	16¼	5½	12¾	Do.	H. R. Phillips.	
19¼	15¾	4¾	7½	N.E. Rhodesia . . .	Col. A. Colville.	
19¼	15¼	5	6¼	N.W. Rhodesia . . .	Capt. the Hon. G. H. Douglas-Pennant.	

C.—ANGOLA RACE (*Æ. melampus petersi*).

On front curve.	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	Straight.					
23¾	19¾	6	14¾	Angola	C. W. Sharp.	
23½	19½	5½	13¾	Do.	Sir Edmund G. Loder, Bart.	
23¼	...	5½	15	Do.	A. H. Harrison.	
23¼	18½	5¾	9¾	Do.	W. C. Neilson.	
21¼	18	5¼	19¼	S.W. Africa	A. N. Henderson.	
21	17¾	5¾	11¾	Angola	Hon. Walter Rothschild.	



Horns of Saiga. From the Hon. Walter Rothschild's specimen.

The SAIGA (*Saiga tatarica*).

One of the most remarkable of all antelopes is the Central Asian saiga, which differs from most of its kindred by the inflated and puffy nose. This forms a kind of trunk, comparable to that of the dik-diks, with the nostrils directed downwards. The tail is short, and lateral hoofs are present. In summer the colour is dull yellowish above and whitish beneath, but in winter the whole coat is uniformly whitish. The short and blunt ears are thickly covered with hair, and the horns of the males pale amber-colour. Height at shoulder, about 30 inches.

Distribution.—The Kalmuk steppes of Southern Russia, Northern Russian Turkestan, particularly between the Sea of Aral and Lake Balkash; and locally throughout Zungaria as far east as the western edge of the Gobi. Formerly the range extended to the confines of Poland.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$14\frac{3}{8}$	$5\frac{1}{4}$	$3\frac{1}{2}$	Siberia	Hon. Walter Rothschild. (See illustration.)
$13\frac{3}{4}$	5	...	Volga Steppe	Sir Edmund G. Loder, Bart.
$13\frac{3}{4}$	$4\frac{3}{8}$	$3\frac{1}{2}$	?	Sir Victor Brooke's Collection.
$13\frac{5}{8}$	5	$5\frac{1}{2}$	Sarepta, South Russia	British Museum.
$13\frac{1}{2}$	5	$3\frac{3}{8}$	Eastern Zungaria	J. H. Miller.
$-12\frac{3}{4}$	5	2	?	Imperial Museum, Vienna.

- Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
$-12\frac{3}{4}$	5	5	?	J. C. Phillips.
$-12\frac{1}{2}$	5	$4\frac{1}{4}$	Siberia	Dublin Museum.
$12\frac{1}{4}$	5	$5\frac{7}{8}$	Do.	Duke of Bedford.
$12\frac{1}{4}$	5	$4\frac{1}{2}$	Do.	Rowland Ward.
$-11\frac{1}{2}$	$4\frac{3}{4}$	$5\frac{1}{2}$	Do.	Dr. Albert von Stephani.
$8\frac{1}{2}$	...	$5\frac{1}{4}$	Do.	Major W. Anstruther Gray.

- Owner's measurements.



Head of Saiga.



Chiru. Shot by Mr. H. C. V. Hunter.

The CHIRU or TIBETAN ANTELOPE (*Pantholops hodgsoni*).

Among several animals peculiar to the Tibetan plateau none is more interesting than the chiru, whose beautiful horns form some of the most cherished trophies of the sportsman. Although very unlike in general appearance, the chiru is related to the saiga, having the nose even more swollen at the sides, at least in the male, but less bent downwards at the tip. The long black horns of the bucks, which are somewhat compressed, rise almost vertically from the head, and are slightly divergent, nearly straight below, but evenly curving forwards above, and ridged in front. General colour of hair, which is very dense and short, pale fawn above, with a pinkish suffusion, but the face and part of the limbs of the males black or dark brown. Height at shoulder, about 31 or 32 inches; weight, from 90 to 120 lbs. The genus is peculiar in having only two pairs of premolar teeth in each jaw.

Distribution.—The plateau of Tibet, at elevations of from 13,000 to 16,000 feet, or even more; the species associates in pairs or small parties.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
27 $\frac{3}{4}$	6 $\frac{1}{8}$	13 $\frac{1}{2}$	North of Beansi Pass .	British Museum (Hume Collection).
27 $\frac{3}{8}$	5 $\frac{1}{2}$	11 $\frac{1}{4}$	Tibet	Sir Robert Harvey, Bart.
27 $\frac{1}{8}$	5 $\frac{7}{8}$	13 $\frac{1}{8}$	North of Beansi Pass .	British Museum (Hume Collection).
27	6	14 $\frac{1}{2}$	?	Hon. Walter Rothschild.
27	5	13 $\frac{1}{2}$	Tibet	P. F. Hadow.
26	4 $\frac{7}{8}$	12 $\frac{7}{8}$	Do.	Capt. G. Campbell.
25 $\frac{5}{8}$	5 $\frac{1}{2}$	12 $\frac{3}{4}$	?	Arnold Pike.
25 $\frac{1}{2}$	5 $\frac{3}{4}$	11 $\frac{1}{2}$	Tibet	Major C. B. Vandeleur.
25 $\frac{3}{4}$	5 $\frac{3}{4}$	14 $\frac{1}{4}$	?	Major Sir W. Codrington.
25 $\frac{1}{2}$	5 $\frac{1}{2}$	12 $\frac{3}{4}$	?	Miss Barber.
24 $\frac{3}{4}$	5	11	?	E. L. Phelps.
24 $\frac{3}{4}$	5 $\frac{1}{2}$	15 $\frac{1}{2}$	Tibet	Capt. J. A. Stewart-Balmain.
24 $\frac{3}{4}$	5	19 $\frac{1}{4}$	Do.	Royal Scottish Museum.
24 $\frac{1}{2}$	5	12 $\frac{3}{4}$	Do.	Capt. H. H. P. Deasy.
24 $\frac{1}{2}$	5	13 $\frac{1}{2}$	Do.	Capt. J. F. Turner.
24 $\frac{1}{4}$	4 $\frac{3}{4}$	18 $\frac{1}{4}$	?	Capt. D. L. R. Lorimer.
24 $\frac{1}{4}$	5 $\frac{1}{4}$	13 $\frac{1}{2}$	?	Capt. W. F. Corbett.
24	5 $\frac{1}{2}$	15	?	Capt. L. Oldfield.
24	5 $\frac{1}{4}$	11 $\frac{1}{2}$	Tibet	Sutton Timmis.
24	5	12 $\frac{1}{2}$	Do.	P. Radclyffe.

OWNER'S MEASUREMENTS.

27	6	17	Mansarawar Lake .	Capt. F. M. Bailey.
27	5 $\frac{5}{8}$	14 $\frac{1}{4}$	Tibet	Major G. K. Channer.
27	...	12	?	J. D. Inverarity.
26 $\frac{3}{4}$	6	13 $\frac{3}{4}$	Tibet	Dr. Albert von Stephani.
26 $\frac{1}{2}$	...	...	Chang-chenmo . .	Lieut.-Col. A. E. Ward.
26 $\frac{3}{8}$	5 $\frac{3}{4}$	12 $\frac{3}{4}$	Tibet	J. C. Phillips.
25 $\frac{1}{4}$	5	10 $\frac{3}{4}$	Do.	Major P. H. G. Powell-Cotton.
25	5 $\frac{3}{4}$	11	Chang-chenmo . .	Sir Edmund G. Loder, Bart.
24 $\frac{1}{2}$	4 $\frac{3}{4}$	..	Tibet	Major-General A. A. A. Kinloch.



Skull and Horns of Blackbuck. From the late Mr. A. O. Hume's specimen.

The BLACKBUCK or INDIAN ANTELOPE (*Antilope cervicapra*).

Although in former days nearly all the then known species of antelopes were included in the genus *Antilope*, the extent of the latter has been gradually whittled down until it now comprises the Indian blackbuck alone. In addition to being the sole representative of the genus, this species is also the type of a subfamily or group of antelopes, embracing the springbuck, gazelles, and gerenuk. These are small or medium-sized antelopes, with hairy muzzles, generally short tails, and tall, narrow-crowned cheek-teeth, like those of sheep. In

the springbuck and the majority of the gazelles horns are present in both sexes, but in the rest are confined to the males. From all the other members of this assemblage the blackbuck is distinguished by the beautiful spiral formed by its horns. It has large, expansible face-glands, a short and compressed tail, and lateral hoofs. Height at shoulder, about 32 inches; average weight, 85 lbs. It is only in adult males that the characteristic dark tint from which the species takes its name is developed, young males being uniformly brownish fawn above like the does; the latter, like gazelles, have two teats.

Distribution.—India, from the foot of the Himalaya to Cape Comorin, and from the Punjab to Lower Assam; unknown in Ceylon and the countries to the eastward of the Bay of Bengal.

Length straight.	Circumference.	Tip to Tip.	Locality.	Owner.
28 $\frac{1}{4}$	5	17 $\frac{3}{4}$	Near Delhi . . .	British Museum (Hume Collection).
27 $\frac{3}{4}$	5 $\frac{1}{4}$	...	Central Provinces . . .	A. H. Morris.
27 $\frac{3}{8}$	5	18 $\frac{5}{8}$	Bikanir	H.H. the Maharaja of Bikanir.
27	5 $\frac{3}{8}$	19 $\frac{3}{8}$	Patiala	Major W. Cox.
26 $\frac{7}{8}$	4 $\frac{3}{4}$	26	Alwar	Lieut.-Col. L. Impey.
26 $\frac{3}{4}$	4 $\frac{3}{4}$	25 $\frac{1}{4}$	Bhurtpore	Lieut.-Gen. Sir E. T. H. Hutton.
26 $\frac{1}{2}$	5 $\frac{1}{2}$	11 $\frac{1}{2}$	Alwar	Hon. E. S. Montagu.
26 $\frac{1}{2}$	5 $\frac{1}{4}$	27 $\frac{3}{4}$	United Provinces . . .	Capt. C. B. Oldfield.
26 $\frac{1}{2}$	4 $\frac{7}{8}$	14 $\frac{3}{4}$	Bikanir	Lord Hardinge.
26 $\frac{3}{8}$	5	17 $\frac{7}{8}$	Sirsa, Punjab	British Museum (Hume Collection).
26 $\frac{5}{16}$	5 $\frac{1}{4}$	22	Bikanir	Col. G. D. F. Sullivan.
26 $\frac{9}{16}$	4 $\frac{1}{2}$	20	?	Sir Edmund G. Loder, Bart.
26 $\frac{1}{4}$	5	19	Alwar	H.H. the Maharaja of Alwar.
26 $\frac{1}{4}$	5	23 $\frac{1}{8}$	Oudh	E. St. J. Lawson.
26 $\frac{1}{4}$	5	23 $\frac{1}{4}$	Bikanir	H.H. the Maharaja of Kotah.
26	5	21 $\frac{7}{8}$	Do.	Lieut.-Col. H. W. Codrington.
25 $\frac{3}{4}$	4 $\frac{3}{4}$	19	Jeypore	Hon. A. Holland-Hibbert.
25 $\frac{3}{4}$	4 $\frac{3}{4}$	...	Agra	Capt. F. W. Van der Kiste.
25 $\frac{5}{8}$	5 $\frac{1}{4}$	19	?	Lady Jenkins.
25 $\frac{1}{2}$	4 $\frac{7}{8}$	18	Punjab	Lieut.-Col. R. H. Rattray.
25 $\frac{1}{4}$	4 $\frac{3}{4}$	19	Jeypore	A. B. Graves.
25 $\frac{1}{8}$	5 $\frac{1}{8}$	15	Kathiawar	Lieut.-Col. L. L. Fenton.
25	5	18 $\frac{1}{4}$	?	Lieut.-Col. H. G. Mainwaring.
24 $\frac{3}{4}$	5	20	Jeypore	Lieut.-Col. J. B. Buchanan.
24 $\frac{3}{4}$	4 $\frac{1}{2}$	17 $\frac{1}{4}$	Dholpur	A. J. Coppinger.

Length straight.	Circumference.	Tip to Tip.	Locality.	Owner.
24½	5½	18¼	?	Capt. G. S. Bull.
24½	5	15	?	The late Earl of Minto.
24½	5	18	Bikanir	P. B. Vander Byl.

OWNER'S MEASUREMENTS.

30½	...	...	?	Capt. J. MacRae-Gilstrap.
¹ 28¾	...	...	Jeypore	General Sir B. Blood.
28	...	20	Do.	Lieut.-Col. P. Durell Pank.
28	5	15	Near Ahmedabad	T. Le Mesurier.
27¾	5½	16½	Jeypore	R.E. Mess, Roorkee.
27	5	20¾	Rajputana	Brig.-Surg. A. D. Campbell.
27	5	19½	Bikanir	Capt. Harry V. Brooke.
26¾	5	21¾	Punjab	Major R. P. Wemyss Quin.

¹ Measured and recorded by the late Mr. A. O. Hume, but not now in the possession of General Sir B. Blood.



Head of Blackbuck.



Head of Goa.

The GOA or TIBETAN GAZELLE (*Gazella* [*Procapra*] *picticaudata*).

The goa is the typical representative of a subgenus of gazelles characterised by the short tail, the absence or small size of the face-glands and the tufts of hair on the knees, and the lack of horns in the female. Face-markings are also wanting. As a species, the goa is distinguished by its comparatively small size, and the strongly marked backward curvature of the horns, which are not hooked at the tips, as well as by the large size of the white rump-patch, and the pale colour of the coat. Height at shoulder, about 24 or 25 inches. Weight, about 45 lbs.

Distribution.—The plateau of Tibet and some of the adjacent parts of Central Asia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{1}{8}$	3 $\frac{3}{4}$	5	Ladak . . .	Sir Edmund G. Loder, Bart.
14 $\frac{1}{8}$	3 $\frac{5}{8}$	2	Hanle, Spiti . . .	Hon. Walter Rothschild.
13 $\frac{7}{8}$	3 $\frac{1}{2}$	8 $\frac{3}{8}$	Gyantse, Tibet . . .	Capt. R. S. Kennedy.
13 $\frac{3}{8}$	3 $\frac{3}{4}$	3	Ladak . . .	Major G. F. Mockler.
13 $\frac{1}{2}$	3 $\frac{5}{8}$	5 $\frac{1}{4}$	N. of Sikhim . . .	British Museum (Hume Collection).
13 $\frac{1}{2}$	3 $\frac{7}{8}$	5	Tibet . . .	C. Hamilton.
13 $\frac{1}{8}$	4 $\frac{1}{4}$	3 $\frac{3}{4}$	Ladak . . .	Major Neill Malcolm.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{1}{8}$	4	3 $\frac{5}{8}$	Tibet . . .	H. C. V. Hunter.
13	4 $\frac{1}{8}$	4 $\frac{1}{2}$	East Ladak . . .	Col. J. Biddulph.
13	3 $\frac{3}{4}$	1 $\frac{1}{2}$	?	Major C. B. Vandeleur.
13	3 $\frac{7}{8}$	4 $\frac{5}{8}$	?	Capt. W. T. Hodgson.
13	3 $\frac{3}{8}$	4 $\frac{1}{4}$	Tibet . . .	P. K. Wise.
13	3 $\frac{3}{4}$	5 $\frac{3}{8}$	N. of Sikkim . . .	Major A. Pearse.
12 $\frac{3}{4}$	3 $\frac{3}{4}$	6 $\frac{1}{2}$	?	E. McClellan.
12 $\frac{3}{4}$	4	6 $\frac{1}{4}$	Ladak . . .	Baroda State Museum.
12 $\frac{3}{4}$	4	4 $\frac{3}{4}$	Do. . . .	Earl of Ilchester.
12 $\frac{5}{8}$	3 $\frac{1}{2}$	2 $\frac{1}{4}$	Do. . . .	K. C. Zarzhetsky.
12 $\frac{1}{2}$	3 $\frac{3}{8}$	5	Do. . . .	Dr. T. G. Longstaff.
12 $\frac{1}{2}$	3 $\frac{7}{8}$	2 $\frac{1}{2}$	?	Major Lord Charles M. Nairne.
12 $\frac{1}{2}$	3 $\frac{1}{2}$	...	?	G. W. Grabham.
12 $\frac{3}{8}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	South of Hanle . .	Col. F. C. Lister-Kay.
12 $\frac{1}{4}$	3 $\frac{3}{4}$	2 $\frac{1}{2}$	?	T. R. Ubsdell.
12 $\frac{1}{4}$	3 $\frac{1}{2}$	6 $\frac{1}{4}$	Ladak . . .	The late David T. Hanbury.
12 $\frac{1}{4}$	3 $\frac{3}{4}$	4	Tibet . . .	W. A. Conduitt.
12 $\frac{1}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	Do. . . .	Major F. G. T. Deshon.
12	3 $\frac{3}{4}$	3 $\frac{5}{8}$	Kan-su, Tibet Border	K. K. Horn.

OWNER'S MEASUREMENTS.

14	...	...	Ladak . . .	Major Brown.
14	...	...	Do. . . .	C. C. Winn.
13 $\frac{3}{8}$	3 $\frac{1}{2}$	6 $\frac{1}{8}$	Do. . . .	Capt. F. M. Bailey.
13 $\frac{1}{4}$	3 $\frac{1}{2}$	3	Do. . . .	Lieut.-Col. H. W. Codrington.
13 $\frac{1}{8}$	3 $\frac{5}{8}$	6 $\frac{1}{4}$	S.E. of Hanle . .	Major P. H. G. Powell-Cotton.
13	3 $\frac{3}{4}$	5 $\frac{3}{4}$	Tibet . . .	Bombay Natural History Society.
13	3 $\frac{1}{2}$	4	Do. . . .	Capt. F. W. A. Wells.
12 $\frac{5}{8}$	3 $\frac{5}{8}$	4	Do. . . .	Officers' Mess, 3rd Gurka Rifles.
12 $\frac{1}{4}$	3 $\frac{1}{2}$	7 $\frac{1}{2}$	Gyantse, Tibet . .	Capt. A. O. Creagh.



Head of Przewalski's Gazelle. Shot by Mr. G. Fenwick-Owen.

PRZEWALSKI'S GAZELLE (*Gazella* [*Procapra*] *przewalskii*).

Nearly allied to the goa, from which it differs by its rather larger size, and the distinct hooks formed by the tips of the horns of the bucks. General colour in summer, deep fawn; in winter, pale finely grizzled fawn; white of buttocks running up in an angle on each side of the tail, which is very short, and almost concealed by the fur. Front of limbs more or less brown.

Distribution.—Northern Kan-su and Ordos.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12½	4¾	4½	Nr. Shiakou, 2 days S. E. of Kanchow	G. Fenwick-Owen.
10¼	4¾	2¾	?	British Museum.
10	4	4¾	?	H. R. II. Henri de Bourbon, Comte de Bardi.
9¾	4½	4¾	North of Pekin	British Museum (R. Swinhoe).
9¾	4¾	1¼	Nr. Shiakou, 2 days S. E. of Kanchow	H. F. Wallace.
8½	3¾	4¾	North China	Paris Museum (Père A. David).

- Owner's measurements.



Frontlet and Horns of Altai Zeren Gazelle.

The **ZEREN** or **MONGOLIAN GAZELLE** (*Gazella* [*Procapra*] *gutturosa*).

Zeren or *Seren*, Mongolian.

Hwang-yang, Chinese.

Much larger than the goa, this species takes its name from the swollen condition of the throat of the bucks during the pairing-season. In addition to its size (height at shoulder, about 30 inches), it is characterised by the comparatively slight backward curvature of the light brown or grey horns, which are relatively small and not hooked at the tips; the general colour of the upper-parts and fronts of the legs in summer being pale fawn, with the front of the face light brown, and the white of the rump reaching to the sides of the short tail. The ears are relatively small. Rudimentary knee-tufts and small face-glands, as well as inguinal glands (lacking in the goa) are present.

Distribution.—The whole of northern Mongolia from the Kosh-Agatch steppe in the west to the Khingán region in the east. Also the central Gobi.

Two closely allied races are recognised, the typical *G. gutturosa typica* and the Altai *G. g. altaica*. The following specimens belong to the Altai race.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{3}{4}$	4 $\frac{3}{8}$	3 $\frac{1}{2}$	Altai . . .	Sir Edmund G. Loder, Bart.
12	4 $\frac{3}{8}$	6	Do. . . .	J. H. Miller.
11 $\frac{3}{4}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
11	4 $\frac{3}{8}$	4 $\frac{3}{8}$	Do. . . .	St. George Littledale.
11	4 $\frac{1}{2}$	6 $\frac{1}{4}$	Do. . . .	A. Louw.
11	4	7	Do. . . .	British Museum (R. Hayne).
10 $\frac{7}{8}$	4	6 $\frac{5}{8}$	Do. . . .	P. B. Vander Byl.
10 $\frac{1}{2}$	4	5 $\frac{1}{8}$	Do. . . .	Hon. Walter Rothschild.



Head of Goitred Gazelle. Shot by Mr. G. Fenwick-Owen.

The GOITRED GAZELLE (*Gazella subgutturosa*).

With this species we come to the true gazelles, in which the tail is considerably longer than in *gutturosa*, *przewalskii*, and *picticaudata*, being from six to eight inches in length and black, while tufts of long hair on the knees, glands on the face and in the groin are always developed. In immature animals a dark streak in front of the eyes is present, but in many adult specimens this and the light fawn of the upper part of the face are very indistinct and often wanting in the winter coat. Horns, which are absent in the female, relatively large

and divergent. The rump-patch extends to the root of the tail, and the ears are small. Height at shoulder, from 26 to 27 inches. The larynx is swollen in males during the breeding-season, when it forms a prominence on the front of the upper part of the throat of the bucks. The Marica gazelle is smaller, with horns in the females.

There are two races of this gazelle, the Caspian and Persian *G. s. typica*, and the Altai *G. s. sairensis*, in which the size is large but the horns are relatively small.

Distribution.—From north-west Persia, eastern Asia Minor, and Caucasia in the west, through Russian Turkestan and Zungaria to the southern Gobi in the east.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{3}{4}$	4 $\frac{3}{4}$	4 $\frac{1}{2}$	Persia . . .	Sir W. Preece.
15 $\frac{1}{8}$	4 $\frac{1}{4}$	7 $\frac{1}{4}$	Sheraz . . .	Dr. Albert von Stephani.
14 $\frac{3}{4}$	4 $\frac{1}{2}$	9 $\frac{1}{2}$	?	Hon. Walter Rothschild.
13 $\frac{7}{8}$	4 $\frac{3}{4}$	7 $\frac{3}{4}$	Ili Valley . . .	Capt. J. N. Price Wood.
13 $\frac{3}{4}$	4 $\frac{1}{2}$	6	Saissan, W. Siberia .	British Museum (Dr. O. Finsch).
13 $\frac{5}{8}$	4 $\frac{5}{8}$	4 $\frac{1}{4}$	S. Zungaria . . .	J. H. Miller.
13 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{1}{4}$	San-cao-tion, Kan-su	G. Fenwick-Owen.
13	4 $\frac{3}{4}$	4 $\frac{1}{4}$	Persia . . .	E. Rennie.
12 $\frac{1}{4}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	San-cao-tion, Kan-su	H. F. Wallace.

- Owner's measurements.

The SAIKIK GAZELLE (*Gazella yarcandensis*).

Saikik, Turki.

A larger species than the goitred gazelle, standing some 28 inches, with the ears much longer, the face-markings distinct, and the general colour darker. The horns, present only in the bucks, are somewhat heavier and longer than in the typical form, and the white markings on the rump extensive.

Distribution.—Chinese Turkestan from Yarkand to Lob Nor.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17	4 $\frac{1}{2}$	6 $\frac{7}{8}$	Eastern Turkestan .	Sir Edmund G. Loder, Bart.
16	5	3 $\frac{1}{4}$	Yarkand . . .	British Museum (Hume Collection).
15 $\frac{1}{4}$	...	5	Maralbashi . . .	Sir H. Lennard, Bart.
14 $\frac{3}{4}$	4 $\frac{7}{8}$	3	Eastern Turkestan .	Major C. S. Cumberland.

- Owner's measurements.



Skull and Horns of Saikik Gazelle, in the possession of Sir Edmund G. Loder, Bart.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$14\frac{1}{4}$	5	$5\frac{1}{4}$	Tien Shan . . .	G. L. Harrison.
14	5	$5\frac{3}{4}$	Eastern Turkestan . .	Col. J. Biddulph.
$13\frac{3}{4}$	5	4	Chinese Turkestan . .	J. V. Phelps.
$13\frac{3}{4}$	$4\frac{7}{8}$	$4\frac{1}{2}$	Do.	E. L. Phelps.
$13\frac{1}{2}$	$4\frac{3}{4}$	$6\frac{5}{8}$	Maralbashi	The late David T. Hanbury.

OWNER'S MEASUREMENTS.

$14\frac{5}{8}$	$31\frac{5}{16}$	$4\frac{3}{4}$	Lob Nor	Paris Museum (Prince Henri d'Orléans).
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THE SEISTAN GAZELLE (*Gazella seistanica*).

The Seistan gazelle of Eastern Persia differs by the much smaller extent of the white on the rump, which does not reach the root of the tail, and the white muzzle.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$14\frac{1}{4}$	5	$7\frac{3}{4}$	N. Persia	Capt. C. T. Daukes.
14	4	$3\frac{1}{2}$	Do.	Lieut.-Col. R. L. Kennion.
$12\frac{3}{4}$	$4\frac{3}{4}$	$5\frac{1}{4}$	Do.	British Museum (Lieut.-Col. R. L. Kennion).



Heads of Seistan Gazelle and Kennion's Gazelle. The three upper figures are the Seistan, and the three lower (of which the middle one is a doe) Kennion's gazelle.

KENNION'S GAZELLE (*Gazella fuscifrons*).

Allied to the last (which it serves to connect with the Indian gazelle), but with horns in both sexes, and no goitre in the throat of the bucks.

Distribution.—Typically Jalk, but ranging over Seistan and Kain to Baluchistan.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$14\frac{1}{2}$	$4\frac{3}{4}$	$4\frac{1}{2}$	Baluchistan . . .	Capt. T. W. Greenfield.
12	4	$3\frac{1}{8}$	S. E. Persia . . .	Lieut.-Col. R. L. Kennion.
$11\frac{3}{4}$	4	$3\frac{1}{4}$	Do. . . .	Capt. C. T. Daukes.
$9\frac{1}{2}$	$3\frac{3}{4}$	$3\frac{3}{8}$	Do. . . .	Capt. A. McCleverty.



Head of Indian Gazelle. Shot by Lieut.-Col. P. C. Palin.

The CHINKARA or INDIAN GAZELLE (*Gazella bennetti*).

Closely allied to the last species, this gazelle (the ravine-deer of many Anglo-Indian sportsmen) is characterised by the absence of in-turning of the tips of the horns, the restriction of the white on the rump to the back and inner sides of the thighs, so that it does not reach the root of the tail: the height at the shoulder varies from 25 to 26 inches, and the general colour of the upper-parts is dull fawn.

Distribution.—Peninsular India.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{5}{8}$	4 $\frac{3}{4}$	5 $\frac{1}{2}$	?	Lieut.-Col. P. C. Palin. (See illustration.)
15 $\frac{5}{8}$	4 $\frac{1}{4}$	...	Ferozepore . . .	Mess of the 14th Sikhs.
15	5	...	Rajputana . . .	H. H. Maharaj Rana Bahadur of Jhalawar.
14 $\frac{3}{4}$	4 $\frac{1}{2}$	8	Punjab . . .	C. H. Shanani.
14 $\frac{3}{4}$	4 $\frac{5}{8}$	7 $\frac{1}{4}$	Sind . . .	Capt. J. L. Sleeman.
14 $\frac{1}{2}$	4 $\frac{1}{2}$	8 $\frac{5}{8}$	Dholpur . . .	L. M. le Champion.

— Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{1}{2}$	4 $\frac{3}{4}$	7 $\frac{1}{8}$	Patiala . . .	Major J. F. P. Langdon.
14 $\frac{1}{4}$	4 $\frac{3}{4}$	6	Bikanir . . .	J. A. ffolliott Powell.
14 $\frac{1}{4}$	4 $\frac{1}{4}$	3	Wana Plain, Wazir- istan.	A. J. Grant.
14	3 $\frac{7}{8}$	7 $\frac{1}{8}$	Patiala . . .	Major R. P. Wemyss Quin.
14	4 $\frac{1}{2}$	6 $\frac{5}{8}$	Bikanir . . .	Maharaja of Bikanir.
13 $\frac{3}{4}$	4 $\frac{1}{4}$	7	?	R. H. Edmondson.
13 $\frac{3}{4}$	4 $\frac{3}{8}$	8 $\frac{1}{2}$	Sind . . .	L. Napier.
13 $\frac{5}{8}$	4 $\frac{3}{8}$	7 $\frac{1}{2}$	Bikanir . . .	Capt. C. F. Vander Byl.
13 $\frac{1}{2}$	4 $\frac{1}{4}$	6 $\frac{3}{8}$	Muttra . . .	Major G. F. Mockler.
13 $\frac{3}{8}$	4 $\frac{1}{2}$	6 $\frac{1}{4}$	Punjab . . .	R. H. Heath.
13 $\frac{1}{4}$	4	4 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
13 $\frac{1}{4}$	4	6 $\frac{1}{4}$	?	Major O. A. Chambers.
13 $\frac{1}{4}$	4 $\frac{1}{4}$	4	Khelat . . .	British Museum (Hume Collection).
13 $\frac{1}{8}$	4 $\frac{1}{2}$	6 $\frac{3}{4}$	?	Mess of the 2nd Central Indian Horse.
13	3 $\frac{1}{2}$	6	Bikanir . . .	Lieut.-Col. H. C. Morland.
13	3 $\frac{3}{4}$	6	?	Lieut.-Col. R. H. Rattray.
12 $\frac{3}{4}$	4 $\frac{1}{4}$	5	Goorgaon, Punjab .	British Museum (Hume Collection).
12 $\frac{3}{4}$	4 $\frac{3}{8}$	7 $\frac{1}{2}$	?	H. C. V. Hunter.
12 $\frac{3}{4}$	4 $\frac{1}{4}$	5 $\frac{7}{8}$	North Punjab . . .	Col. J. Biddulph.
12 $\frac{3}{4}$	4 $\frac{1}{4}$	7	?	Major L. I. B. Hulke.
12 $\frac{3}{4}$	4 $\frac{1}{8}$	5 $\frac{3}{4}$	Bikanir . . .	Capt. E. N. Jones-Vaughan.
12 $\frac{3}{4}$	4	6	Jodhpore . . .	H. H. the Maharaja of Bikanir.
12 $\frac{5}{8}$	4	8	?	J. Gouldsmith.
12 $\frac{1}{2}$	4 $\frac{3}{8}$	6 $\frac{3}{8}$	?	Major A. D. Greenhill-Gardyne.
♀ 7 $\frac{1}{4}$	2	2 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
♀ 7 $\frac{1}{8}$	$\frac{5}{8}$	2 $\frac{1}{4}$	?	Sir Victor Brooke's Collection.



Horns of the Edmi Gazelle.

The EDMI or ATLAS GAZELLE (*Gazella cuvieri*).

The African representative of Kennion's gazelle and the chinkara, characterised by the horns in the bucks diverging more or less regularly upwards, and not incurving at the tips. There is a blackish spot on the tip of the muzzle, and the coat is rough. General colour dull fawn, with a very indistinct lateral band, well-defined face-markings, the lower portion of the tail crested with black, and the under-parts, buttocks, and inner surfaces of fore-legs white. Height at shoulder, 26 to 27 inches.

Distribution.—The mountains of Morocco, Algeria, and Tunisia, where it is known by the name of edmi or admī.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{7}{8}$	5	3 $\frac{3}{8}$	Algeria	Sir Edmund G. Loder, Bart.
14 $\frac{5}{8}$	4 $\frac{3}{4}$	4 $\frac{1}{4}$	N. Tunis	J. I. S. Whitaker.
14 $\frac{9}{16}$	4 $\frac{7}{8}$	8	Constantine	British Museum (E. Richardson Cox).
14 $\frac{3}{8}$	4 $\frac{3}{8}$	7	Do.	Royal Scottish Museum (E. Richardson Cox).
14 $\frac{1}{4}$	3 $\frac{7}{8}$	5 $\frac{1}{2}$	Algeria	A. Louw.
-14 $\frac{1}{4}$	...	...	Do.	C. S. Mann.
-14 $\frac{1}{4}$	4	3 $\frac{3}{4}$	Do.	American National Collection.
♀ 13 $\frac{7}{8}$	3 $\frac{1}{2}$	7 $\frac{1}{8}$	Do.	E. N. Buxton.
13 $\frac{3}{8}$	4 $\frac{1}{2}$	7 $\frac{1}{8}$	Do.	Hon. G. Gordon.
13	3 $\frac{1}{4}$	6 $\frac{3}{8}$	Do.	A. F. Williams.
13	4	5	Do.	G. L. Harrison.
♀ 11	2 $\frac{1}{2}$	5 $\frac{1}{8}$	Do.	J. I. S. Whitaker.

- Owner's measurements.

The ARABIAN GAZELLE (*Gazella arabica*).

From the edmi the ordinary Arabian race of this gazelle, as met with at Aden, may be distinguished by its smaller size, smoother hair, and darker colour, the general tint of the upper-parts being dark smoky fawn, with a distinct dark flank-band, the central face-band rufous fawn, and a black spot on the tip of the nose. The horns are relatively small. Height at shoulder, 24 or 25 inches. The Aden race has been named *G. a. erlangeri*; the typical race, *G. a. typica*, which is from the island of Farsan, in the Red Sea, being lighter, with no dark flank-band. The Sinaitic *G. a. rueppelli* is coloured like *dorcas* with the face-markings of *a. erlangeri*; the nose being reddish brown with a distinct blackish spot.

Distribution.—Western and South Arabia, where it is known as ghasal, its Syrian title being ariel or aiel.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{3}{4}$	4 $\frac{3}{4}$	4 $\frac{3}{8}$	Syria	H. H. Youssouf Kamal.
—10 $\frac{1}{2}$	4 $\frac{1}{8}$	4 $\frac{1}{8}$	S. Arabia	Dr. Albert von Stephani.
8 $\frac{1}{2}$	4	2	Mocha, South Arabia .	British Museum (the late W. T. Blanford).
—♀ 7 $\frac{1}{2}$	2	4 $\frac{3}{4}$	?	Charterhouse Museum.
4 $\frac{7}{8}$	3 $\frac{1}{8}$	3 $\frac{5}{8}$	South Arabia	Sir Victor Brooke's Collection.
♀ 4 $\frac{1}{2}$	1 $\frac{3}{4}$	2 $\frac{1}{2}$	?	Col. H. G. C. Swayne.

— Owner's measurements.



Head of Dorcas Gazelle.

The DORCAS GAZELLE (*Gazella dorcas*).

Rozal or *Hemar*, Algerian Arabic.

Ghasal, Syria.

The typical race of this species is characterised by the indistinctness of the dark lateral band dividing the fawn of the upper-parts from the white beneath, and the perfectly lyrate form of the horns, which are of medium length, with the middle portion twisted outwardly, and the tips converging towards one another; ears short (125 mm.). Height at shoulder, 21 to 22 inches; total length, about 42 inches. General colour of upper-parts pale fawn, of rather variable tint, with the face-markings distinct.

Distribution.—Typically Lower Egypt; thence eastwards to Palestine and Syria; westwards to the plains of Morocco, Algeria; and southwards to Nigeria and the Sudan.

A.—TYPICAL RACE.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13½	3½	2¼	?	Sir Edmund G. Loder, Bart.
13¾	4¼	2¾	Kordofan	F. P. Nathan.
13½	4	3½	Syria	H. H. Youssouf Kamal.
13½	...	...	Kordofan	Capt. L. Buxton.
13	4¼	2	Sudan	Capt. B. W. Y. Danford.

— Owner's measurements.

DORCAS GAZELLE

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13	4	3½	El Obeid, Kordofan . . .	Capt. J. G. A. Massy.
12⅞	4	2½	Sudan	Capt. C. P. Heywood.
12¾	3⅞	4	Algeria	A. Louw.
12¾	4	4⅝	Kordofan	Capt. J. C. Graham.
12¾	4	1¾	Do.	Lord Villiers.
12⅝	4	3	?	P. K. Glazebrook.
12⅝	3⅝	4⅝	Sudan	Lieut.-Gen. Sir B. T. Mahon.
12½	4	3⅝	Kordofan	Capt. P. E. Vaughan.
12½	3⅝	3¼	Southern Sahara . . .	J. I. S. Whitaker.
12½	4	2¾	Kordofan	Lieut.-Col. C. J. Hawker.
12½	4½	3	Do.	Major C. S. Cumberland.
12⅝	3⅝	...	Southern Sahara . . .	British Museum.
12⅝	3⅝	2	Sudan	H.H. Prince Omar Toussoun.
12¼	4¼	3	Palestine	P. B. Vander Byl.
12¼	3¼	5	Kordofan	G. L. Harrison.
12⅝	4¼	3½	Do.	Major J. H. Rivers.
12⅝	3½	2⅝	Do.	Capt. R. A. McClymont.
12	3⅝	3½	Do.	Capt. F. L. Livingstone-Learmonth.
12	3¼	3½	Do.	B. Chew.
12	3⅝	5⅝	Do.	Sir Robert Harvey, Bart.
12	3½	2¾	Do.	Capt. J. P. V. Hawksley.
12	4	3¾	Southern Sahara . . .	J. H. Thomas.
11⅞	3⅝	4⅝	?	R. E. Fawkes.
11⅞	4	4	Kordofan	Major G. Lumsden.
11⅞	4	2	Do.	Capt. C. E. Hills.
11¾	4¼	5⅝	Do.	Walter Jones.
11¾	4	4	Do.	Norman B. Smith.
11¾	4	3¾	Algeria	E. C. Miller.
11⅝	3⅝	1¾	Dongola	Capt. W. H. Wilkin.
♀ 11¼	2⅞⅝	5¼	Kordofan	Major J. H. Rivers.
11¼	4	3½	N. Nigeria	C. S. Burnett.
10¾	4¼	2¼	Lake Chad	Major J. K. Cochrane.
- ♀ 9⅝	...	...	Algeria	A. E. Pease.

B.—ABYSSINIAN (ISABELLA) RACE (*Gazella dorcas isabella*).*Gannai* of the natives.

The so-called Isabella gazelle is now regarded as the Abyssinian race of *dorcas*. It is typically characterised by the tips of the horns being strongly hooked inwards so as to form nearly or completely a right angle. The colour of the upper-parts is rufous fawn, with the lateral band well developed. Height at shoulder, about 25 inches.

Distribution.—Abyssinia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{1}{8}$	3 $\frac{3}{4}$	4	Komayli, Abyssinia	British Museum (the late W. T. Blanford).

ERYTHRÆAN GAZELLE (*Gazella littoralis*).*Ghazal* of the Sudanese.

Rather smaller than *G. dorcas*; general colour pale reddish fawn, with a pale lateral band, and the dark flank-band rich rufous or madder-brown; nose-spot blackish; ears very long, 144 mm. Skull long and low, with the brain-case flatter, the profile from crown to occiput less nearly vertical, and the basisphenoid more inclined than in *dorcas*; auditory bullæ small; row of upper cheek-teeth larger (56 mm.) than in *dorcas* but the molars narrower.

Distribution.—The African coast of the Red Sea, from Suakin northwards, and adjacent parts of Nubian desert.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{1}{8}$	4	3	Red Sea Province .	H. G. Watson.
11	3 $\frac{5}{8}$	3 $\frac{3}{4}$	Do. .	Capt. the Hon. G. H. Douglas-Pennant.
11	3 $\frac{7}{8}$	2 $\frac{3}{4}$	Do. .	W. B. Cotton.
11	4	3 $\frac{1}{2}$	Do. .	G. L. Harrison.
10 $\frac{7}{8}$	3	3 $\frac{5}{8}$	Do. .	P. H. Thomas.
10 $\frac{7}{8}$	4 $\frac{1}{4}$	4 $\frac{5}{8}$	Do. .	Capt. P. C. Lord.
10 $\frac{3}{4}$	4	4 $\frac{1}{4}$	Do. .	N. C. Cockburn.
10 $\frac{5}{8}$	3 $\frac{3}{4}$	3 $\frac{1}{4}$	Do. .	W. Mure.
10 $\frac{5}{8}$	4	3 $\frac{1}{2}$	Do. .	W. H. Lindsay.
10 $\frac{1}{2}$	3 $\frac{1}{2}$	3	Do. .	G. C. Whitaker.
10 $\frac{3}{8}$	3 $\frac{1}{2}$	2	Do. .	J. H. Miller.
10 $\frac{1}{4}$	3 $\frac{3}{4}$	4	Suakin . . .	C. E. Russell.
10 $\frac{1}{8}$	3 $\frac{3}{4}$	2 $\frac{1}{2}$	Sudan . . .	Major H. H. S. Morant.



Head of Speke's Gazelle.

SPEKE'S GAZELLE (*Gazella spekei*).*Dhero*, Somali.

From the edmi and its allies, with which it agrees in its leading characteristics, this gazelle is readily distinguished by the development of a flabby corrugated elevation on the skin of the nose of both sexes. The coat is thick and the general colour of the upper-parts pale brownish fawn, with the lateral band darker than in the other members of the sub-group. Height at shoulder, from 23 to 24 inches.

The protuberance on the nose is connected with the sexual function; in dead specimens it exhibits a slight cavity beneath the skin which can be inflated by blowing air into the nostrils, and it seems therefore capable of distension during life.

Distribution.—The plateau of Somaliland.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12½	4	5⅞	Somaliland . . .	Col. P. Schletter.
11¾	3¾	3¾	Do. . . .	A. F. Williams.
11¾	3¾	4⅝	Do. . . .	Col. H. G. C. Swayne.
11⅝	3¾	2½	Do. . . .	Gen. Sir Arthur Paget.
11½	4⅝	2¾	Do. . . .	T. W. H. Clarke.
11½	3¾	3¾	Do. . . .	Capt. A. H. W. Temple.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{3}{8}$	3 $\frac{7}{8}$	2 $\frac{5}{8}$	Somaliland . . .	Capt. H. du B. O'Neill.
11 $\frac{1}{4}$	4	4 $\frac{1}{4}$	Do. . . .	Col. H. D. Olivier.
11 $\frac{1}{4}$	4	4	Do. . . .	W. H. Cobb.
11 $\frac{1}{4}$	4 $\frac{1}{8}$	4	Do. . . .	Capt. H. W. Thorpe.
11 $\frac{1}{4}$	3 $\frac{1}{2}$	4	Do. . . .	A. de L. Long.
11 $\frac{1}{4}$	4	4	Do. . . .	Major P. C. Elliott-Lockhart.
11 $\frac{1}{4}$	4	4 $\frac{1}{4}$	Do. . . .	Capt. F. R. Tarleton.
-11 $\frac{1}{4}$	4	5 $\frac{1}{4}$	Do. . . .	R.E. Mess, Roorkee.
11 $\frac{1}{8}$	4	5 $\frac{1}{4}$	Do. . . .	C. Liddell.
11	4	4 $\frac{1}{2}$	Do. . . .	J. H. Whitehouse.
11	4	4	Do. . . .	A. H. Straker.
11	3 $\frac{7}{8}$	5	Do. . . .	Lieut.-Col. H. C. Morland.
11	4 $\frac{1}{8}$	3 $\frac{5}{8}$	Do. . . .	Lord Delamere.
11	3 $\frac{1}{2}$	4	Do. . . .	Capt. A. E. H. Breslin.
11	4	2 $\frac{3}{4}$	Do. . . .	Dr. R. E. Drake-Brockman.
10 $\frac{3}{4}$	4	4 $\frac{3}{4}$	Do. . . .	P. H. Thomas.
10 $\frac{3}{4}$	3 $\frac{1}{4}$	3 $\frac{3}{4}$	Do. . . .	Sir Edmund G. Loder, Bart.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{5}{8}$	Do. . . .	J. H. Miller.
10 $\frac{3}{4}$	4 $\frac{5}{8}$	5 $\frac{1}{4}$	Do. . . .	Major B. R. M. Glossop.
10 $\frac{3}{4}$	4	4	Do. . . .	R. McD. Hawker.
10 $\frac{3}{4}$	3 $\frac{7}{8}$	3	Do. . . .	C. N. Welsh.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Do. . . .	E. Lort-Phillips.
10 $\frac{3}{4}$	4	3 $\frac{3}{4}$	Do. . . .	Major B. Vincent.
10 $\frac{3}{4}$	4	4 $\frac{3}{4}$	Do. . . .	A. Louw.
10 $\frac{3}{4}$	4	3 $\frac{1}{4}$	Do. . . .	Col. E. St. C. Pemberton.
9 $9\frac{1}{2}$	2 $\frac{7}{8}$	3 $\frac{1}{4}$	Do. . . .	T. W. H. Clarke.

- Owner's measurements.



Head of Pelzeln's Gazelle.

PELZELN'S GAZELLE (*Gazella pelzelni*).

Dhero, Somali.

This species, the lowland gazelle of Somaliland, is nearly related to the last, from which it differs by the absence both of the corrugated elevation on the nose and of the black spot on the muzzle. It is also slightly larger than Speke's gazelle, the height at the shoulder being about 25 inches; and its colour is somewhat more rufous, the light flank-band being distinct, and the dark band rufous brown, only slightly darker than the back, without any tendency to blackness. The dark and light bands on the cheeks are relatively short and indistinct.

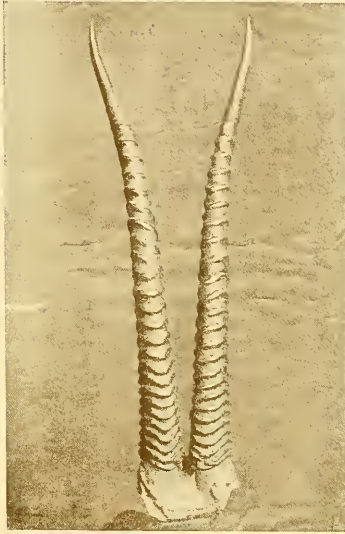
Distribution.—The plains of northern Somaliland, bordering the sea.

Within fifty miles of the shore this gazelle is exceedingly numerous, and may often be seen in large herds.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14	4½	4 ⁵ / ₁₆	Somaliland . . .	Sir Edmund G. Loder, Bart.
13½	3¾	4¾	Do . . .	W. Mure.
13	4¼	4¾	Do. . . .	A. de L. Long.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13	4	$6\frac{1}{4}$	Somaliland . . .	H. D. Briggs.
$12\frac{7}{8}$	$3\frac{1}{2}$	$5\frac{5}{8}$	Do. . . .	Capt. H. McLear.
$12\frac{7}{8}$	$3\frac{7}{8}$	$5\frac{3}{4}$	Do. . . .	Capt. H. C. Dobbs.
$12\frac{3}{4}$	$4\frac{1}{4}$	$4\frac{3}{8}$	Do. . . .	R. P. Dennistoun-Webster.
$12\frac{1}{4}$	$3\frac{3}{4}$	$4\frac{1}{4}$	Do. . . .	Col. H. G. C. Swayne.
$12\frac{1}{4}$	$4\frac{1}{8}$	$5\frac{1}{2}$	Do. . . .	Lord Delamere.
$12\frac{1}{4}$	4	$4\frac{5}{8}$	Do. . . .	Major K. L. W. Mackenzie.
12	$3\frac{1}{4}$	$5\frac{3}{4}$	Do. . . .	Capt. F. W. Richey.
12	$3\frac{3}{4}$	$4\frac{1}{2}$	Do. . . .	Major A. G. Stevenson.
12	$3\frac{3}{4}$	$5\frac{1}{4}$	Do. . . .	Viscount Edmond de Poncins.
12	$3\frac{1}{2}$	$5\frac{1}{4}$	Do. . . .	Major C. R. Kelly.
$11\frac{3}{4}$	4	5	Do. . . .	Lieut. H. V. B. Firman, R.N.
$11\frac{3}{4}$	$4\frac{1}{8}$	4	Do. . . .	Dr. R. E. Drake-Brockman.
$11\frac{5}{8}$	4	$3\frac{1}{2}$	Do. . . .	Capt. H. du B. O'Neill.
$11\frac{1}{2}$	$3\frac{1}{2}$	$5\frac{1}{2}$	Do. . . .	T. W. H. Clarke.
$11\frac{1}{2}$	$3\frac{1}{2}$	$4\frac{1}{4}$	Do. . . .	Lieut.-Col. H. C. Morland.
$11\frac{1}{2}$	$3\frac{1}{2}$	5	Do. . . .	Capt. W. H. Williamson.
$11\frac{1}{2}$	$3\frac{3}{4}$	$4\frac{1}{4}$	Do. . . .	C. S. Mann.
$11\frac{1}{2}$	$3\frac{3}{4}$	$4\frac{5}{8}$	Do. . . .	W. F. Whitehouse.
$11\frac{1}{2}$	$3\frac{1}{2}$	$4\frac{1}{2}$	Do. . . .	Capt. G. W. Denison.
♀ 9	...	...	Do. . . .	C. S. Mann.
♀ $8\frac{1}{4}$	$2\frac{1}{8}$	$3\frac{1}{2}$	Do. . . .	W. F. Whitehouse.



Horns of Loder's Gazelle.

The RHIM or LODER'S GAZELLE (*Gazella leptoceros*).

Rhim, Arabic.

Although originally described so long ago as the year 1842, very little was known of this gazelle till specimens were procured by Sir E. G. Loder, and described as a new species under the name of *G. loderi*. Further investigation proved them to be inseparable from the species named by F. Cuvier. This species is easily recognisable by the long and slender form of the nearly straight horns of the bucks, and the very pale tone of colouring of the upper-parts, which may be described as pale sandy fawn, with the characteristic gazelle-markings only indistinctly defined. On the face the dark streaks are sandy instead of rufous, and the light bands on the flanks are almost imperceptible, while the dark ones below them are pale sandy with the very slightest tinge of brown; the tail being sandy at the base, and gradually darkening to brownish black towards the tip. In the male the horns are about twice the length of the head, very slender, and closely and heavily ridged almost to the tips. Knee-brushes very small. Height at shoulder, about 28 inches. Weight, 34 lbs.

Distribution.—The desert tracts of the interior of Western Egypt, thence extending southwards into Nubia and Sennar; represented by a distinct race on the sand-dunes of the Algerian and Tunisian Sahara.

A.—TYPICAL RACE.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{1}{4}$	4 $\frac{1}{4}$	5 $\frac{1}{8}$	Fayum, Egypt . . .	Capt. S. S. Flower.

B.—TUNISIAN RACE (*G. leptoceros loderi*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{7}{8}$	3 $\frac{3}{4}$	7 $\frac{1}{2}$	Tunisian Sahara . . .	Sir Edmund G. Loder, Bart.
15 $\frac{7}{8}$	3 $\frac{1}{2}$	6 $\frac{1}{4}$	South of Biskra . . .	Dr. Dawtrey Drewitt.
15 $\frac{3}{4}$	4	4 $\frac{1}{4}$	Tunisian Sahara . . .	J. I. S. Whitaker.
15	3 $\frac{3}{4}$	7 $\frac{3}{4}$	Algerian Sahara . . .	G. L. Harrison.
15	3 $\frac{1}{2}$	4 $\frac{1}{4}$	?	J. C. Phillips.
14 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	South of Biskra . . .	American National Collection.
14 $\frac{7}{16}$	3 $\frac{7}{8}$	4 $\frac{3}{4}$	Algerian Sahara . . .	Sir Abe Bailey.
14 $\frac{3}{8}$	3 $\frac{1}{2}$	8	?	C. S. Mann.
14 $\frac{1}{4}$	3 $\frac{3}{4}$	6 $\frac{1}{2}$	Algerian Sahara . . .	H. H. Prince Omar Toussoun.
14 $\frac{1}{4}$	3 $\frac{1}{2}$	10 $\frac{1}{4}$	Do.	Sir Edmund G. Loder, Bart.
14	3 $\frac{7}{8}$	3	Do.	Hon. R. A. Ward.
13 $\frac{5}{8}$	3 $\frac{5}{8}$	5 $\frac{1}{2}$	Do.	W. E. Pease.
13 $\frac{1}{2}$	3 $\frac{3}{4}$	8 $\frac{3}{4}$	Tunisian Sahara . . .	Sir Edmund G. Loder, Bart.
13 $\frac{1}{2}$	3 $\frac{1}{2}$	10	Algerian Sahara . . .	British Museum.
13 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	?	A. Louw.
13 $\frac{1}{4}$	3 $\frac{1}{2}$	5 $\frac{3}{4}$	Tunisian Sahara . . .	J. I. S. Whitaker.
♀ 11 $\frac{3}{4}$	2	3 $\frac{3}{8}$	Do.	Sir Abe Bailey.



Head of Heuglin's Gazelle.

HEUGLIN'S GAZELLE (*Gazella tilonura*).

Tel-Badu, Tigri.

This well-marked species represents a small sub-group in which the dark band on the flanks is very strongly defined, and black in colour; the present species being distinguished from its allies by the abrupt inward hooking of the tips of the horns. The general colour is deep sandy, with the central face-band but little darker than the back, no black nose-spot, and the tail sandy at the base but black elsewhere. Height at shoulder, about 27 inches.

Distribution.—Bogosland, Abyssinia, Sennar, and Northern Bahr-el-Ghazal.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{7}{8}$	4 $\frac{1}{4}$	3 $\frac{1}{2}$	Atbara River . . .	W. B. Cotton.
11 $\frac{3}{4}$	5	2	Sudan	Major F. J. L. Howard.
11 $\frac{1}{2}$	4 $\frac{1}{2}$	2	Atbara River . . .	W. B. Cotton.
11 $\frac{5}{8}$	4	7	Sudan	H. Leney.
11	4	3 $\frac{1}{2}$	Do.	Lord Villiers.
10 $\frac{7}{8}$	4 $\frac{1}{2}$	2 $\frac{1}{2}$	Do.	H. Boughton Leigh.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	?	E. Lort-Phillips.
10 $\frac{3}{4}$	4	2 $\frac{3}{8}$	Bogosland	British Museum.
10 $\frac{1}{2}$	4 $\frac{3}{8}$	3	Near Kassala	Prince Colloredo Mannsfeld.
10 $\frac{1}{4}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	Sudan	C. E. Russell.
10 $\frac{1}{4}$	4 $\frac{1}{2}$	4 $\frac{1}{4}$	Basaland	Hon. Walter Rothschild.
10 $\frac{1}{4}$	4 $\frac{1}{8}$	2 $\frac{7}{8}$	?	Col. Ralph Vivian.
10	4 $\frac{3}{8}$	2 $\frac{1}{2}$	Setit Valley	Earl of Sefton.
♀ 7	2 $\frac{1}{2}$	3 $\frac{3}{8}$	Do.	Do.



Skull and Horns of Red-fronted Gazelle.

The KORIN or RED-FRONTED GAZELLE (*Gazella rufifrons*).

Seni, Gambian.

El Hamra, Dinka.

Bavewa, Hausa.

Ngär, Sudani.

This medium-sized and rather stoutly built species agrees with Heuglin's gazelle in the narrow dark brown flank-band, but differs by the absence of a distinct inward hooking of the tips of the horns. The general colour of the upper parts is deep sandy rufous, brightening into rich rufous on the forehead and face, where there is no nose-spot. The tail, with the exception of the sandy upper surface of the basal portion, is black. Horns relatively small, regularly divergent, curving at first slightly backwards and then forwards, heavily ridged till the terminal two or three inches.

Distribution.—Senegal, Gambia, Northern Nigeria, Kordofan, and White Nile, to Northern Uganda. The typical race is from Gambia and Nigeria; the eastern race being distinguished as *G. r. lavipes*, with which the so-called *G. salmi* is identical.

A.—TYPICAL RACE (*G. ruffrons typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{1}{4}$	4 $\frac{5}{8}$	5 $\frac{7}{8}$	Northern Nigeria	Capt. C. V. Boyle.
12 $\frac{1}{4}$	5	4 $\frac{1}{2}$	Do.	Capt. L. C. Brodie.
12	4 $\frac{1}{4}$	5 $\frac{3}{4}$	Do.	Capt. A. C. Aubin.
11 $\frac{3}{4}$	4 $\frac{1}{4}$	3 $\frac{3}{4}$	Do.	Capt. G. Bonham-Carter.
11 $\frac{1}{2}$	4 $\frac{3}{4}$	4 $\frac{1}{2}$	Do.	H. C. Bridges.
11 $\frac{1}{2}$	4 $\frac{5}{8}$	4 $\frac{3}{4}$	Do.	C. Francis.
11 $\frac{1}{2}$	4 $\frac{1}{4}$	4 $\frac{3}{4}$	Do.	Capt. G. C. Kelly.
11 $\frac{1}{4}$	4 $\frac{1}{2}$	4 $\frac{3}{8}$	Do.	Capt. C. C. West.
11 $\frac{1}{4}$	4 $\frac{1}{4}$	4 $\frac{3}{4}$	Do.	F. B. Gall.
11 $\frac{1}{4}$	4 $\frac{3}{4}$	4	Do.	Major R. McDouall.
11	4 $\frac{1}{2}$	3 $\frac{1}{2}$	Do.	C. S. Burnett.
11	4 $\frac{1}{4}$	4 $\frac{5}{8}$	Do.	Major J. G. Browne.
11	4 $\frac{3}{4}$	4 $\frac{5}{8}$	Do.	Capt. Lord Henry Seymour.
♀ 9 $\frac{1}{2}$	2 $\frac{1}{2}$	4 $\frac{1}{2}$	Do.	Capt. L. C. Brodie.

B.—EASTERN RACE (*G. ruffrons lævipes*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{5}{8}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	White Nile	Lieut.-Col. J. W. Yardley.
13 $\frac{1}{4}$	4 $\frac{3}{8}$	6 $\frac{3}{8}$	Kordofan	B. Chew.
13	5 $\frac{1}{2}$	8	White Nile	F. W. Greswolde-Williams.
13	4 $\frac{5}{8}$	4 $\frac{5}{8}$	Do.	Capt. R. F. Balfour.
13	4 $\frac{1}{2}$	...	Do.	Capt. A. H. Vivian.
12 $\frac{7}{8}$	4 $\frac{1}{4}$	5 $\frac{1}{2}$	Kordofan	Col. A. Colville.
12 $\frac{3}{4}$	4 $\frac{1}{2}$	7 $\frac{3}{8}$	Do.	Capt. C. E. Hills.
12 $\frac{3}{4}$	4 $\frac{4}{8}$	7	White Nile	Capt. B. W. Y. Danford.
12 $\frac{5}{8}$	4 $\frac{7}{8}$	7	Do.	R. McD. Hawker.
12 $\frac{5}{8}$	4 $\frac{3}{4}$	4 $\frac{1}{4}$	Kordofan	Capt. B. H. S. Romilly
12 $\frac{5}{8}$	4 $\frac{5}{8}$	6 $\frac{5}{8}$	White Nile	H. Cookson.
12 $\frac{1}{2}$	5	5	Do.	Capt. E. Berry.
12 $\frac{1}{2}$	4 $\frac{3}{8}$	6 $\frac{1}{4}$	Do.	Capt. J. C. Graham.
12 $\frac{1}{2}$	4 $\frac{1}{2}$	6	Do.	J. C. Phillips.
12 $\frac{1}{2}$	5	5 $\frac{1}{2}$	Kordofan	Sir Robert Harvey, Bart.
12 $\frac{3}{8}$	5	4 $\frac{1}{4}$	White Nile	C. Cookson.
12 $\frac{3}{8}$	5	5 $\frac{3}{4}$	Do.	R. H. Willan.
12 $\frac{1}{4}$	4 $\frac{9}{16}$	5 $\frac{3}{8}$	Do.	Lieut.-Gen. Sir B. T. Mahon.
12 $\frac{1}{4}$	4 $\frac{1}{2}$	5 $\frac{3}{4}$	Do.	C. Bower Ismay.
12 $\frac{1}{8}$	4 $\frac{3}{4}$	5 $\frac{1}{4}$	Do.	Col. H. W. Guinness.
12	4 $\frac{3}{4}$	6	Do.	Norman B. Smith.
12	4 $\frac{5}{8}$	5 $\frac{5}{8}$	Do.	Major J. F. Wolseley.
12	4 $\frac{1}{4}$	6	Do.	Lieut. W. B. Drury, R.N.
12	4 $\frac{3}{8}$	5 $\frac{1}{4}$	Do.	T. D. M. Cardeza.
12	4 $\frac{3}{4}$	4 $\frac{1}{4}$	Kordofan	Lieut.-Col. C. J. Hawker.
12	5	6	Sudan	A. L. Butler.
♀ 10 $\frac{1}{2}$	2 $\frac{3}{8}$	2 $\frac{3}{4}$	Kordofan	G. L. Harrison.



Head of Mongala Gazelle.
From the type specimen.

MONGALA GAZELLE (*Gazella albonotata*).

Closely allied to *G. thomsoni*, of which it may be merely a race.

Distribution.—According to the late Capt. H. S. Logan, from Gondokoro, in Uganda, to Bor, in the Mongala district of the Sudan, on the Abyssinian side of the Bahr-el-Gebel.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
12 $\frac{3}{4}$	4 $\frac{1}{4}$	6 $\frac{1}{4}$	Mongala . . .	Capt. P. E. Vaughan.
12 $\frac{5}{8}$	4 $\frac{3}{4}$	4	Do. . . .	P. Niedieck.
12 $\frac{1}{2}$	4 $\frac{3}{8}$	6 $\frac{1}{4}$	Do. . . .	Major A. W. Jennings Bramly.
12	5	3	Do. . . .	Duke of Alba.
12	4 $\frac{3}{4}$	5	Do. . . .	Capt. E. E. B. Mackintosh.
11 $\frac{1}{2}$	5	5	Do. . . .	Capt. R. F. Balfour.
11 $\frac{3}{4}$	4 $\frac{1}{4}$	5	Do. . . .	Capt. B. W. Y. Danford.
11 $\frac{1}{4}$	4 $\frac{1}{4}$	3 $\frac{3}{4}$	Do. . . .	Major P. M. Dove.
11	4 $\frac{1}{4}$	4 $\frac{1}{4}$	Do. . . .	Capt. P. A. Wilson.
10 $\frac{7}{8}$	4 $\frac{1}{2}$	3	Pibor River . . .	Col. J. J. Asser.
10 $\frac{7}{8}$	4 $\frac{1}{2}$	3 $\frac{3}{8}$	Mongala . . .	J. V. Colby.
10	4 $\frac{5}{8}$	5 $\frac{1}{8}$	Do. . . .	Hon. Walter Rothschild. (Type specimen.)
♀ 4 $\frac{3}{8}$	1 $\frac{1}{8}$	1 $\frac{1}{2}$	Do. . . .	C. Logan.



Heads of Thomson's Gazelle.

THOMSON'S GAZELLE (*Gazella thomsoni*).

Swalla, Swahili. *Engoli*, Masai.

The distinct black nose-spot, the pure white eye-streak, and the great depth of the black flank-band serve to distinguish this species from *G. rufifrons*; with which it agrees in the general form of the horns. The prevailing colour of the upper parts is deep sandy rufous, with all the markings well developed and sharply defined; the central face-streak being a deeper rufous mingled with black, and having a black spot, and the light flank-band present, although only slightly paler than the back. There is also a narrow black band bordering the white on the sides of the rump. The horns are long, and rather like those of the Indian gazelle on an enlarged scale. Height at shoulder of males, from about 25 to 27 inches; of females, about $23\frac{1}{2}$ inches. Weight of bucks, from 52 to 62 lbs.; of does, about 32 lbs. The species has been divided by a German naturalist into a number of races, but at least many of these can scarcely be regarded as valid.

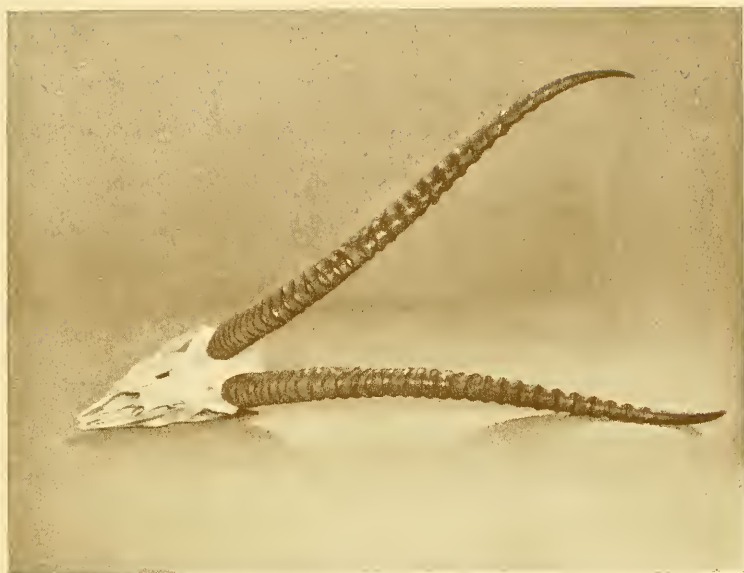
Distribution.—The interior districts of British and German East Africa, from Lake Rudolf southwards to Irangi.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16½	5	4¼	East Africa	H. Fowler.
16¼	4½	5	Do.	Earl of Kingston.
16	4⅝	4½	Do.	W. A. Baird.
16	4¾	3⅞	Do.	Lady Margaret Loder.
15⅞	4½	5⅝	Do.	J. G. Millais.
15¾	4½	7	Do.	Sir Richard Dane.
15¾	5	4⅝	Do.	R. de la Huerta.
15¾	5¼	4¾	Do.	H. Irvine.
15¾	4¾	6	Do.	W. N. McMillan.
15¾	4⅞	4½	Do.	C. W. Turner.
15¾	5	4¾	Do.	W. P. Lowe.
15¾	4½	5½	Do.	Major H. B. Dalgety.
15¾	4⅝	3⅝	Do.	C. J. Murray.
15½	4½	6½	Do.	E. M. Crosfield.
15½	5	3⅞	Do.	F. W. Belt.
15½	4¾	5½	Do.	Duke of Penderanda.
15½	4¾	3¾	Do.	Sir F. J. Jackson.
15½	4½	3	Do.	Capt. M. L. Pears.
15½	4¼	5¾	Do.	G. Henry.
15¾	4¾	5	Do.	Stephenson R. Clarke.
15¾	5½	4⅝	Do.	G. P. L. Cosens.
15¾	4⅝	3	Do.	The Master of Belhaven.
15¼	4¾	5¼	Do.	N. C. Cockburn.
15¼	4¾	4¾	Do.	British Museum (Sir F. J. Jackson).
15¼	4½	4⅝	Do.	Major A. E. Smith.
15¼	4¾	5	Do.	Guy Fenwick.
15¼	5	4⅞	Do.	C. B. C. Storey.
15¼	5	3¼	Do.	Gerard Buxton.
15¼	4½	11¾	Do.	F. C. Cobb.
15⅝	4¾	6	Do.	Sir J. Hume Campbell, Bart.
15⅝	4¾	5¾	Do.	Lord Basil Blackwood.
15⅝	4⅝	6	Do.	Capt. C. Brook.
15⅝	5⅝	5	Do.	I. N. Dracopoli.
15⅝	5	6⅝	Do.	Major W. E. Stobart.
15	4¾	4	Do.	H. B. Tate.
15	4½	5¼	Do.	Major C. U. Price.
15	4¼	5¾	Do.	B. Dominick.
15	5	4	Do.	J. F. Franks.
15	4¼	4⅝	Do.	Capt. W. H. Wilkin.
15	5	5¾	Do.	F. Santos Saurez.
15	4⅝	4¾	Do.	Capt. R. A. McClymont.
15	5	4	Do.	W. J. Barry.
15	5	6	Do.	Lord Wodehouse.

OWNER'S MEASUREMENTS:

16⅝	5½	5¼	German East Africa	S. E. White.
16	4½	2	East Africa	C. S. Mann.
♀ 6½	2	2½	Do.	C. Steuart Betton.



Skull and Horns of Grant's Gazelle.

GRANT'S GAZELLE (*Gazella* [*Nanger*] *granti*).*Suara*, Swahili.*Ngoli*, Nodorobo.

This handsome species is the first of a group of gazelles characterised by their large size and by the fawn colour of the back being encroached upon to a greater or less degree by the white of the rump. In this species the horns are very long and typically lyrate; there is a dark streak on the front border of each side of the rump-patch; the middle face-streak is chestnut, with a black nose-spot; and the tail, with the exception of the black crest, is either wholly white, or sandy above and white beneath. On the neck and back the hair has a peculiar wavy appearance, recalling that of watered silk. Height at shoulder, from about 32 to 34 inches; weight of male, from about 150 to 165 lbs., when cleaned, about 115 lbs.

Distribution.—East Africa; throughout Masailand, Kilimanjaro, north of Baringo, Mount Elgon, and the Suk country; generally on open grass-lands. In *G. granti typica*, of the interior of East Africa, the flank-bands are faint in the adult, and the fawn area does not extend far on to the white of the rump-patch. In the Usukuma race, *G. g. robertsi*, the horns show a peculiar outward twist, so that their points are far apart. In the Tana *G. g. petersi* the stature is smaller, the horns are nearly straight, and the fawn

of the back extends along the middle of the upper surface of the tail. In the Loroghi *G. g. notata* the flank-bands are very distinct with a dark one above and below the light one, and the horns are nearly straight. The Lado *G. g. brighti* is a small race, without dark flank-bands, and a narrow black border to the rump-patch. The Abaya *G. g. lacuum*, which is also rather small, has a dark flank-band in the young, and horns of the *petersi* type.

A.—Many of the following belong to the **TYPICAL RACE.**

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
29	7	14	East Africa . . .	R. O. Preston.
29	6½	20¾	Do. . . .	Sheffield Neave.
28¾	6¾	13¾	Do. . . .	A. Fowler.
28¾	6¾	17½	Do. . . .	Capt. F. W. Barrett.
28¼	6½	15½	Do. . . .	Sir F. J. Jackson.
28¼	6½	13½	Do. . . .	Capt. E. C. Hamilton.
28¼	7	17½	Do. . . .	Lord Wodehouse.
28	7	21	Do. . . .	K. V. Painter.
28	7½	16	Do. . . .	Douglas M'Douall.
28	6¾	24¾	Do. . . .	Capt. N. E. Playfair.
27¾	6¾	18¾	Do. . . .	H. C. V. Hunter.
27¾	6¾	14	Do. . . .	J. Jay White.
27¾	6¾	11	Do. . . .	C. C. Wilson.
27¾	7	18	Do. . . .	Major G. E. Tuson.
27¾	7¼	16¾	Do. . . .	W. H. Levy.
27½	6½	6½	Do. . . .	Capt. A. Neave.
27½	7	17	Do. . . .	Capt. D. H. Macdonell.
27½	7¼	13	Do. . . .	Lieut.-Col. G. S. McLoughlin.
27½	7	17¾	Do. . . .	R. B. Loder.
27¾	6¾	20¾	Do. . . .	H. Fowler.
27¼	6¾	8¾	Do. . . .	R. B. Seager.
27¼	6½	18¾	Do. . . .	Sir Robert Harvey, Bart.
27¼	7	19	Do. . . .	Marquis of Waterford.
27¼	7	16¼	Do. . . .	E. H. Litchfield.
27	7	15¼	Do. . . .	A. J. A. Douglas.
27	7	12½	Do. . . .	H. T. Barclay.
27	7	20	Do. . . .	Major Lord J. S. Cavendish.
27	6¾	14¼	Do. . . .	Dr. A. E. Herz.
27	7½	14¾	Do. . . .	L. M. Douglas.
27	7	16¾	Do. . . .	Hugh G. Barclay.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
27	6½	22½	East Africa . . .	G. Williams.
27	6½	11¾	Do. . . .	C. W. Fuller.
27	7	14⅞	Do. . . .	C. Fahnestock.
27	6½	10	Do. . . .	Sir Owen Phillips.
26¾	7¼	14½	Do. . . .	J. G. Millais.
26¾	7	14½	Do. . . .	A. Bayley-Worthington.
26¾	6½	12½	Do. . . .	Capt. W. H. Wilkin.

OWNER'S MEASUREMENTS.

30¼	7¾	20	Kilimanjaro . . .	Major F. A. Dickinson.
28½	7	15¾	Do. . . .	C. S. Mann.
♀ 26½	5½	19¼	Do. . . .	Nairobi Club.

Skull and Horns of *G. granti robertsi*.*B.*—USUKUMA RACE (*G. granti robertsi*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
29	6¾	23½	?	W. N. McMillan.
28	...	28½	Kedong Valley . . .	Capt. R. S. Hart.
28	6¼	29	?	Capt. C. Brook.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
*27 $\frac{1}{2}$	6 $\frac{1}{2}$	22	Lemek Valley . . .	Capt. the Hon. O. H. Stanley.
26 $\frac{3}{4}$	6 $\frac{1}{2}$	20 $\frac{1}{4}$	East Africa . . .	Mrs. A. K. Muir.
26 $\frac{3}{4}$	6 $\frac{1}{4}$	20	Do. . . .	C. Bower Ismay.
26 $\frac{3}{8}$	6	22 $\frac{1}{2}$	Do. . . .	H. Johnson.
26 $\frac{1}{4}$	5 $\frac{3}{4}$	23 $\frac{3}{8}$	Do. . . .	A. Fowler.
26 $\frac{1}{4}$	6 $\frac{1}{2}$	25 $\frac{1}{4}$	Do. . . .	H. Sampson.
26 $\frac{1}{4}$	6 $\frac{1}{8}$	25 $\frac{3}{8}$	Do. . . .	H. Fowler.
26 $\frac{1}{4}$	6 $\frac{3}{8}$	19 $\frac{3}{4}$	Do. . . .	H. R. M'Clure.
26 $\frac{1}{4}$	6	17 $\frac{3}{4}$	Do. . . .	G. P. L. Cosens.
26 $\frac{1}{4}$	6	26 $\frac{1}{2}$	Do. . . .	R. B. Muir.
26 $\frac{1}{4}$	6 $\frac{1}{4}$	24	Do. . . .	J. F. Franks.
25 $\frac{1}{2}$	6	18 $\frac{1}{2}$	Do. . . .	Capt. H. C. S. Ashton.
25 $\frac{3}{8}$	5 $\frac{7}{8}$	25 $\frac{3}{4}$	Do. . . .	Capt. H. C. Hart.
24 $\frac{3}{4}$	6	18 $\frac{1}{4}$	Do. . . .	F. C. Stern.
24 $\frac{1}{2}$...	28	German East Africa .	British Museum (F. Russell Roberts and G. Blaine).

OWNER'S MEASUREMENTS.

28 $\frac{1}{8}$	5 $\frac{1}{2}$	38 $\frac{1}{2}$	Sotik	R. J. Cuninghame.
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* Determination provincial.

C.—TANA RACE (*G. granti petersi*).*Distribution.*—Coast districts of East Africa.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
23 $\frac{3}{4}$	6 $\frac{1}{2}$	11	E. Africa	Capt. R. Meinertzhagen.
22 $\frac{1}{2}$	6 $\frac{3}{8}$	8	Voi	Sir Edmund G. Loder, Bart.
22 $\frac{1}{8}$	6 $\frac{3}{8}$	5 $\frac{7}{8}$	Mherereni	British Museum (Sir F. J. Jackson).
22	5 $\frac{3}{4}$	7 $\frac{1}{8}$	Tana Valley	G. Blaine.
21 $\frac{3}{4}$	6 $\frac{1}{2}$	11	?	Major L. Boyd-Moss.
21 $\frac{1}{2}$	6 $\frac{7}{8}$	8 $\frac{3}{4}$	?	T. F. V. Buxton.
21 $\frac{1}{4}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	?	C. S. Mann.
21	6 $\frac{1}{2}$	9	Tana Valley	C. H. Young.
20 $\frac{1}{2}$	5 $\frac{1}{4}$	9 $\frac{1}{2}$	Do. . . .	Capt. C. Hankey.
20 $\frac{1}{2}$	5 $\frac{3}{4}$	5 $\frac{5}{8}$	Do. . . .	Major H. De Prée.



Head of Sæmmerring's Gazelle.

The **AOUL** or **SÆMMERRING'S GAZELLE** (*Gazella* [Nanger] *sæmmerringi*).

Aoul, Somali.

Meidafihel, Abyssinian.

Maédedo, Danakil.

Ariel, Sudani.

In this species the white of the rump-patch intrudes more into the fawn-area than in *granti*; there is generally no black streak dividing the sides of the rump-patch from the fawn of the body, the face-markings are black, and the horns, which are shorter and more massive than in *granti*, hook inwards at the tips. The tail, except for its black crest, is white. Height at shoulder, about $35\frac{1}{2}$ inches. Weight, clean, about 90 lbs.

Distribution.—The Abyssinian coast of the Red Sea, Berber, East Sennar, Danakil, Bora-Gallaland, and Somaliland; in the latter country occurring all over the Haud and Ogaden. The North Somali *G. s. berberana* is larger and darker than the typical form, with differently curved horns.

A.—**SOMALI RACE** (*G. sæmmerringi berberana*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
23	$4\frac{7}{8}$	$13\frac{1}{2}$	Somaliland . . .	G. H. Kirkpatrick.
21	$5\frac{1}{4}$	10	Do.	Major P. H. G. Powell-Cotton.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
21	6 $\frac{1}{4}$	4 $\frac{3}{4}$	Somaliland . . .	Col. V. M. Stockley.
20 $\frac{3}{4}$	6 $\frac{3}{4}$	...	Do.	W. N. McMillan.
20 $\frac{3}{4}$	5 $\frac{3}{4}$	3 $\frac{5}{8}$	Do.	G. H. Cheetham.
20 $\frac{1}{4}$	6	4 $\frac{5}{8}$	Do.	Norman B. Smith.
20 $\frac{1}{4}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	Do.	Capt. A. E. Burnett.
20 $\frac{1}{4}$	5 $\frac{3}{4}$	3	Do.	Capt. J. W. C. Kirk.
20 $\frac{1}{4}$	5 $\frac{1}{4}$	6 $\frac{3}{4}$	Do.	Capt. A. E. H. Breslin.
20 $\frac{1}{4}$	5 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Major F. Rowley.
20	5 $\frac{1}{4}$	5 $\frac{5}{8}$	Do.	Hon. Walter Rothschild.
20	5 $\frac{3}{4}$	4	Do.	Lieut.-Col. J. W. H. Flanagan.
20	6	7 $\frac{1}{4}$	Do.	A. Louw.
20	5 $\frac{1}{4}$	5 $\frac{1}{2}$	Danakil	Viscount Edmond de Poncins.
♀-20	...	5 $\frac{3}{4}$	Somaliland	A. E. Pease.
20	5 $\frac{1}{2}$	5 $\frac{1}{4}$	Do.	Capt. H. du B. O'Neill.
20	5 $\frac{7}{8}$	...	Do.	Maj.-Gen. Sir A. N. Rochfort.
20	5 $\frac{1}{4}$	10 $\frac{7}{8}$	Do.	G. Blaine.
19 $\frac{3}{4}$	5 $\frac{1}{4}$	6 $\frac{3}{4}$	Do.	Sir Abe Bailey.
19 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{5}{8}$	Do.	T. W. H. Clarke.
19 $\frac{1}{2}$	5 $\frac{9}{10}$	2	Do.	Sir Edmund G. Loder, Bart.
19 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	Major J. J. Richardson.
19 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{5}{8}$	Do.	Count J. Potocki.
19 $\frac{1}{2}$	5 $\frac{1}{4}$	15 $\frac{1}{4}$	Do.	R. McD. Hawker.
19 $\frac{1}{4}$	5 $\frac{1}{4}$	4 $\frac{1}{2}$	Do.	Major B. L. Carew.
19 $\frac{1}{4}$	5 $\frac{3}{4}$	7 $\frac{3}{4}$	Do.	Capt. H. C. Dobbs.
19 $\frac{1}{4}$	5 $\frac{3}{4}$	7 $\frac{3}{4}$	Do.	P. K. Glazebrook.

- Owner's measurements.

B.—TYPICAL RACE (*G. sømmerringi typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17	5	5	Sudan	Count J. Potocki.
16 $\frac{3}{4}$	5 $\frac{1}{4}$	10	Do.	J. H. Butler.
16 $\frac{1}{2}$	5 $\frac{3}{4}$	3 $\frac{1}{2}$	Do.	Prince Colloredo Mannsfeld.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16 $\frac{3}{4}$	5	5 $\frac{1}{2}$	Sudan	C. D. Eyre.
16 $\frac{1}{4}$	6	8 $\frac{1}{2}$	Do.	W. H. Lindsay.
16	5 $\frac{1}{4}$	5	Do.	Commr. A. H. Home, R.N.
16	5	4 $\frac{1}{2}$	Do.	Capt. N. A. Orr-Ewing.
16	5	3 $\frac{1}{4}$	Do.	G. L. Harrison.
16	4 $\frac{1}{2}$	5 $\frac{1}{4}$	Do.	Col. A. Colville.
16	5 $\frac{1}{2}$	3	Do.	H. G. Watson.
15 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{1}{4}$	Do.	W. H. Diggle.
15 $\frac{3}{4}$	5 $\frac{1}{2}$	5 $\frac{3}{4}$	Do.	Major H. H. S. Morant.
15 $\frac{5}{8}$	5 $\frac{1}{2}$	5	Do.	C. Bower Ismay.
15 $\frac{1}{2}$	5 $\frac{1}{4}$	3 $\frac{3}{4}$	Do.	Capt. P. C. Lord.
15 $\frac{1}{2}$	5 $\frac{3}{8}$	5	Do.	Col. Ralph Vivian.
15 $\frac{1}{2}$	5	5	Do.	Major Lord J. S. Cavendish.
15 $\frac{1}{2}$	5 $\frac{1}{4}$	6 $\frac{3}{4}$	Do.	Earl of Sefton.
♀ 15 $\frac{1}{4}$	2 $\frac{7}{8}$	7 $\frac{3}{8}$	Do.	The late Lieut.-Col. Hon. W. Coke.
15 $\frac{1}{4}$	5	4 $\frac{1}{2}$	Do.	Miss C. Buxton.
15	5	4 $\frac{3}{4}$	Do.	H. S. Smiley.
15	5	6	Suakin	Hon. Walter Rothschild.
15	5 $\frac{1}{2}$	6 $\frac{3}{4}$	Sudan	F. W. Greswolde-Williams.
15	5 $\frac{3}{8}$	2 $\frac{5}{8}$	Do.	Hugh C. E. Ross.

C.—BORANI RACE (*G. sœmmerringi butteri*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{1}{4}$	4 $\frac{3}{4}$	3 $\frac{1}{2}$	Boraland	A. E. Butter.



Skull and Horns of Addra Gazelle.

The **DAMA, MHORR, or ADDRA GAZELLE** (*Gazella* [Nanger] *dama*).

Addra, Dongolese. *Riël*, Dinka. *Ariel*, Sudani.

The largest species of the genus *Gazella*, standing 36 or 37 inches at the shoulder, and characterised by the white of the rump including the tail (which may be tipped with fawn), coupled with the absence of a black border to the rump-patch and of a dark flank-band, and the forward hook of the tips of the horns. In the mhorr or Moroccan race (*G. d. mhorr*) of Southern Morocco there are dark face-markings, and the rufous of the body extends down the legs. In the Senegambian *G. d. permista* the rufous occupies a smaller area on the body, and there is only a narrow bridge connecting the rufous of the back with that of the hind-legs, while in the fore-legs the upper part is wholly white, and there is only a rufous streak in front below the knee. The typical *G. d. typica*, probably from Lake Chad, connects the mhorr with the addra or Kordofan race (*G. d. ruficollis*), in which the rufous is limited to the neck and a saddle-shaped area on the back.

Distribution.—The desert regions of northern, western, and north-eastern Africa, from Nigeria and Senegambia through Morocco to Kordofan.

A.—TYPICAL RACE (*G. dama typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{7}{8}$	5 $\frac{3}{4}$	8 $\frac{1}{2}$	Lake Chad	C. S. Burnett.
14	6 $\frac{1}{4}$	5 $\frac{1}{4}$	Do.	Capt. L. C. Brodie.
13 $\frac{7}{8}$	6 $\frac{1}{4}$	9	Do.	Capt. G. Bonham-Carter.
13 $\frac{3}{4}$	5 $\frac{1}{2}$	6 $\frac{3}{4}$	Do.	Capt. A. B. Baillie-Hamilton.
13 $\frac{3}{4}$	5 $\frac{3}{4}$	7 $\frac{1}{2}$	Do.	Major J. B. Cockburn.
13 $\frac{3}{4}$	5 $\frac{3}{4}$	3 $\frac{1}{4}$	Do.	Major D. F. MacCarthy Morrogh.
13 $\frac{5}{8}$	5 $\frac{7}{8}$	8 $\frac{5}{8}$	Do.	J. Goold-Adams.
13 $\frac{1}{2}$	5 $\frac{1}{4}$	6 $\frac{1}{2}$	Do.	F. Beccles Gall.
13 $\frac{3}{8}$	5 $\frac{3}{4}$	3	Do.	Capt. Lord Henry Seymour.
12 $\frac{1}{4}$	5 $\frac{3}{8}$	6	N. Nigeria	Capt. G. C. Kelly.
- ♀ 12 $\frac{1}{4}$	...	3 $\frac{1}{2}$	Lake Chad	C. S. Mann.
12 $\frac{1}{8}$	5 $\frac{1}{4}$	6 $\frac{3}{4}$	Do.	Sir F. J. Lugard.

B.—SENEGAMBIAN RACE (*G. dama permista*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
8 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{3}{8}$	?	Hon. Walter Rothschild.

C.—MHOOR or MOROCCAN RACE (*G. dama mhorr*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{3}{4}$	6	3 $\frac{3}{4}$	Wednoon, Mogador . .	British Museum (W. Willshire).

D.—ADDA or KORDOFAN RACE (*G. dama ruficollis*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{3}{4}$	6	11 $\frac{1}{2}$	Kordofan	Capt. B. H. S. Romilly.
15 $\frac{1}{2}$	5 $\frac{1}{4}$	8 $\frac{1}{4}$	Do.	Col. A. Colville.
15 $\frac{1}{4}$	5 $\frac{1}{8}$	15 $\frac{1}{2}$	Do.	Capt. C. E. Hills.
-15 $\frac{1}{4}$	5 $\frac{3}{4}$	6	Do.	H. A. MacMichael.

- Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-15	...	...	Kordofan	A. L. Butler.
-15	5 $\frac{5}{8}$	6 $\frac{1}{4}$	Do.	J. C. Phillips.
14 $\frac{7}{8}$	5	3 $\frac{7}{8}$	Do.	W. Mure.
14 $\frac{3}{4}$	6	7	Do.	Major H. G. F. Stallard.
14 $\frac{3}{4}$	5 $\frac{3}{4}$	10 $\frac{3}{4}$	Do.	G. L. Harrison.
14 $\frac{3}{4}$	4 $\frac{3}{4}$	9 $\frac{1}{4}$	Do.	Lord Villiers.
14 $\frac{3}{4}$	5 $\frac{1}{4}$	6 $\frac{5}{8}$	Do.	Norman B. Smith.
14 $\frac{3}{4}$	5 $\frac{1}{4}$	6 $\frac{1}{4}$	Do.	Walter Jones.
14 $\frac{5}{8}$	5 $\frac{3}{4}$	11 $\frac{7}{8}$	Do.	Sir Robert Harvey, Bart.
14 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{4}$	Do.	Lieut.-Col. C. J. Hawker.
14 $\frac{3}{8}$	5 $\frac{1}{2}$	5 $\frac{3}{8}$	Do.	Capt. R. A. McClymont.
14 $\frac{3}{8}$	5 $\frac{3}{4}$	8 $\frac{1}{8}$	Do.	Capt. G. M. Lumsden.
14 $\frac{3}{8}$	5	9 $\frac{3}{4}$	Dongola	Capt. W. H. Wilkin.
14 $\frac{1}{4}$	5 $\frac{1}{8}$	7 $\frac{1}{4}$	Kordofan	Capt. A. K. Hargreaves.
14	5	9 $\frac{1}{4}$	Dongola	Capt. the Hon. G. H. Douglas-Pennant.
14	5 $\frac{3}{4}$	7 $\frac{1}{2}$	Kordofan	Capt. B. W. Y. Danford.
13 $\frac{3}{4}$	5 $\frac{3}{8}$	4 $\frac{3}{4}$	Do.	Lieut.-Gen. Sir B. T. Mahon.
13 $\frac{3}{4}$	6	5 $\frac{1}{4}$	Do.	G. Chetwynd.
13 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{8}$	Do.	Capt. G. S. Cameron.
13 $\frac{1}{2}$	5 $\frac{1}{8}$	10 $\frac{3}{4}$	Do.	Capt. F. L. Livingstone-Learmonth.
13 $\frac{1}{2}$	5 $\frac{1}{4}$	11 $\frac{1}{4}$	Do.	Earl of Kingston.
12 $\frac{3}{4}$	6	5 $\frac{3}{4}$	Do.	Major C. S. Cumberland.
12 $\frac{3}{4}$	5 $\frac{1}{4}$	4	Do.	Hon. Walter Rothschild.
♀ 12 $\frac{3}{4}$	3 $\frac{3}{4}$	6 $\frac{1}{4}$	Do.	Lieut.-Gen. Sir B. T. Mahon.
12 $\frac{1}{2}$	5 $\frac{3}{8}$	6 $\frac{3}{8}$	Do.	E. N. Buxton.
12 $\frac{1}{4}$	4	5 $\frac{5}{8}$	Sennar	British Museum.

- Owner's measurements.



Horns of Springbuck. From a specimen in the American National Collection.

The SPRINGBUCK (*Antidorcas euchore* or *A. marsupialis*).

Springbok, Cape Dutch.

Itsaypi, Maklaka.

Tsipi, Bechuana.

Menya, Angola.

Although nearly allied to the preceding group of large gazelles, the springbuck presents a peculiarity entitling it to be regarded as the representative of a genus by itself. This peculiarity is the presence of a fold, or narrow pouch, running down the middle of the hinder part of the back, and lined with long pure white hairs. In periods of excitement this pouch is capable of being turned partially inside-out, when the long white hairs are erected, and give a totally different appearance to this region of the animal. With the exception of a chestnut eye-streak, and in one form of a patch of the same colour at the base of the horns, the springbuck has the whole face white; and the white on the rump, which includes the tail and joins that of the middle of the back, also occupies a large area. Height at shoulder, 30 inches. Weight, from 70 to 80 lbs.

Distribution.—The plains of Southern Africa, extending in the central districts of the continent to about latitude 20° S., where its limits are defined by the forests to the south of the Mabebi River; in the west ranging as far north as Mossamedes and Benguela in Southern Angola, and in the east at least up to the Limpopo. Although now

never found in the countless thousands which formerly swarmed over the plains of the Transvaal and Bechuanaland, springbuck are still abundant in many districts. Protected to a certain degree by law, they are to be met with in parts of Cape Colony and the Orange River Colony; while on the plains bordering the Botlitli and the neighbouring salt-pans, as well as in Great Namaqualand, Damara-land, and the Ovampo Flats, they occur in large numbers. Springbuck-stalking on the open veldt affords excellent rifle-practice; zest being added to the sport from the fact that the venison is most excellent for the table.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
119	5	$20\frac{1}{4}$	Kalahari	The late W. F. Webb.
$16\frac{3}{4}$	6	6	?	J. Rosen.
16	6	7	?	W. A. Simpson Hinchliffe.
$15\frac{3}{4}$	...	...	?	J. G. Millais.
$15\frac{1}{2}$	$6\frac{1}{2}$	$7\frac{1}{4}$	?	Hon. T. Thynne.
$15\frac{1}{2}$	$6\frac{1}{4}$	5	?	Sir Abe Bailey.
$15\frac{1}{2}$	$6\frac{1}{8}$	$3\frac{1}{2}$	Cape Colony	C. D. Rudd.
$15\frac{1}{2}$	6	$2\frac{3}{4}$	S. of Great Namaqualand	Th. Rehbock.
$15\frac{1}{4}$	$5\frac{1}{2}$	7	Orange River Colony .	Sir H. J. Goold-Adams.
$15\frac{1}{4}$	$6\frac{1}{2}$	$3\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
$15\frac{1}{8}$	$5\frac{1}{2}$	7	?	Major W. Anstruther Gray.
$15\frac{1}{8}$	$6\frac{1}{4}$	$5\frac{7}{8}$	Ovampo Flats	The late Capt. F. Cookson.
15	$5\frac{3}{4}$	7	?	The late George Grey.
15	$5\frac{1}{2}$	$8\frac{1}{4}$	?	Major E. J. Lugard.
$14\frac{1}{2}$	$5\frac{3}{4}$	$4\frac{1}{2}$	?	C. L. Blundell.
$14\frac{1}{4}$	$6\frac{1}{4}$	5	?	C. Ansell.
$14\frac{1}{4}$	6	$2\frac{3}{4}$	?	C. Challis.
14	6	$2\frac{1}{4}$	Ngamiland	F. T. Garbutt.
14	$5\frac{3}{4}$	$4\frac{1}{4}$	?	British Museum.
14	$6\frac{1}{8}$	$6\frac{1}{2}$	?	Sir Owen Philipps.
14	6	3	?	Hon. J. C. Lyttelton.
14	$5\frac{1}{2}$	5	?	F. E. Potter.
14	6	$2\frac{1}{2}$	?	N. H. Barton.
$13\frac{7}{8}$	6	$5\frac{3}{8}$	Griqualand	F. C. Selous.

¹ A malformed specimen.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{3}{4}$	6	5 $\frac{3}{4}$	?	Earl of Kingston.
13 $\frac{5}{8}$	5 $\frac{1}{4}$	5 $\frac{5}{8}$	Benguela	G. W. Penrice.
13 $\frac{5}{8}$	5 $\frac{1}{2}$	4 $\frac{1}{4}$	Angola	C. W. Sharp.
13 $\frac{1}{2}$	5 $\frac{1}{4}$	3 $\frac{1}{4}$	Orange River Colony .	Capt. V. C. de Crespigny.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	5	Angola	A. H. Harrison.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	5	Ngamiland	H. A. Bryden.
13 $\frac{1}{2}$	5 $\frac{3}{4}$	4 $\frac{1}{2}$	Near Kimberley . . .	G. L. Harrison.
♀ 13 $\frac{1}{2}$	4	6 $\frac{3}{4}$	?	Sir Abe Bailey.

OWNER'S MEASUREMENTS.

19 $\frac{1}{8}$	6	7 $\frac{1}{4}$	Near Beaufort West .	W. H. Allhusen.
...	...	12 $\frac{1}{2}$	?	P. C. Keytel.
17	...	...	Middelburg Flats . .	American National Collection. (See illustration, page 275.)
16 $\frac{1}{2}$	...	...	Bechuanaland . . .	Vryburg Club.
16	...	6 $\frac{1}{2}$	Griqualand West . .	Capt. G. S. Leslie.
15 $\frac{3}{4}$	5	2 $\frac{1}{8}$	German S.W. Africa .	H.R.H. Prince George of Bavaria.
15 $\frac{1}{2}$	6	.	?	Dr. Maloney.



Head of Springbuck.



Head of Gerenuk.

The **GERENUK** or **WALLER'S GAZELLE** (*Lithocranius walleri*).

Gerenuk, Somali. *Gudan Godu*, Danakil. *Gūgūfto*, Galla.

The gerenuk is easily recognised by the great elongation of the neck and the slender legs, which are lengthened in proportion. Horns are wanting in the females, and those of the males curve forwards at the tips, where the ridges stop, in a peculiarly characteristic manner. The general colour of the upper parts is deep rufous fawn, but down the middle of the back runs a broad brown band, nearly eight inches in width. The skull is characterised by its dense and solid structure, as well as by its straightness, the shortness of the facial portion, and the very small size of the cheek-teeth. Height at shoulder, from about 36 to 41 inches; weight, 115 lbs.

This antelope, first described by the late Sir Victor Brooke, is in the habit of raising itself on its hind-legs when browsing, and

is thus enabled to reach boughs at a very considerable distance above the ground.

Mr. Oscar Neumann pointed out in 1899 that the Somali and Abyssinian gerenuk (*L. walleri sclateri*) is somewhat different from the East African or typical gerenuk. The northern race is larger, with finer horns, a longer neck, a less rufous colour, and brown instead of black knee-tufts, while the white markings of the tail are also different.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17	5 $\frac{1}{4}$	3 $\frac{3}{4}$	Somaliland . . .	H.R.H. the Duc d'Orléans.
16 $\frac{1}{2}$	5 $\frac{1}{2}$	1 $\frac{5}{8}$	Do.	Mr. Justice Hopley.
16	5 $\frac{3}{4}$	6	Do.	Sir Edmund G. Loder, Bart.
16	5 $\frac{1}{4}$	2 $\frac{3}{4}$	East Africa . . .	W. H. Levy.
15 $\frac{1}{2}$	5 $\frac{1}{2}$	3	Somaliland . . .	J. Kenneth Foster.
-15 $\frac{1}{2}$	5 $\frac{7}{8}$	4 $\frac{7}{8}$	Do.	American National Collection.
15 $\frac{3}{8}$	5 $\frac{5}{8}$	4	Do.	Col. H. G. C. Swayne.
15 $\frac{3}{8}$	5 $\frac{3}{8}$	4 $\frac{1}{8}$	Do.	C. Liddell.
15 $\frac{3}{8}$	5 $\frac{3}{8}$	4 $\frac{1}{4}$	Do.	Lord Wolverton.
15 $\frac{1}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	Sir Abe Bailey.
15 $\frac{1}{4}$	5 $\frac{1}{2}$	2 $\frac{3}{4}$	East Africa . . .	R. B. Loder.
15 $\frac{1}{4}$	5 $\frac{7}{8}$	5 $\frac{3}{4}$	Do.	Capt. F. Blacker.
15 $\frac{1}{8}$	5 $\frac{1}{2}$	2 $\frac{1}{2}$	Do.	R. L. Scott.
15	5 $\frac{1}{2}$	1 $\frac{7}{8}$	Do.	Capt. R. Clemm.
15	5 $\frac{1}{2}$	5 $\frac{3}{8}$	Do.	P. F. Hadow.
15	5 $\frac{1}{2}$	4 $\frac{1}{2}$	Do.	J. E. R. Oldfield.
15	5 $\frac{3}{8}$	6 $\frac{3}{8}$	Somaliland . . .	F. G. Gunnis.
15	5	4 $\frac{1}{4}$	Do.	Lieut.-Col. J. McCall Maxwell.
15	5 $\frac{3}{4}$	4 $\frac{1}{2}$	Do.	Capt. H. Maclean.
14 $\frac{7}{8}$	5 $\frac{1}{2}$	6	East Africa . . .	P. Fleming.
14 $\frac{3}{4}$	5	...	Abyssinia . . .	N. C. Cockburn.
14 $\frac{3}{4}$	5 $\frac{1}{2}$	5 $\frac{1}{4}$	East Africa . . .	G. de P. Colville.
14 $\frac{3}{4}$	5 $\frac{3}{4}$	5 $\frac{3}{4}$	Somaliland . . .	Lieut.-Col. H. G. Mainwaring.
14 $\frac{3}{4}$	5 $\frac{5}{8}$	4 $\frac{1}{2}$	East Africa . . .	C. C. Wilson.
14 $\frac{3}{4}$	5 $\frac{1}{4}$	2 $\frac{1}{4}$	Do.	Lieut.-Col. J. H. Patterson.
14 $\frac{3}{4}$	5	3	Do.	Col. C. F. Blane.
14 $\frac{3}{4}$	6	4 $\frac{3}{4}$	Do.	C. Frick.
14 $\frac{5}{8}$	5 $\frac{1}{4}$	5	Do.	C. Bower Ismay.
14 $\frac{5}{8}$	5 $\frac{3}{8}$	3 $\frac{3}{4}$	Somaliland . . .	A. de L. Long.
14 $\frac{1}{2}$	5 $\frac{3}{4}$	6 $\frac{1}{2}$	East Africa . . .	H. S. L. Scott.
14 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Do.	Capt. the Hon. G. H. Douglas-Pennant.
14 $\frac{1}{2}$	5 $\frac{1}{2}$	2 $\frac{3}{4}$	Do.	Hon. W. Guinness.
14 $\frac{1}{2}$	5	4 $\frac{3}{8}$	Do.	A. F. Williams.

- Owner's measurements.



Head of Sable Antelope.

The SABLE ANTELOPE (*Hippotragus niger*).*Impengo*, Masubia.*Impalampala*, Swazi and Zulu.*Ukwa*, Makuba.*Potoquani*, Southern Bechuana.*Pala-hala*, Swahili.*Pala-pala*, Makalaka.*Solupi*, Masara.*Qualata inchu*, Bamangwato and Makololo.*Ujjieli*, Amandebili.*Kwalata n'tso*, Barotsi.*Qualata Tshumu*, Ngami.*Mperembi*, Chilala and Chibisa.*Mpalari*, M'Rua.*Kantanta*, Chila.

Among the leading features of the group of antelopes which includes the present species, the roan antelope, the gemsbuck, addax, etc., are the scimitar-shaped, conical, or spiral horns, which are placed just over the eyes and are present in both sexes, the hairy muzzle, the absence of face-glands, and the long, tufted tail. The upper molar teeth have square grinding-surfaces and tall crowns, like those of oxen. Several of the species have face-markings like those of the gazelles, to which the group is probably related. There are four teats.

From the other members of the group the beautiful sable antelope and its near ally the roan antelope are well distinguished by the scimitar-shaped horns, which arise at an obtuse angle with the plane of the face, as well as by the maned neck, the tufts of long white hair

below the eyes, and the large ears. By far the handsomer of the two is the present species, whose sable coat and great length of horn render the buck the most striking of its tribe. Other distinctive features are the continuance of the white eye-stripe to the muzzle, the length of the mane, and the relatively moderate size of the ears. The sable antelope when wounded is a dangerous antagonist, to be approached with extreme caution; it runs with considerable speed, and possesses much staying power. Height at shoulder, about $4\frac{1}{2}$ feet. A single horn in the Florence Museum, measured by Mr. F. C. Selous, is 61 inches on the front curve; and other specimens approximating to, or even exceeding this length are in existence.

Distribution.—From about the centre of the Transvaal northwards to Nyasaland and the adjacent districts of South-East and East Africa, and westwards to Angola. Still abundant in parts of Eastern Mashonaland, and thence towards the coast, as well as on the Batoka plateau to the north of the Zambesi. Scarcer in Central East Africa and Mozambique.

A.—TYPICAL RACE.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
60	$10\frac{5}{8}$	$17\frac{5}{8}$	Angola	J. C. Phillips.
$58\frac{1}{4}$	$9\frac{5}{8}$	$13\frac{3}{4}$	Do.	J. W. Walker.
56	$10\frac{1}{4}$	$13\frac{3}{8}$	Do.	Sir Edmund G. Loder, Bart.
55	$9\frac{5}{8}$	$14\frac{3}{8}$	Do.	Sir Abe Bailey.
$53\frac{5}{8}$	$9\frac{1}{4}$	$23\frac{1}{2}$	Do.	American National Collection.
$52\frac{1}{8}$	10	$23\frac{1}{2}$	Do.	Major Boyd A. Cuninghame.
51	$10\frac{1}{2}$	11	N.W. Rhodesia	Capt. A. P. Heneage.
$50\frac{7}{8}$	$9\frac{1}{2}$	$18\frac{1}{4}$	Do.	Hon. Walter Rothschild.
$50\frac{3}{4}$	$9\frac{1}{2}$	$24\frac{3}{8}$	N.E. Rhodesia	R. D. Waterhouse.
$50\frac{1}{4}$	10	$19\frac{1}{2}$	N.W. Rhodesia	G. F. Williams.
$50\frac{1}{8}$	$9\frac{1}{4}$	$23\frac{3}{4}$	Do.	Capt. C. G. Leslie.
50	$10\frac{1}{8}$	$7\frac{1}{4}$	Do.	Norman B. Smith.
50	$10\frac{3}{8}$	$10\frac{1}{4}$	Do.	Earl of Kingston.
$49\frac{3}{4}$	10	$12\frac{5}{8}$	Do.	Capt. W. F. Reichwald.
$49\frac{3}{8}$	$10\frac{7}{8}$	12	Do.	T. P. Kempson.
49	10	$17\frac{3}{4}$	S. Rhodesia	A. T. Reid.
$48\frac{3}{4}$	$9\frac{1}{4}$	$10\frac{1}{2}$	N.W. Rhodesia	Lieut.-Col. R. W. R. Barnes.
$48\frac{3}{4}$	10	$23\frac{1}{4}$	Do.	J. H. Hayes.
$48\frac{3}{4}$	$9\frac{1}{2}$	$17\frac{1}{4}$	Do.	Capt. R. A. McClymont.
$48\frac{3}{8}$	$9\frac{1}{2}$	$12\frac{1}{2}$	Do.	J. H. Leche.
$48\frac{1}{2}$	$9\frac{1}{4}$	$22\frac{3}{4}$	Do.	E. Caldwell.
$48\frac{1}{4}$	$10\frac{1}{2}$	9	N.E. Rhodesia	W. A. Conduitt.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
48 $\frac{1}{4}$	10	20	N.W. Rhodesia . . .	Major P. A. Cox.
48	9	14 $\frac{3}{4}$	Do.	C. Phillips.
48	10 $\frac{1}{4}$	15 $\frac{3}{4}$	Matabililand . . .	Major J. P. Grenfell.
47 $\frac{3}{4}$	10 $\frac{3}{4}$	21	Do.	J. Bell.
47 $\frac{3}{4}$	10	23 $\frac{1}{2}$	Do.	R. T. Coryndon.
47 $\frac{3}{4}$	9 $\frac{3}{4}$	13 $\frac{1}{4}$	Do.	J. L. Philips.
47 $\frac{5}{8}$	10	13	Do.	Guy Nickalls.
47 $\frac{2}{3}$	9 $\frac{3}{4}$	11	Do.	Major E. de L. Hayes.
47 $\frac{1}{2}$	10	9	Do.	S. R. Price.
47 $\frac{1}{4}$	9 $\frac{7}{8}$	23 $\frac{1}{2}$	Do.	Col. C. Harding.
46 $\frac{3}{4}$	10	21 $\frac{1}{2}$	British Central Africa . . .	J. B. Davey.
46 $\frac{3}{4}$	9 $\frac{1}{4}$	13	N.E. Rhodesia . . .	H. Cookson.
46 $\frac{3}{4}$	9 $\frac{1}{4}$	19 $\frac{1}{2}$	N.W. Rhodesia . . .	Dr. E. H. Tripp.
46 $\frac{1}{2}$	9 $\frac{3}{4}$	12 $\frac{1}{4}$	Do.	F. Barker.
46 $\frac{1}{2}$	10	15	Ngamiland	F. T. Garbutt.
46 $\frac{1}{2}$	9 $\frac{1}{2}$	18	N.E. Rhodesia . . .	E. M. Crossfield.
46 $\frac{1}{2}$	9 $\frac{1}{2}$	14	N.W. Rhodesia . . .	Hon. Sir Arthur Lawley.
46 $\frac{1}{4}$	10	11 $\frac{1}{4}$	Do.	G. L. Harrison.
46 $\frac{1}{4}$	10 $\frac{1}{4}$	19 $\frac{1}{2}$	N.E. Rhodesia . . .	Col. C. F. Blane.
46 $\frac{1}{4}$	9 $\frac{1}{4}$	21 $\frac{1}{4}$	N.W. Rhodesia . . .	J. M. Kearney.
46 $\frac{1}{4}$	9 $\frac{3}{4}$	5 $\frac{1}{4}$	S. Rhodesia	Val Gielgud.
46	10	11 $\frac{1}{4}$	N.W. Rhodesia . . .	T. G. Davey.
46	9 $\frac{5}{8}$	10 $\frac{3}{8}$	Do.	Capt. the Hon. G. H. Douglas-Pennant.
46	10 $\frac{1}{4}$	21	Do.	H. M. P. Hewett.
46	10 $\frac{1}{4}$	15 $\frac{1}{2}$	Do.	T. Clemens Usher.
46	9 $\frac{3}{4}$	16 $\frac{1}{2}$	British Central Africa . . .	Capt. R. S. Chichester.
45 $\frac{3}{4}$	10 $\frac{3}{4}$	12 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
45 $\frac{3}{4}$	10 $\frac{3}{4}$	16 $\frac{1}{2}$	Rhodesia	A. Yale Massey.
45 $\frac{3}{4}$	9 $\frac{3}{4}$	11 $\frac{1}{2}$	Do.	C. W. Adams.
45 $\frac{1}{2}$	9 $\frac{1}{4}$	15 $\frac{1}{2}$	Mashonaland	Major G. A. L. Carew.
45 $\frac{1}{2}$	10 $\frac{1}{2}$	...	N.W. Rhodesia . . .	H. B. Marshall.
45 $\frac{1}{2}$	10 $\frac{1}{2}$	13 $\frac{1}{4}$	Do.	A. C. Brandon.
45 $\frac{1}{2}$	10	13	Do.	Dr. Cole.
45 $\frac{1}{2}$	9 $\frac{1}{2}$	15 $\frac{3}{4}$	Do.	B. Ryan.
♀ 39 $\frac{3}{8}$	6 $\frac{1}{4}$	6 $\frac{3}{8}$	Mashonaland	F. C. Selous.

OWNER'S MEASUREMENTS.

62 $\frac{3}{4}$	11 $\frac{3}{8}$	23 $\frac{1}{4}$	Angola	E. J. Boake.
54 $\frac{1}{4}$	...	...	Do.	Essington Brown.
51 $\frac{1}{2}$	...	?	? . . . .	W. Colson.
49 $\frac{1}{4}$	...	?	? . . . .	C. S. Mann.
48	...	15 $\frac{3}{4}$	Transvaal	Lieut.-Col. R. B. Fell.

B.—EAST AFRICAN RACE (*H. niger roosevelti*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40	9 $\frac{3}{4}$	20	British East Africa . .	Capt. C. J. Murray.
37 $\frac{1}{2}$	8	...	Do. . .	R. B. Loder.
37	9	11 $\frac{1}{2}$	Do. . .	C. Bower Ismay.
35	8 $\frac{1}{4}$	6 $\frac{1}{2}$	Do. . .	British Museum (G. J. Muir).
34 $\frac{1}{2}$	8 $\frac{3}{4}$	13 $\frac{1}{2}$	Do. . .	N. C. Cockburn.
34 $\frac{1}{4}$	9 $\frac{1}{4}$	15 $\frac{1}{4}$	Do. . .	Capt. W. H. Wilkin.
34	9 $\frac{1}{2}$	6 $\frac{3}{4}$	Do. . .	The late G. G. Longden.
33 $\frac{3}{4}$	9	15	Do. . .	Capt. M. Kincaid Smith.

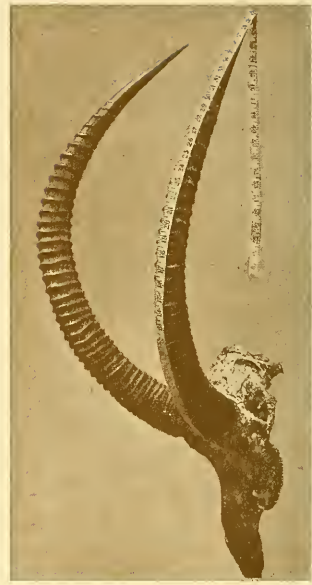
The East African race was described, as a distinct species, in 1910 by Mr. Heller on the evidence of a female killed in the Shimba Hills, British East Africa, and said to be paler in colour than the typical race.



Skull and Horns of Sable Antelope, Quanza River District, Angola. Length, 60 inches.
In the collection of Mr. J. C. Phillips.



(1)



(2)

(1) Head of Roan Antelope, and (2) Skull and Horns of the record specimen shot by Major the Hon. C. B. O. Mitford.

The ROAN ANTELOPE (*Hippotragus equinus*).

Amōn, Sudani.

Abu uruf, Dinka and Arabic.

I-taka, Amandebili.

I-pala-pala chena, Makalaka.

Gwenki, Hausa.

Impengo eetuba, Masubia.

Kwar, Masara.

Klabakila, Basuto.

Ipewa, Chilala and Chibisa.

Mtagaisi, Swazi and Zulu.

U-ka-muh-wi, Makuba.

Qualata, Northern Bechuana.

Kwalata and *Etselta*, Ngami.

Qualata Tseu, Barotsi.

Tai-hait-sa, Southern Bechuana.

Wunderbi, Abyssinian.

Abú aruf, Sudani.

Chilumbulumbu, Chila.

Its much larger size (height at shoulder, about 4 feet 9 inches), the shorter horns and mane, the larger ears and eye-tufts, and, above all, the grizzled roan or rufous coat, render the present species easily distinguishable from its sable cousin. A marked character of the face of the roan antelope is the cutting-off of the white eye-stripe from the muzzle by a transverse dark bar connecting the dark nose-streak with the brown of the cheeks; while the dark nose-streak itself likewise stops short of the muzzle, which is thus wholly white. Weight, about 625 lbs.

Distribution.—From north of the Vaal and Orange Rivers through East and East Central Africa to the Sudan and Abyssinia, and westward

to Angola, Nigeria, and Senegambia. The name *H. equinus langheldi* has been applied to the East African race, one Sudani race is known as *H. e. bakeri*, the West African as *H. e. gambianus*, and others have been named. Gordon Cumming shot roan antelope just north of the Orange River in Griqualand West, where the species has long been exterminated. Nowhere abundant, it is now most plentiful in Mashonaland and neighbouring districts; in the Transvaal it is only sparsely distributed. South of the Orange River this group of antelopes was formerly represented by the much smaller blaauwbok or blue antelope (*H. leucophaeus*), exterminated about the commencement of last century.

A.—TYPICAL RACE (*H. equinus typicus*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40 $\frac{1}{4}$	9 $\frac{1}{2}$	7 $\frac{3}{4}$	Rhodesia . . .	Major the Hon. C. B. O. Mitford.
34 $\frac{1}{2}$	9	9 $\frac{1}{4}$	S. Rhodesia . . .	A. T. Reid.
34 $\frac{1}{4}$	9	7	Okavango Valley . . .	Sir H. J. Goold-Adams.
32 $\frac{3}{4}$	8 $\frac{5}{8}$	9 $\frac{1}{2}$	Rhodesia . . .	Sir Abe Bailey.
32 $\frac{3}{4}$	9 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	R. E. Gunther.
32 $\frac{1}{2}$	9	9 $\frac{1}{4}$	Do.	W. A. Simpson Hinchliffe.
32	9 $\frac{1}{2}$	12	Hanyani Valley . . .	F. C. Selous.
31 $\frac{3}{4}$	9 $\frac{1}{2}$	5 $\frac{1}{2}$	South Africa . . .	Sir Edmund G. Loder, Bart.
31 $\frac{1}{2}$	9 $\frac{1}{2}$	11 $\frac{7}{8}$	Mashonaland . . .	F. C. Selous.
31 $\frac{1}{2}$	10 $\frac{1}{4}$	8 $\frac{3}{4}$	Angola	Surgeon C. G. Sprague, R.N.
31 $\frac{1}{2}$	9	10 $\frac{1}{4}$	N.W. Rhodesia . . .	Col. Lord Douglas Compton.
♀ 31 $\frac{1}{2}$	7	13 $\frac{1}{2}$	Do.	Capt. E. C. Hamilton.
31 $\frac{1}{4}$	9 $\frac{5}{8}$	14 $\frac{1}{4}$	N.E. Rhodesia . . .	G. Sandeman.
31 $\frac{1}{4}$	9	13	N.W. Rhodesia . . .	J. Bell.
31	8 $\frac{3}{4}$	13	Mashonaland . . .	J. A. Jameson.
♀ 30 $\frac{1}{2}$	7	7 $\frac{3}{8}$	Do.	F. C. Selous.
30 $\frac{1}{2}$	9	13 $\frac{1}{4}$	South Africa . . .	G. Richards.
30 $\frac{1}{2}$	9	13 $\frac{1}{2}$	Angola	Major Boyd A. Cuninghame.
30 $\frac{1}{2}$	10	5 $\frac{3}{4}$	Matabililand . . .	Capt. Lord H. Seymour.
30 $\frac{1}{8}$	9 $\frac{1}{4}$	13	British C. Africa . . .	Dr. J. E. S. Old.
30	9 $\frac{3}{4}$	5	Rhodesia	Capt. G. M. Spencer-Smith.
30	9 $\frac{1}{2}$	6 $\frac{3}{4}$	British C. Africa . . .	Capt. G. M. P. Hawthorn.
30	10	11 $\frac{1}{2}$	N.W. Rhodesia . . .	Capt. L. C. Brodie.
30	8 $\frac{7}{8}$	13 $\frac{1}{8}$	?	Sir Owen Philipps.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
29 $\frac{7}{8}$	10 $\frac{1}{8}$	14 $\frac{5}{8}$	Matabililand . . .	W. Van Ness.
29 $\frac{7}{8}$	9 $\frac{5}{8}$	11 $\frac{1}{4}$	Mashonaland . . .	Hon. Walter Rothschild.
29 $\frac{3}{4}$	9 $\frac{7}{8}$	10	Do.	Sir John Willoughby, Bart.
29 $\frac{3}{4}$	9 $\frac{1}{4}$	6	N.W. Rhodesia . . .	Duke of Westminster.
29 $\frac{5}{8}$	8 $\frac{7}{8}$	9	Do.	Capt. W. F. Reichwald.
♀ 29 $\frac{1}{2}$	7	6 $\frac{1}{4}$	British C. Africa . .	R. H. Storey.

OWNER'S MEASUREMENTS.

39 $\frac{1}{4}$	...	...	Tokwi Valley, South Rhodesia	South African Museum (R. C. Camp).
35	9 $\frac{1}{2}$	8 $\frac{1}{2}$	South Africa . . .	A. Ohlsson.
31 $\frac{1}{2}$	10 $\frac{1}{2}$	11 $\frac{1}{4}$	Angola	E. P. Cooper.
30 $\frac{1}{2}$	9 $\frac{3}{8}$	9	?	A. F. Williams.

B.—SUDANI RACE (*H. equinus bakeri*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
37 $\frac{1}{4}$	10	7 $\frac{1}{4}$	Sudan	P. Niedieck.
34 $\frac{1}{2}$	10	9	Do.	Lieut.-Gen. Sir B. T. Mahon.
34	9 $\frac{3}{4}$	3 $\frac{1}{4}$	Do.	The late Major J. L. J. Conry.
34	9 $\frac{1}{4}$	5 $\frac{3}{8}$	Do.	Major G. de H. Smith.
33 $\frac{1}{4}$	10	17 $\frac{1}{4}$	Do.	Marquis Pizzardi.
33	8 $\frac{3}{4}$	10	Do.	S. H. Whitbread.
33	9 $\frac{1}{2}$	6 $\frac{5}{8}$	Do.	Capt. A. K. Hargreaves.
32 $\frac{3}{4}$	9	14 $\frac{3}{4}$	Do.	Sir Savile Crossley, Bart.
32 $\frac{1}{2}$	9	12 $\frac{1}{4}$	Do.	Capt. E. Berry.
32 $\frac{1}{2}$	9 $\frac{1}{4}$	13 $\frac{3}{8}$	Do.	Capt. C. R. G. Mayne.
32 $\frac{1}{2}$	9 $\frac{3}{4}$	15	Do.	Capt. G. Stewart.
32 $\frac{1}{2}$	9	...	Do.	R. McD. Hawker.
32 $\frac{1}{4}$	10	8 $\frac{3}{4}$	Do.	G. H. Cheetham.
32 $\frac{1}{4}$	9 $\frac{1}{4}$	11	Do.	Lord Villiers.
-32 $\frac{1}{4}$	9 $\frac{7}{8}$	13 $\frac{3}{8}$	Do.	British Museum (Sir W. Garstin).
32	9 $\frac{5}{8}$	5 $\frac{3}{4}$	Do.	C. Adeane.
32	9 $\frac{1}{4}$	13	Do.	E. D. H. Tollemache.
32	9 $\frac{1}{8}$	13 $\frac{1}{4}$	Do.	Norman B. Smith.
31 $\frac{3}{4}$	9 $\frac{3}{4}$	11 $\frac{5}{8}$	Do.	Hon. T. G. B. Morgan-Grenville.

- Owner's measurements.

C.—WESTERN RACE (*H. equinus gambianus*).

(Including *H. e. scharicus*, of the Lower Shari Valley.)

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
33	9½	17½	N. Nigeria	G. C. W. King.
32¼	9	12½	Do.	W. A. Judd.
30½	9	10¾	Nigeria	Lieut.-Gen. Sir James Willcocks.
29½	9	9⅝	Do.	Capt. E. J. Wolseley.
29	9¼	13½	Do.	A. F. Hordern.
-28¾	8⅝	12½	Gambia	Dr. Percy Rendall (Charterhouse School Museum).
♀ 28¾	6⅞	2¾	Nigeria	The late Capt. G. H. F. Abadie.
28⅝	9½	8¾	Gold Coast	Capt. G. H. Hastings.
28¼	9½	13	Nigeria	Dr. G. J. Pirie.
28	8¼	10¾	Do.	Capt. H. N. Kempthorne.
28	8½	10¾	Do.	W. Dales.
27¾	9½	11¼	Do.	Capt. G. C. Kelly.
27¾	9	10¼	Do.	Dr. E. Charteris.
27¾	9½	9	Do.	S. F. Birch.

D.—EASTERN RACES (*H. e. langheldi*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
29¾	9	9⅝	East Africa	K. V. Painter.
29½	9	5½	Do.	Gerard Buxton.
29⅝	9¾	9	Do.	Stephenson R. Clarke.
29	9½	7½	Do.	M. Bell.
28⅝	8⅞	8¾	Do.	Walter Jones.
27½	9½	7¼	Do.	Percy C. Madeira.
27¼	9½	8	Do.	W. L. Spencer Churchill.
27	9½	4¼	Do.	A. Vonwiller.
26¼	9	6¼	Do.	Capt. G. F. Phillips.
26¼	8¼	3	Do.	Lieut.-Col. F. Wormald.
26	8¾	7¼	Do.	Sir Kenneth Crossley.
26	8½	7¾	Do.	Capt. Mackenzie Murray.
25¾	9	5	Do.	W. A. Baird.
25¾	8¼	10¾	Do.	H. B. Cox.
25½	9	6½	Do.	N. Flower.
25½	9½	10	Do.	J. G. Millais.
25½	8¾	9	Do.	W. H. Lindsay.
25½	8	9¼	Do.	Capt. R. A. McClymont.
25⅝	9½	12	Do.	E. M. Crosfield.
25¼	8¾	10	Do.	Capt. H. C. S. Ashton.
♀ 25	6	2	Do.	C. Bower Ismay.

- Owner's measurements.



Skull and Horns of Gemsbuck. From Mr. F. H. Barber's specimen in American National Collection.

The GEMSBUCK (*Oryx gazella*).

Gemsbok, Cape Dutch. *Kukama*, Bechuana. *Ko*, Burman.

The long, straight, spear-like horns, of which even the lion fights shy, render the gemsbuck and its more immediate allies an easily recognised sub-group. And even when, as in the white oryx, the horns are scimitar-shaped, they differ from those of the sable antelope by starting in the plane of the face. It is also a noteworthy fact that in the present species the horns of the females are longer and finer, and therefore more prized, than those of the bulls. An adult gemsbuck stands about 4 feet at the shoulder. In addition to the length of

its horns, the species is sufficiently characterised by the presence of a tuft of dark hair on the throat, and the cutting-off of the white eye-stripe from the muzzle by the union of the dark central nose-streak with the black of the cheeks.

Distribution.—The desert regions of South-Western Africa, from the northern Karus of Cape Colony through the Kalahari and Damaraland to Southern Angola, in Mossamedes, and perhaps Benguela. North of the Chobi and eastwards of Khama's country the species appears to be unknown. About 1846 Gordon Cumming found gemsbuck abundant on the northern Karus of Cape Colony; and even now a few linger on the plains to the south of the lower reaches of the Orange River. In the northern Kalahari, where they exist for months without water, they are still abundant. The splendid horns of the gemsbuck are always regarded as prime trophies of the hunter's skill; the finding, riding-down, and shooting of one of these wary and enduring desert-bred antelopes being a feat of which any man, however well mounted, may be deservedly proud.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
48	8 $\frac{1}{4}$	23 $\frac{3}{4}$	Bechuanaland . . .	Sir Abe Bailey.
47 $\frac{1}{2}$	6 $\frac{3}{4}$	17 $\frac{1}{2}$	South Africa . . .	The late J. S. Jameson.
46 $\frac{3}{4}$	7	22 $\frac{1}{2}$	Do.	Sir Owen Philipps.
46	7	25 $\frac{1}{2}$	Do.	W. A. Simpson Hinchliffe.
45 $\frac{5}{8}$	6 $\frac{1}{2}$	19 $\frac{3}{8}$	?	Sir Edmund G. Loder, Bart.
♀ 45 $\frac{1}{4}$	6 $\frac{1}{4}$	33 $\frac{3}{4}$	Ngamiland . . .	Sir H. J. Goold-Adams.
45 $\frac{1}{4}$	6 $\frac{3}{4}$	20 $\frac{3}{4}$	Do.	G. M. Bond.
45	8 $\frac{1}{8}$	18 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.
45	7	26	Do.	R. H. Venables Kyrke.
44	7 $\frac{1}{4}$	20	S.W. Africa . . .	C. G. Carew Elers.
43 $\frac{3}{8}$	6 $\frac{3}{8}$	18 $\frac{1}{2}$	Nata Valley . . .	F. C. Selous.
43 $\frac{1}{4}$	6 $\frac{3}{8}$	20 $\frac{3}{8}$	?	Sir Victor Brooke's Collection.
43 $\frac{1}{4}$	6 $\frac{1}{2}$	18 $\frac{1}{2}$	?	British Museum.
43 $\frac{1}{8}$	6 $\frac{3}{4}$	16	Kalahari	A. F. Williams.
43 $\frac{1}{8}$	6 $\frac{1}{4}$	16 $\frac{1}{8}$	?	M. Drew.
43	6 $\frac{1}{2}$	22	?	W. Y. Campbell.
42 $\frac{1}{2}$	7	20 $\frac{1}{2}$	Bechuanaland . . .	A. Neilson.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
42 $\frac{3}{4}$	6 $\frac{1}{4}$	19 $\frac{1}{2}$	Bechuanaland . . .	Capt. F. H. Lehmann.
42 $\frac{1}{4}$	6 $\frac{1}{2}$	24 $\frac{3}{4}$	Do.	Col. St. C. Pemberton.
42	8 $\frac{1}{2}$	24 $\frac{1}{2}$	Do.	Capt. the Hon. G. H. Douglas-Pennant.
42	6 $\frac{1}{2}$	20 $\frac{3}{4}$	?	A. Ryley.
41 $\frac{1}{2}$	7	21 $\frac{1}{4}$	?	Dr. S. Martin.
41 $\frac{1}{2}$	7 $\frac{1}{2}$	18 $\frac{1}{2}$	?	R. T. Coryndon.
41	11 $\frac{1}{2}$	23 $\frac{1}{2}$	Bechuanaland . . .	G. L. Harrison.

OWNER'S MEASUREMENTS.

♀ 46 $\frac{1}{2}$	...	...	Bechuanaland . . .	C. S. Mann.
♀ 45 $\frac{1}{2}$	...	...	Do.	American National Collection. (See illustration.)
45 $\frac{1}{4}$	...	23 $\frac{3}{4}$	Ngamiland . . .	H.R.H. the Duc de Montpensier.
44 $\frac{1}{2}$	6 $\frac{1}{8}$	25	?	P. C. Keytel.
44	6 $\frac{1}{2}$	17	?	A. Ohlsson.
43 $\frac{1}{4}$	8	16	?	Col. J. J. Harrison.
42 $\frac{1}{4}$	7	23	Kalahari	H. A. Bryden.



Head of Beisa.

The BEISA (*Oryx beisa*).*Biid*, Somali.*Sala*, Danakil.

The beisa may be regarded as the north-eastern representative of the gemsbuck, from which it is distinguished at a glance not only by the absence of a fringe of hair on the throat, but also by the separation of the black nose-stripe from the eye-stripes. There is also no black on the haunches or thighs, and the horns are considerably shorter and less divergent. Height at shoulder reaching 4 feet or rather more. Weight, about 450 lbs.

Distribution.—North-east Africa, from Suakin through Abyssinia to Berbera in Somaliland, and south to the Tana River. The Galla beisa, on account of its darker colouring, is separated as *O. b. gallarum*; the Kilimanjaro race, *O. b. callotis*, is characterised by its tufted ears; and intermediate between this and the typical race is *O. b. annectans* of the Laikipia plateau.

A.—TYPICAL RACE (*O. beisa typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
♀ 39	5½	8	Hargeisa, Somaliland .	E. P. Hare.
38¾	5½	11½	East Africa	Capt. W. H. Wilkin.
38	7	10	Do.	Capt. F. H. Span.
38	5	13	Abyssinia	N. C. Cockburn.
37¾	6¾	8	East Africa	Capt. W. M. Burrell.
37⅝	5¾	9¾	Do.	C. Fahnestock.
¹ 37⅝	11½	14	Do.	P. Fleming.
♀ 37¼	6	10	Do.	W. N. McMillan.
37¼	7	11¼	Somaliland	G. D. E. Chapman.
36¾	7¼	12¼	Do.	A. E. Butter.
36½	6	10	East Africa	Rhys Williams.
36⅝	6¼	7¾	Somaliland	G. J. A. Troyte.
36¼	6½	8½	Gallaland	M. V. Hay.
36¼	6¾	9¼	East Africa	Col. J. Caswell.
36	6½	10½	Somaliland	Capt. J. T. Brinkley.
36	6	8	Do.	Count J. Potocki.
36	7½	8	East Africa	The late G. G. Longden.
36	6¾	10	Do.	J. L. Baird.
35⅞	5¼	9⅞	Do.	G. F. Archer.
35¾	6¾	9½	Somaliland	Lord Delamere.
♀ 35¾	6½	9½	East Africa	British Museum.
♀ 35¾	5¾	9½	Do.	Capt. G. H. Riddell.
35¾	5¼	8¾	Somaliland	Sir Edmund G. Loder, Bart.
35⅝	7	10	East Africa	J. E. R. Oldfield.
♀ 35½	6	11	Do.	W. F. Whitehouse.
♀ 35½	5¼	7	Do.	Maj.-Gen. Sir A. N. Rochfort.
35½	6	9¼	Do.	C. S. Collier.
35½	6½	8¾	Somaliland	Prince Nicolas Ghika.
♀ 35¼	6	10½	East Africa	Capt. Lord Gerard.
35¼	6½	9½	Do.	G. Fenwick-Owen.
35¼	6½	10¼	Do.	E. V. Hemmant.
35	6	7¼	Do.	W. N. McMillan.
35	6	9	Somaliland	Gen. Sir Arthur Paget.
35	5¾	9¾	S. Abyssinia	T. Morse.
35	5¾	6½	Do.	Capt. F. L. Livingstone-Learmonth.
35	5¾	7⅝	Somaliland	A. S. Trevor.
♀ 35	5½	9¼	East Africa	Col. C. F. Blane.
35	6¾	7	Do.	Capt. G. V. Clarke.

OWNER'S MEASUREMENTS.

♀ 38¼	6	9	Somaliland	Major E. Bell.
37⅞	7	7½	Do.	J. C. Phillips.

¹ Abnormal Girth.



Head of Fringe-eared Beisa.

B.—KILIMANJARO or FRINGE-EARED RACE (*O. beisa callotis*).

Distinguished from the typical beisa by the fringe of long hairs surmounting the ears, by the extension of the eye-stripe to the lower jaw, along which it generally runs to join the throat-stripe, by the absence of any black on the front of the legs below the knees, and by the rich fawn of the ground-colour of the upper part of the face. Height at shoulder, 48 inches.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
33½	7	13	Makindu . . .	R. B. P. Cator.
33¼	7¼	11½	Near Lake Nalaron .	Capt. Mackenzie Murray.
33	7	9½	Kilimanjaro . . .	The late G. G. Longden.
32¾	6⅝	11¾	East Africa . . .	A. Fowler.
32¾	7½	12	Do. . . .	A. Murray Smith.
32½	7	11¾	Do. . . .	G. N. Crisford.
32¼	7¼	13	Do. . . .	Lieut. S. R. Bailey, R.N.
31¾	6½	8¾	Do. . . .	H. Fowler.
31½	7⅝	9¾	Do. . . .	W. H. Levy.
31	6	10	Do. . . .	W. M. Greiss.
31	7¼	10	Do. . . .	A. W. Mayo Robson.
♀ 31	5¾	12½	Do. . . .	J. Leslie.
30⅝	6½	9½	Do. . . .	G. de P. Colvile.
30½	5¾	10½	Do. . . .	Sir F. J. Jackson.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
30 $\frac{1}{4}$	...	6	Sabaki District . . .	Capt. T. W. Greenfield.
29 $\frac{1}{2}$	6	12 $\frac{3}{4}$	East Africa . . .	Sutton Timmis.
29 $\frac{1}{2}$	6 $\frac{7}{8}$	10	Do.	H. G. Watson.
29 $\frac{1}{2}$	5 $\frac{5}{8}$	7 $\frac{3}{8}$	Do.	Sir Robert Harvey, Bart.
29 $\frac{3}{8}$	7 $\frac{1}{2}$	9 $\frac{1}{2}$	Do.	Capt. R. H. R. Brocklebank.
29 $\frac{1}{4}$	6 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	Count B. Tyszkiewicz.
29 $\frac{1}{4}$	6 $\frac{7}{8}$	10 $\frac{1}{2}$	Do.	Sir J. Hume Campbell, Bart.
29 $\frac{1}{4}$	6 $\frac{3}{4}$	12 $\frac{1}{2}$	Do.	F. C. Stern.
29	7	10 $\frac{3}{4}$	Do.	David Davies.
29	7 $\frac{1}{2}$	10 $\frac{1}{4}$	Do.	Count A. Tyszkiewicz.
29	6	11	Do.	E. H. Litchfield.
29	5 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
29	6 $\frac{5}{8}$	13 $\frac{3}{8}$	Do.	Lord Wodehouse.
29	5 $\frac{3}{4}$	11	Do.	H. Sampson.
28 $\frac{3}{4}$	5 $\frac{5}{8}$	6	Do.	H. C. V. Hunter.
♀ 28 $\frac{5}{8}$	4 $\frac{3}{4}$	12 $\frac{1}{4}$	Do.	Henry Charrington.
28 $\frac{1}{2}$	7	10 $\frac{1}{2}$	Do.	A. Hamilton Gault.

OWNER'S MEASUREMENTS.

♀ 33 $\frac{1}{4}$	5 $\frac{3}{4}$	14 $\frac{1}{2}$	Kilimanjaro . . .	Major F. A. Dickinson.
32 $\frac{1}{4}$	6	12 $\frac{1}{4}$	Do.	Do.



Head of Arabian Oryx. Shot by Mr. D. Carruthers.

The ARABIAN ORYX (*Oryx leucoryx*).

This oryx is a smaller animal than the beisa, measuring about 2 feet 8 inches at the shoulder, and is of a whitish colour, with a dark spot on the face, and a large dark patch on each cheek, which meets its fellow beneath the throat; the knees and the front of the lower portion of the legs being blackish brown, and the tail-tuft black. The horns are slightly curved.

Distribution.—The interior of Arabia, especially the Nejd district and the confines of the great desert east of Oman.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
23 $\frac{3}{4}$	5	9 $\frac{1}{4}$	Arabia . . .	Sir Edmund G. Loder, Bart.
22	4	10	Do. . . .	British Museum (P. B. Vander Byl).
♀ 15	3 $\frac{3}{8}$	4 $\frac{1}{2}$	Head of Persian Gulf.	Do. (B. T. Ffinch).

OWNER'S MEASUREMENTS.

27 $\frac{1}{4}$	4 $\frac{1}{4}$	12 $\frac{1}{2}$	Tebuk . . .	D. Carruthers.
26 $\frac{1}{8}$	4 $\frac{3}{8}$	10 $\frac{1}{4}$	Arabia . . .	Paris Museum.



Head of White Oryx.

The WHITE ORYX (*Oryx algazel*).

Abū harb, Sudani.

A very distinct species of the genus, agreeing approximately in size with the beisa, but with long recurving scimitar-shaped horns and a generally whitish colouring, showing a more or less distinct chestnut tinge. The chestnut is developed on the neck, shoulders, under-parts, upper portions of the limbs, and the face; the last corresponding very closely with the dark markings of the beisa in their arrangement.

Distribution.—North-western Central Africa, from Nigeria to Sennar, Kordofan, and parts of Nubia and the Eastern Sudan generally.

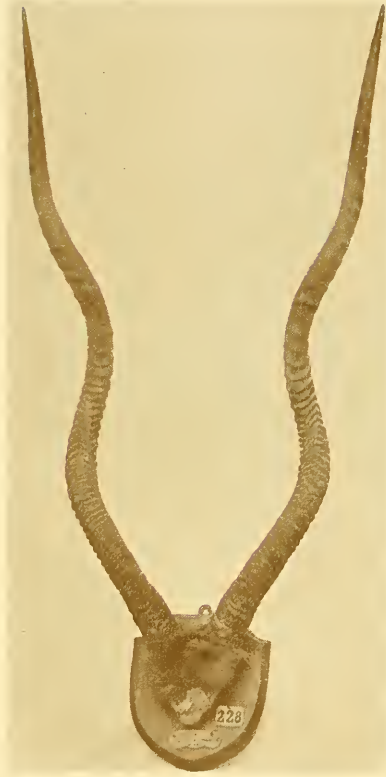
Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
45	6 $\frac{1}{4}$	8 $\frac{1}{2}$	Kordofan . . .	G. Blaine.
44 $\frac{1}{2}$	6 $\frac{3}{8}$	9	Do. . . .	Major H. G. F. Stallard.
43 $\frac{5}{8}$	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . . .	Major H. H. S. Morant.
♀ 43 $\frac{1}{4}$	4 $\frac{7}{8}$	12 $\frac{3}{4}$	Do. . . .	Norman B. Smith.
♀ 43	5 $\frac{1}{4}$	...	Gold Coast . . .	P. J. Partridge.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
42 $\frac{3}{4}$	6 $\frac{1}{4}$	9	Kordofan	Hon. Walter Rothschild.
42 $\frac{1}{4}$	5 $\frac{1}{2}$	10 $\frac{1}{2}$	?	Sir Owen Philipps.
42	7 $\frac{1}{8}$	...	Northern Territories, Gold Coast	Capt. H. Read.
¹ 42	5	...	Nigeria	Capt. W. D. Wright.
¹ 41 $\frac{7}{8}$	6 $\frac{1}{2}$	...	Lake Chad	E. B. Macnaughten.
41 $\frac{3}{4}$	5	16 $\frac{1}{2}$	Kordofan	Walter Jones.
41 $\frac{3}{4}$	6 $\frac{3}{4}$	8 $\frac{3}{4}$	Dongola	Capt. W. H. Wilkin.
41 $\frac{5}{8}$	6	10 $\frac{1}{2}$	Kordofan	E. N. Buxton.
41 $\frac{3}{8}$	6 $\frac{1}{2}$	9	Do.	Capt. A. K. Hargreaves.
41 $\frac{1}{4}$	6 $\frac{3}{8}$	...	N. Nigeria	Capt. S. C. Taylor.
40 $\frac{1}{2}$	5 $\frac{3}{4}$	6 $\frac{1}{4}$	Kordofan	Capt. J. C. Graham.
40 $\frac{1}{2}$	6 $\frac{5}{8}$	8 $\frac{1}{4}$	Do.	Sir Robert Harvey, Bart.
♀ 40 $\frac{1}{2}$	5 $\frac{1}{4}$	15 $\frac{1}{2}$	Do.	Do.
39 $\frac{3}{4}$	5 $\frac{1}{2}$	14 $\frac{1}{4}$	Do.	The late Prince Henry of Liechtenstein.
39 $\frac{3}{4}$	6 $\frac{1}{4}$	4 $\frac{1}{2}$	Do.	British Museum (Major H. N. Dunn).
♀ 39 $\frac{1}{4}$	5 $\frac{1}{4}$	6 $\frac{3}{4}$	Do.	Capt. G. S. Cameron.
39 $\frac{1}{4}$	6 $\frac{1}{2}$	3 $\frac{1}{2}$	Do.	C. E. Lyall.
39 $\frac{1}{4}$	5 $\frac{3}{8}$	11 $\frac{3}{4}$	Do.	Lieut.-Gen. Sir B. T. Mahon.
¹ 39	5 $\frac{1}{4}$	...	N. of Sokoto	Major-Gen. P. S. Wilkinson.
39	5 $\frac{1}{2}$	10 $\frac{1}{4}$	Dongola	Capt. the Hon. G. H. Douglas-Pennant.

OWNER'S MEASUREMENTS.

43	...	15	Kordofan	Major A. J. B. Percival.
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¹ Single horn.



Horns of Addax.
In the collection of Sir Edmund G. Loder, Bart.

The ADDAX (*Addax nasomaculatus*).

Kūbbāji, Arabic.

This antelope is another member of the oryx group, but is referred to a genus apart, of which it is the sole representative. Its most distinctive features are the spirally twisted and closely ringed horns (which recall those of the lesser kudu). The general colour in summer is sandy above and whitish below, with a brown patch on the forehead. In winter, at any rate in the case of the typical Tunisian race, the coat is grey and a heavy mass of long brown hair developed on the neck, shoulders, and forehead, although a streak across the face below the eyes, the lips, and a spot on the outer surface of each ear are white. Hoofs very wide and shallow, almost like those of the reindeer. Height at shoulder, about 3 feet 6 inches.

Distribution.—North Africa, as far south as lat. $7^{\circ} 15'$ N. in the Egyptian Sudan.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
$39\frac{1}{16}$	$34\frac{1}{2}$	$5\frac{7}{8}$	$18\frac{3}{4}$	?	Sir Edmund G. Loder, Bart. (See illustration.)
♀ $39\frac{3}{8}$	$32\frac{5}{8}$	$4\frac{3}{4}$	24	Sudan	H. Hodgson.
39	31	$6\frac{5}{8}$	$20\frac{7}{8}$	Dongola	Capt. the Hon. G. H. Douglas-Pennant.
39	33	6	$20\frac{1}{2}$	?	Carl Hagenbeck.
$38\frac{1}{2}$	$30\frac{1}{2}$	$6\frac{1}{2}$	$12\frac{1}{2}$	South Tunisia	British Museum (J. I. S. Whitaker).
$37\frac{3}{4}$	$31\frac{3}{4}$	$5\frac{3}{4}$	$23\frac{1}{2}$	Sahara	W. Barry.
$37\frac{1}{4}$	31	$6\frac{1}{4}$	$28\frac{1}{2}$	Sudan	H. Hodgson.
$36\frac{5}{8}$	$29\frac{1}{4}$	$6\frac{1}{2}$	13		
$36\frac{1}{2}$	$31\frac{1}{2}$	6	$19\frac{3}{4}$	South Tunisia	American National Collection.
36	$30\frac{1}{4}$	$6\frac{1}{4}$	$18\frac{3}{8}$	Dongola	G. Blaine.
36	$28\frac{3}{4}$	$6\frac{3}{4}$	12	S.W. Dongola	Major A. J. B. Percival.
$35\frac{3}{4}$	28	$6\frac{3}{8}$	$13\frac{5}{8}$	North Africa	Hon. Walter Rothschild.
♀ $34\frac{3}{4}$	28	$4\frac{3}{4}$	$7\frac{1}{2}$	Do. . . .	Do.
$34\frac{1}{4}$	29	$6\frac{1}{4}$	$20\frac{1}{2}$	W. of Dongola	Earl of Kingston.
34	$29\frac{1}{2}$	$5\frac{3}{4}$	$14\frac{3}{4}$	Do. . . .	Mr. Justice Hopley.
34	29	$6\frac{3}{8}$	$10\frac{1}{4}$	Do. . . .	Sir Abe Bailey.
$33\frac{1}{2}$	26	$5\frac{1}{2}$	$12\frac{1}{4}$	Do. . . .	Hon. R. A. Ward.
$32\frac{3}{4}$	$27\frac{1}{4}$	$6\frac{1}{4}$	14	Do. . . .	Sir Robert Harvey, Bart.
$32\frac{5}{8}$	$27\frac{1}{2}$	$6\frac{3}{4}$	18	S.W. of Dongola	Capt. P. E. Vaughan.
$32\frac{1}{4}$	$27\frac{1}{8}$	$6\frac{1}{2}$	17	Algeria	A. F. Williams.
$31\frac{1}{2}$	26	$5\frac{3}{4}$	$12\frac{1}{4}$	Do. . . .	Major R. Rankin.

OWNER'S MEASUREMENTS.

$35\frac{1}{2}$	$30\frac{1}{4}$	$6\frac{1}{2}$	20	?	J. C. Phillips.
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FOUR-HORNED ANTELOPE or CHOUSINGHA
(*Tetraceros quadricornis*).



Skull and Horns of Four-horned Antelope.

This antelope, which was formerly classed with the African duikers, is now regarded as a relative of the nilgai. Typically there are two pairs of horns, and the face-glands form deep slits; the females being hornless. The upper molar teeth have low, squared crowns. Height at shoulder, about 25 inches, and weight, about 40 lbs. General colour dull rufous brown, becoming whitish beneath, with the muzzle, the outer surface of the ears, and a line down the front of each leg blackish brown, and some white on the outer side of the pasterns. The front horns are not infrequently mere knobs, and may even be wanting, as in most Madras and Kathiawar specimens.

Distribution.—Peninsular India south of the Himalaya.

Length of horns on front.		Circumference.		Tip to Tip.		Locality.	Owner.
Rear.	Fore.	Rear.	Fore.	Rear.	Fore.		
$4\frac{1}{2}$	$2\frac{3}{4}$	$2\frac{1}{2}$	$2\frac{1}{4}$	3	...	?	G. Masters.
$4\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{3}{8}$	$2\frac{1}{4}$	3	...	?	Major J. C. B. Statham.
$4\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{3}{8}$	$1\frac{5}{8}$	$2\frac{7}{8}$	?	Sir Edmund G. Loder, Bart.
4	$2\frac{1}{2}$	$1\frac{7}{8}$	$1\frac{7}{8}$	3	$1\frac{1}{8}$	Indore	British Museum (Col. J. Evans).
4	2	3	$1\frac{7}{8}$	$1\frac{3}{4}$	$2\frac{1}{2}$	Karkote Jungle, near Mhow	Col. G. D. F. Sullivan.
4	$2\frac{5}{16}$	2	$1\frac{7}{8}$	$1\frac{1}{2}$	...	?	C. Cunningham.
4	$1\frac{3}{8}$	$2\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{4}$	...	Central Provinces	Hon. Walter Rothschild.
$3\frac{3}{4}$	1	$2\frac{1}{4}$	2	$1\frac{5}{8}$	...	Do.	Major A. D. Greenhill-Gardyne.
$3\frac{3}{4}$	2	$2\frac{1}{4}$	$2\frac{1}{4}$	$1\frac{5}{8}$	...	Do.	W. Moylan.

OWNER'S MEASUREMENTS.

5	...	...	...	...	...	Jhalawar	H.H. Maharaj Rana Bahadur of Jhalawar.
$4\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{1}{4}$	$1\frac{7}{8}$	$2\frac{1}{8}$	1	Lulitpur	General Walker.
$4\frac{1}{8}$	$1\frac{1}{2}$	...	...	...	...	?	J. D. Inverarity.



Head of Nilgai.

The NILGAI or BLUE BULL (*Boselaphus tragocamelus*).

This ungainly and small-horned antelope is an Asiatic representative of a group whose other members, apart from the chousingha, are African. Most are large, and, with the exception of the elands and bongo, lack horns in the females. In the males the horns are angulated in front and generally spirally twisted, but in no case ridged. Face glands are wanting in the African genera, the muzzle is naked, and the tail is either hairy throughout or long and tufted. The upper cheek-teeth have broad crowns. The females have four teats.

From the other members of the group the nilgai is readily distinguished by its short, upright horns, which, although angulated in front, show no distinct spiral twist. With a long and pointed head, this antelope has the fore-legs considerably longer than the hind pair; and it is chiefly to this peculiarity that its ungainly appearance is due. Both sexes have a mane on the neck, but the bulls alone possess a tuft of long hair on the middle of the throat. The general colour of the adult bull is dark grey, tinged with blue or brown; but the mane and tufts of long hair are black, and streaks and patches on the face, ears, and throat, the chin, the under-parts, the lower surface of the tail, a streak down the buttocks, and a ring above and below each fetlock, are white. Height at shoulder, from 4 feet 4 inches to

4 feet 8 inches. The late Mr. A. O. Hume shot a specimen in the Aligurh district in 1855 in which the horns measured $11\frac{3}{4}$ along the front curve, with a circumference of $9\frac{1}{2}$. They were unfortunately destroyed in the Mutiny.

Distribution.—The peninsula of India, from the foot of the Himalaya to the south of Mysore; common in parts of the Eastern Punjab, the United Provinces, Guzerat, and the Central Provinces.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$9\frac{1}{8}$	$9\frac{3}{4}$	$5\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
$9\frac{1}{2}$	$6\frac{1}{2}$	6	?	Major G. F. Mockler.
$9\frac{1}{2}$	$7\frac{1}{2}$	$6\frac{1}{4}$	?	J. Whitaker.
$9\frac{3}{4}$	$8\frac{3}{4}$	$5\frac{5}{8}$	Nepal Terai . . .	Capt. J. L. Sleeman.
$9\frac{1}{4}$	$6\frac{3}{4}$	$4\frac{7}{8}$	?	British Museum.
$9\frac{1}{4}$	$7\frac{3}{4}$	$7\frac{3}{4}$	?	Capt. G. W. Hemans.
9	$6\frac{5}{8}$	$3\frac{1}{2}$	?	British Museum (Hume Collection).
9	$8\frac{1}{2}$	$6\frac{5}{8}$	United Provinces . . .	A. V. Wilcox.
$8\frac{7}{8}$	$6\frac{1}{2}$	$5\frac{1}{4}$	Central Provinces . . .	C. D. Twopeny.
$8\frac{3}{4}$	$6\frac{1}{4}$	$5\frac{3}{4}$	Bhurtpur . . .	Lieut.-Col. J. M. Fawcett.
$8\frac{3}{4}$	8	$6\frac{1}{4}$	Central Provinces . . .	Duke of Peneranda.
$8\frac{3}{4}$	...	$5\frac{3}{4}$	Do. . .	Capt. L. P. Haviland.
$8\frac{3}{4}$	...	7	Do. . .	Capt. F. A. B. Johnstone.
$8\frac{3}{4}$	...	$8\frac{1}{2}$	?	J. Gouldsmith.
$8\frac{5}{8}$	$8\frac{1}{4}$	$6\frac{1}{4}$	Bhopal . . .	C. H. Payne.
$8\frac{1}{2}$	$7\frac{1}{2}$	$4\frac{3}{4}$	Central Provinces . . .	Capt. E. H. R. Hibbert.
$8\frac{1}{2}$	8	$5\frac{1}{4}$	Do. . .	Major C. D. White.
$8\frac{1}{2}$	$7\frac{3}{4}$	5	?	H. T. Cawley.

OWNER'S MEASUREMENTS.

$10\frac{1}{4}$	$7\frac{3}{4}$	$5\frac{1}{4}$	Baratpur . . .	Capt. R. W. Hutton.
10	$8\frac{1}{2}$	$6\frac{1}{2}$	United Provinces . . .	Capt. W. R. P. Henry.
10	$9\frac{1}{2}$	5	Agra . . .	J. W. Pickthall.
$9\frac{1}{8}$	$7\frac{3}{8}$	$6\frac{3}{8}$	Central Provinces . . .	M. Rawlence.
$9\frac{1}{2}$	$8\frac{1}{2}$	...	Bhurtpur . . .	Major E. R. Gordon.
9	7	7	Muttra . . .	Capt. S. H. Charrington.
9	6	$5\frac{1}{2}$	Bignor . . .	R. E. Mess, Roorkee.
$8\frac{3}{4}$	...	...	Jumna Valley . . .	Indian Museum.
$8\frac{3}{4}$	7	...	United Provinces . . .	C. Rose.
$8\frac{5}{8}$	...	5	Oudh . . .	Mess, 3rd Gurka Rifles.



Skull and Horns of Bushbuck in the Collection of the Hon. Walter Rothschild.

The BUSHBUCK (*Tragelaphus scriptus*).

Abu Nabah, Sudani.

Assali, Danakil.

Bata, M'Kua.

Chivalawala, Chilala and Chibisa.

Boschbok, Cape Dutch.

Ibawara, Lower Zambesi.

Imbabala, Swazi and Matonga.

Inkonka (male), *Imbabala* (female),

Zulus.

M'babala, Barotsi.

M'babala and *Serolo buchuhu*,
Ngami.

Mbawara, Swahili.

Mazo and *Bülümgi*, Hausa.

Ngabi, Waganda.

Scrolobotuku, Bamangwato.

Ungurungu, Makuba.

Dol, Somali.

Decula, Abyssinian.

Shichibange, Chila.

The bushbucks, or harnessed antelopes, form an extensive group of species nearly allied to the kudus, but usually displaying great sexual differences in the colour of the coat, and generally having a simpler spiral to the horns. The does are nearly always striped with white on a chestnut ground, but the bucks may be darker and more uniformly coloured. As in the kudus, the females are hornless. The true bushbuck is the smallest and at the same time the most widely spread member of the group, having many local races. The height at the shoulder ranges from $2\frac{1}{2}$ to 3 feet, and the weight from 100 lbs. to 170 lbs. Bucks have a crest of long hair, which may be white and erectile along the middle of the back; while in many, and especially

the southern races, there is a collar round the neck on which the hair is quite short. In the Abyssinian *T. scriptus decula*, which ranges into the forests bordering the Webbe in Somaliland, and is known as *dol*, the build is low and stout, and the general colour cinnamon, the light stripes being nearly obsolete. The Nile *T. s. bor* is allied. In the West African *T. s. typicus*, from West, Central, and South-Central Africa, the ground-colour is bright rufous, and the spots and stripes are very conspicuous. In the Limpopo *T. s. roualeyni* the bucks are dark brown, with only faint indications of white markings, but in the Cape *T. s. sylvaticus* the colour is dark brown without transverse white stripes, and the spots are reduced to a few indistinct ones on the haunches and behind the shoulder. The bucks of the Arusi *T. s. menliki* are nearly black, with much white on the legs and a dark dorsal crest; and those of the smaller Shoan *T. s. powelli* are also dark, but with white tips to the dorsal crest and dark legs. Many other races have been named, several based on specimens in the collection of Major Powell-Cotton.

As an abnormality, females may carry horns. In bushbuck, kudu, and nyala the outer edge of the tips of the hoofs is rounded, thus producing very characteristic slots.

Many of the following belong to the Cape *T. s. sylvaticus*, but the one from the Limpopo represents *T. s. roualeyni*, while the specimens from Nyasaland and neighbouring districts belong to other races.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
21 $\frac{3}{4}$	6 $\frac{1}{2}$	7 $\frac{1}{2}$	B.C. Africa	Dr. J. O. Shircore.
20 $\frac{1}{2}$	6 $\frac{3}{8}$	6	Do.	Hon. Walter Rothschild.
20 $\frac{1}{10}$	6 $\frac{3}{8}$	10 $\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
20	6 $\frac{1}{4}$	5 $\frac{1}{2}$	B.C. Africa	W. Kirby Green.
19 $\frac{3}{4}$	6 $\frac{3}{4}$	7	Do.	G. Dickie.
19 $\frac{3}{4}$	6 $\frac{1}{4}$	4 $\frac{1}{2}$	Upper Shiré Valley	Hon. Walter Rothschild. (See illustration.)
19 $\frac{3}{4}$	6 $\frac{1}{2}$	8 $\frac{3}{4}$	N.E. Rhodesia	H. S. Thornicroft.
19	5 $\frac{3}{8}$	3 $\frac{3}{4}$	B.C. Africa	Dr. J. E. S. Old.
18 $\frac{3}{4}$	6	10 $\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
18 $\frac{1}{2}$	6	8 $\frac{5}{8}$	Pungwé	P. H. Illingworth.
18 $\frac{1}{4}$	6 $\frac{1}{4}$	9 $\frac{3}{8}$	S. Africa	Col. E. St. C. Pemberton.
18 $\frac{1}{4}$	5 $\frac{1}{2}$	8 $\frac{5}{8}$	B.C. Africa	J. Sealy Bell.
18 $\frac{1}{4}$	6 $\frac{1}{4}$	7 $\frac{1}{4}$	E. Transvaal	Major J. Stevenson-Hamilton.
18 $\frac{1}{4}$	6 $\frac{1}{4}$	7	N.W. Rhodesia	G. de P. Colville.
17 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Zululand	Sir Abe Bailey.
17 $\frac{1}{4}$	6	5 $\frac{1}{4}$	N.E. Gazaland	A. M. Naylor.
17 $\frac{1}{4}$	7	7 $\frac{3}{8}$	Near Port Shepstone	Major E. H. E. Abadie.
17 $\frac{1}{4}$	6 $\frac{3}{4}$	7 $\frac{1}{4}$	S.E. Africa	H. Miller.
17 $\frac{1}{8}$	6	3 $\frac{1}{4}$	Do.	Sir Owen Philipps.
17 $\frac{1}{8}$	7 $\frac{1}{2}$	5 $\frac{1}{2}$	?	British Museum.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17	5½	8⅞	Zomba, B.C.A.	C. C. Bowring.
16½	5¾	7¾	B.C. Africa	R. H. Storey.
16¼	5¾	7¾	Pungwé	Major G. T. M. Bridges.
16¼	6	7	N.W. Rhodesia	R. E. Critchley-Salmonson.
16	6¼	7¼	Do.	Capt. Sir K. Fraser, Bart.
16	5½	4½	Do.	W. H. Tapp.

OWNER'S MEASUREMENTS.

19 ⁷ / ₁₆	5¾	11	Lower Zambesia	Fleet-Surgeon W. H. S. Stalkartt, R.N.
18	6½	12½	B.C. Africa	J. A. Knip.
17½	6½	7¾	Zomba, B.C.A.	D. MacAlpine.
17½	5½	10¾	Limpopo Valley	Grahamstown Museum.

The following belong to the West African *T. s. typicus* :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13¼	5	4½	N. Nigeria	Capt. W. M. Fowler.
13	5¼	6	Do.	Capt. L. C. Brodie.
12¼	5¼	2 ⁷ / ₈	Nigeria	Capt. H. T. G. Moore.
12¼	5	5	Do.	Major J. A. Burdon.
12¼	5	5	Do.	Capt. G. C. Kelly.
12¼	5¼	...	Do.	Capt. W. C. Street.
12	4½	4½	Do.	Capt. W. H. Wilkin.
12	5	6¾	Do.	Major-Gen. P. S. Wilkinson.
12	5¼	1 ⁷ / ₈	Senegambia	G. Fenwick-Owen.
11 ³ / ₈	6¼	4 ³ / ₈	S. Nigeria	Capt. R. M. Heron.
11¼	5	4 ³ / ₄	Nigeria	Capt. N. F. Baynes.
11	5	4 ³ / ₄	Sierra Leone	R. H. Gill.
10½	5	4½	Nigeria	Capt. A. K. O'Brien.
10½	4½	2¼	Gambia	British Museum (13th Earl of Derby).
10¼	4¼	4 ¹ / ₈	Gold Coast	T. E. Fell.
9 ⁵ / ₈	4½	2 ³ / ₈	Do.	Capt. A. H. Hobbs.

The following belong to the Masai *T. s. masaiicus* :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20½	7	8½	East Africa	Capt. J. A. Morrison.
18½	6¼	5½	Do.	R. P. Carroll.
18½	5½	8½	Do.	Sir Abe Bailey.
18	6¼	7½	Do.	Gerard Buxton.
18	7¾	7¼	Uganda	J. Leslie.
18	7	6¼	East Africa	Capt. J. W. H. D. Tyndall.
17 ⁷ / ₈	6¼	5 ⁵ / ₈	Do.	Sir John Kirk.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17 $\frac{1}{4}$	6 $\frac{1}{2}$	6 $\frac{3}{4}$	East Africa	R. J. Church.
17 $\frac{1}{4}$	6 $\frac{3}{4}$	6	Do.	R. B. Loder.
17	7 $\frac{1}{8}$	7 $\frac{1}{2}$	Do.	J. Hall.
17	7	8	Uganda	H. Twyford.
17	6	9	Do.	Marquis of Tweeddale.
17	6	10	Do.	Capt. C. Brook.
16 $\frac{3}{4}$	6	7	Do.	T. D. M. Cardeza.
16 $\frac{3}{4}$	6 $\frac{1}{2}$	7 $\frac{3}{4}$	Do.	J. K. Hill.
16 $\frac{3}{4}$	7	4	East Africa	I. N. Dracopoli.
16 $\frac{3}{8}$	5 $\frac{7}{8}$	6 $\frac{1}{4}$	Manda Island	British Museum.
16 $\frac{1}{2}$	7	7	East Africa	Sheffield Neave.
16 $\frac{1}{2}$	6 $\frac{1}{4}$	8	Do.	Major H. B. Dalgety.
16 $\frac{1}{2}$	7	7 $\frac{1}{2}$	Do.	E. H. Litchfield.
16 $\frac{1}{2}$	6	7 $\frac{3}{4}$	Do.	F. W. Belt.
16 $\frac{1}{2}$	6	4 $\frac{1}{4}$	Do.	Count B. Tyszkiewicz.
16 $\frac{3}{8}$	6 $\frac{1}{4}$	9	Do.	Hon. H. Brougham.
16 $\frac{1}{4}$	6 $\frac{1}{2}$	7	Do.	F. C. Selous.

OWNER'S MEASUREMENTS.

20 $\frac{3}{4}$	7	6	East Africa	C. S. Mann.
18 $\frac{3}{4}$	7 $\frac{3}{8}$	6 $\frac{1}{4}$	Unyoro	F. A. Knowles.
17 $\frac{7}{8}$	5 $\frac{3}{4}$	3	East Africa	Capt. C. H. Elliot.
16 $\frac{1}{4}$	6 $\frac{1}{4}$	5 $\frac{1}{2}$	Do.	S. E. White.

The following belong to the Upper Nile *T. s. bor* :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{1}{2}$	4 $\frac{3}{4}$	5 $\frac{1}{2}$	Sudan	The late Capt. H. S. Logan.
13 $\frac{1}{2}$	6	5 $\frac{1}{2}$	Blue Nile	Capt. J. A. Pollock.
13 $\frac{1}{2}$	5	...	Do.	G. L. Harrison.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Bahr-el-Ghazal	Major R. B. Airey.
13 $\frac{3}{8}$	6	1 $\frac{3}{4}$	Do.	Capt. H. M. Hutchinson.
13 $\frac{3}{8}$	6	5 $\frac{1}{4}$	Setit Valley	W. B. Cotton.
13 $\frac{1}{4}$	6	4 $\frac{1}{4}$	Sudan	Capt. C. E. Hills.
13	5 $\frac{1}{2}$	4 $\frac{1}{2}$	Do.	Capt. B. W. Y. Danford.
13	5	6	Do.	Capt. A. C. Jeffcoat.
12 $\frac{7}{8}$	5 $\frac{3}{4}$	5 $\frac{3}{4}$	White Nile	Earl of Kingston.
12 $\frac{3}{4}$	5 $\frac{1}{2}$	3 $\frac{1}{4}$	Do.	E. C. Crispin.
12 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Dinder Valley	C. Bower Ismay.
12 $\frac{1}{2}$	5	5 $\frac{1}{4}$	S. of Abukutu	Major R. M. Sanders.
12 $\frac{1}{2}$	5 $\frac{1}{2}$	2 $\frac{3}{8}$	Sudan	Prince Colloredo Mannsfeld.
12 $\frac{3}{8}$	4 $\frac{1}{2}$	5 $\frac{1}{4}$	White Nile	G. C. Whitaker.
12 $\frac{1}{4}$	5	5	Sudan	Col. E. G. T. Bainbridge.
12 $\frac{1}{4}$	6 $\frac{1}{4}$	4 $\frac{5}{8}$	Blue Nile	J. G. O. Thomson.
12 $\frac{1}{4}$	5 $\frac{1}{4}$	...	Sudan	G. C. Brock.



Head of Bushbuck.

Of the following specimens some belong to the Abyssinian *T. s. decula*, but the one from the Hawash River represents *T. s. multicolor*, while the Somali examples may be either *T. s. delamerei*, or *T. s. fasciatus*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19½	6¼	8¾	Somaliland	C. S. Mann.
19¾	6¼	7¼	Do.	Hon. Walter Rothschild.
13½	5¾	4½	Harar, Abyssinia	Ivor Buxton.
12¾	5¼	5¼	Abyssinia	R. Hayne.
12	6	4	Do.	Lord Wodehouse.
12	5½	5½	Do.	British Museum.
11¾	6	5½	Do.	A. E. Butter.
11½	4¾	4¾	Do.	Major P. H. G. Powell-Cotton.
11	4¾	5¼	Do.	Sir Edmund G. Loder, Bart.
11	5½	5	Setit Valley	Col. Ralph Vivian.
11	4¾	2¾	Northern Abyssinia	British Museum.

OWNER'S MEASUREMENTS.

17	...	...	Somaliland	Col. H. G. C. Swayne.
16½	6¼	5	Do.	A. H. Straker.
13¾	5½	5¼	Harar, Abyssinia	Prince de Lucinge.
12¾	5¼	3¼	Hawash Valley, Abyssinia	Viscount Edmond de Poncins.



Horns of Nyala. From a specimen presented by the late Mr. Rowland Ward to the British Museum.

The NYALA (*Tragelaphus angasi*).

Nyala, Zulu.

Bo, Nyasa.

This representative of the bushbuck group is a large, delicately built species, standing about 3 feet 6 inches at the shoulder. Weight, about 250 to 300 lbs. In the males the hair is long and soft, forming a fringe on the throat and the under-parts of the body, and a white crest along the back, the general colour being dark slaty grey, with a few indistinct white transverse stripes. In females the hair is short throughout, and the general colour bright reddish chestnut, with numerous distinct white stripes. The lower parts of the legs are tan, and the hoofs are short.

Distribution.—South-east Africa, including Zululand, Delagoa Bay, and Nyasaland; on the West Coast it has been reported from Angola, although this form may indicate a distinct local race.

Length.				Tip to Tip.	Locality.	Owner.
On front curve.	Straight.	Circumference.				
31½	26	8½	12¾	Zululand . . .	British Museum (Late Rowland Ward).	
31¾	24⅝	8¼	9½	Do.	Hon. Walter Rothschild.	
31⅝	24½	8¼	3½	Shiré Valley, B.C.A.	Fergus Maclagan.	
30½	24⅞	8¼	17	?	Sir Owen Philipps.	
29¾	23	8	13	S. E. Africa . . .	Col. Lord Douglas Compton.	
29¾	25	7⅞	14¼	Zululand	Surgeon-Gen. Sir D. Bruce.	
29¼	...	...	...	Delagoa Bay . . .	American National Collection.
29¼	24½	9	13	?	C. B. Addison.	
28¾	22½	8¼	8½	S. E. Africa . . .	H. L. Pattinson.	
28½	23¾	8	12¾	Zululand	Hon. Walter Rothschild.	
28½	22	8½	7½	Do.	C. S. Jameson.	
28½	23½	7¾	11½	Do.	H. C. da Costa.	
28¼	21¼	7¼	9¾	Delagoa Bay . . .	R. T. Coryndon.	
28¼	24¼	7¾	13	Do.	Capt. R. Meinertzhagen.	
28¼	24	7½	9	Do.	Col. E. St. C. Pemberton.	
28⅓	23⅝	8¼	9	Do.	H. W. Elliott.	
28	24	8	15	Katanga, B.C.A. . .	John Yule.	
28	23	7¼	13¼	Near Chiromo, B.C.A.	Surgeon J. Dowson, R.N.	
28	22¾	7¼	17½	Delagoa Bay . . .	F. A. R. Zucher.	
27¾	22½	8	10¾	Do.	G. L. Harrison.	
27¾	23¼	8	15¼	Do.	R. T. Coryndon.	
27¾	22½	7½	10	Do.	Marquis Pizzardi.	
27½	22½	8	9½	Do.	Major-Gen. Sir J. Dartnell.	
27½	22¼	7⅝	8½	Do.	C. D. Rudd.	
27½	20	8	5¼	Do.	R. Elliott-Cooper.	
27½	23½	7½	15⅝	Do.	Sir H. J. Goold-Adams.	
27	21¾	7½	9½	P. E. Africa . . .	H. C. Brocklehurst.	

OWNER'S MEASUREMENTS.

30	?	C. S. Mann.
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Skull and Horns of the Mountain Nyala.
From the specimen presented by Mr. Ivor Buxton to the British Museum.

The MOUNTAIN NYALA (*Tragelaphus buxtoni*).

Allied in the form of the horns and the colouring of the male to the nyala, but nearly as large as the typical kudu, and the two sexes nearly similar in colour. The male has a dark-brown coat of moderate length, with the usual face-markings; the under surface of the lower jaw, two gorgets on the throat and chest, a few spots on the flanks, and in some cases two stripes—one larger than the other—white. There is no fringe on the under-parts, but a crest of longish white and black hairs along the back. Legs with the front surface much like the back in colour, but elsewhere white. Horns with yellow tips; varying somewhat in form, and intermediate in this respect between those of the nyala and the kudu.

Distribution.—The Sahatu (Shabatu) Mountains of North-western Gallaland, to the east-north-east of Lake Zuay (Zwei).

On outside curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight line.	Circumference.			
44	$27\frac{1}{2}$	10	$21\frac{3}{8}$	E. of Lake Zuay . . .	R. Hayne.
39	$30\frac{1}{2}$	$9\frac{3}{4}$	22	Sahatu Mountains . . .	M. C. Albright.
37	$26\frac{1}{2}$	$9\frac{1}{4}$	21	Do. . .	British Museum (Ivor Buxton).
$36\frac{3}{4}$	25	10	$14\frac{1}{2}$	Arusi Country . . .	Hon. Walter Rothschild.
$33\frac{3}{4}$	$26\frac{1}{4}$	$9\frac{1}{2}$	$12\frac{3}{4}$	Do. . .	Lord Wodehouse.
$33\frac{1}{4}$	26	$8\frac{7}{8}$	...	Sahatu Mountains . . .	Ivor Buxton.
$31\frac{7}{8}$	$23\frac{3}{4}$	$9\frac{1}{8}$	6	?	D. R. Brodie.
$29\frac{3}{4}$	$21\frac{1}{2}$	9	$10\frac{1}{2}$	Arusi Country . . .	C. S. Mann.
29	23	$8\frac{1}{4}$	$10\frac{3}{4}$	?	Rowland Ward Collection.



Horns of Situtunga. From Mr. John Yule's specimen.

The **SITUTUNGA** (*Tragelaphus* [*Limnotragus*] *spekei*).

Situtanga, Barotsi.

Zowi, Chilala and Chibisa.

Nakong, Batauwani of Lake

Ngami.

Njobi, Waganda.

Nzoi, Lakanga.

Kawi, Cameruns.

Alluri, Duala.

Nkaya and *Nkoko*, Congo.

Situtunga, *Puvula*, *Unzuzu*, Chobi
and Central Zambesi.

Shichinzebe, Chila.

The typical *situtunga* differs from the other members of the group by the elongation of the hoofs, which are thus adapted for supporting the weight of the body on the spongy soil of the marshes in which these antelopes dwell. The lateral hoofs are much more developed than in the other species. In the typical eastern race from the Victoria Nyanza district the adult males are uniformly greyish brown without stripes, while the females are rufous with faint stripes. On the other hand, in the Zambesi *T. s. selousi*, the adults of both races are uniformly greyish brown. In the western *T. s. gratus*, the colouring

of the upper-parts approximates to that of the nyala, the ground-colour of the male being brownish grey, and that of the female bright rufous, marked in both with white stripes on the back and spots on the face and flanks, with two white gorgets on the throat. There is no fringe on the throat. In *T. s. albonotatus*, of which the habitat is unknown, the white face-markings are larger. Height at shoulder, from about 45 to 48 inches. The horns of the males are longer and more twisted than in other members of the genus, and wear yellow at the tips.

Distribution.—The situtunga is typically an inhabitant of the dense reed-swamps bordering the rivers of Central, South-Central, and East Africa. These antelopes are semi-aquatic in habits, frequently sinking themselves up to the eyes in the water. Consequently they are some of the most difficult of all antelopes to kill; but by firing the reed-beds in the dry season, the natives are able to spear the situtunga as they cross open water. At night these antelopes leave the reed-brakes for the islands in the rivers, but before dawn return to their impenetrable covert. A few are found on a bush-clad rocky island far out in the Victoria Nyanza; in which neighbourhood the species was first discovered by Captain Speke.

A.—TYPICAL and CHOBI RACES (*T. spekei typicus*).

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
35	28 $\frac{3}{4}$	8	26	Bahr-el-Ghazal . . .	Hon. Walter Rothschild.
32 $\frac{3}{8}$	26 $\frac{1}{2}$	8 $\frac{1}{4}$	12 $\frac{3}{8}$	Uganda	Lord Cranworth.
30	24	7	17 $\frac{1}{4}$	Bahr-el-Ghazal . . .	Major R. B. Airey.
29 $\frac{3}{8}$	24	7 $\frac{1}{2}$	19	Do.	Lieut. W. B. Drury, R.N.
28 $\frac{1}{4}$	23 $\frac{1}{2}$	7 $\frac{3}{4}$	20	Do.	Capt. P. E. Vaughan.
27 $\frac{1}{2}$	22	7 $\frac{7}{8}$	11 $\frac{1}{4}$	Do.	Col. J. J. Asser.
27 $\frac{1}{2}$	23	7 $\frac{1}{2}$	11 $\frac{3}{4}$	Uganda	J. Leslie.
25 $\frac{1}{2}$	22 $\frac{1}{2}$	7 $\frac{1}{4}$	9 $\frac{1}{4}$	E. Congo	Major W. I. Webb-Bowen.
23 $\frac{7}{8}$	...	7 $\frac{7}{8}$	6 $\frac{3}{4}$	Lake Kivu	N. A. H. Campbell.
23	18 $\frac{1}{2}$	6 $\frac{3}{4}$	8 $\frac{3}{4}$	Uganda	C. E. Lamb.
¹ 22 $\frac{1}{2}$	20 $\frac{1}{4}$	7	11 $\frac{1}{2}$	Do.	Major de Courcy Ireland.
22	19	...	7 $\frac{1}{2}$	Do.	Major R. H. Price.

(*T. s. selousi*).

35 $\frac{7}{8}$	28 $\frac{5}{8}$	8	15 $\frac{1}{8}$	Lake Mweru	Hon. Walter Rothschild.
35 $\frac{1}{2}$	29 $\frac{1}{2}$	8 $\frac{5}{8}$	19 $\frac{1}{4}$	B.C. Africa	F. E. F. Jones.
35	24 $\frac{1}{2}$	7 $\frac{1}{4}$	14 $\frac{1}{4}$	N.E. Rhodesia	J. Turner.

¹ In the collection of Sir Hy. E. M. James.

RECORDS OF BIG GAME

Length.				Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.	Circum- ference.				
35	27	7	8	N.E. Rhodesia . . .	J. E. Hughes.	
35	28	7½	15½	South end of Lake Tanganyika	John Yule. (See illustration.)	
34	28	8	17¾	N.E. Rhodesia . . .	J. C. Phillips.	
34	27¾	7¼	15¼	Do. . . .	Earl of Kingston.	
33¾	27¾	7½	14¾	Do. . . .	R. D. Waterhouse.	
33¼	26¼	8	16¾	Okavango Valley . .	Sir H. J. Goold-Adams.	
32¾	27¾	7¾	26¾	Chinde	Hon. Walter Rothschild.	
32¾	27	7½	16¾	Chobi Valley	F. C. Selous.	
32½	25½	7½	7¾	N.W. Rhodesia . . .	A. J. Brandon.	
32¾	25¾	8	19½	Do. . . .	A. F. Williams.	
32	25	8¼	16¼	?	G. M. Bond.	
31¾	26½	8¼	17¾	N.E. Rhodesia . . .	J. H. Whitehouse.	
31½	24¾	7	16½	Chobi Valley	British Museum (F. C. Selous).	
31½	23¾	8	15	Ngamiland	Mervyn G. Williams.	
31½	25¾	7½	13¼	Bangweolo	F. Smitheman.	
31½	27	7¾	21½	N.W. Rhodesia . . .	Dr. W. D. Waterhouse.	
31¼	26¼	7½	24½	Ngamiland	H. D. Hannay.	
31¼	25¼	8	15¾	?	N. H. Barton.	
31¼	25¼	7¾	17½	Ngamiland	F. T. Garbutt.	
31	23¾	8	9½	?	G. Richards.	
30¾	26½	7½	16	N.E. Rhodesia . . .	H. Cookson.	
30½	24¼	8¼	14¾	Barotsiland	Sir Edmund G. Loder, Bart.	
30½	25½	7¼	16¾	Do. . . .	Major J. Carden.	
30½	24½	7¼	12½	B.C. Africa	Grahamstown Museum.	
30¼	25¾	7½	19¾	N.W. Rhodesia . . .	G. L. Harrison.	
30¼	25¼	8	14¾	Do. . . .	A. C. Brandon.	
30	24½	8	14½	Do. . . .	Sir Owen Philipps.	
30	24¼	7¾	16	Do. . . .	E. McClellan.	
30	24	8	16	Bechuanaland . . .	Sir Ralph Williams.	
25½	22¾	7½	13½	Angola	Major Boyd A. Cuninghame.	
24¼	21	6¾	9½	Do. . . .	C. H. Pemberton.	
20¾	18¼	6¼	10	Benguela	G. W. Penrice.	

OWNER'S MEASUREMENTS.

34¼	28¼	7¾	21	N.W. Rhodesia . . .	C. S. Mann.
33½	27¾	7¾	19	?	Sir Abe Bailey.
131¼	25¼	7¾	14¾	Congo	Paris Museum (S. de Brazza).

¹ Determination provisional.



Horns of Western Situtunga from the Gambia.

B.—WESTERN RACE (*T. spekei gratus*).

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
34 $\frac{3}{4}$	28 $\frac{1}{2}$	8	21	Gambia . . .	II. C. Goddard.
32 $\frac{3}{4}$	27 $\frac{1}{4}$	9 $\frac{1}{8}$	15 $\frac{3}{8}$	Gabun . . .	Sir Edmund G. Loder, Bart.
32 $\frac{5}{8}$	25 $\frac{1}{4}$	7	8	Gambia . . .	Hon. Walter Rothschild.
30 $\frac{1}{4}$	26 $\frac{7}{8}$	8	14 $\frac{5}{8}$	French Congo . . .	Do.
30	26 $\frac{1}{4}$	7 $\frac{3}{4}$	14 $\frac{7}{8}$	?	Sir Abe Bailey.
29 $\frac{1}{2}$	24 $\frac{1}{2}$	8 $\frac{1}{2}$	14	Gabun . . .	American National Collection.
28 $\frac{1}{2}$	23	8	8	Gambia . . .	A. Ohlsson. (See illustration.)
27 $\frac{1}{2}$	22 $\frac{3}{8}$	8 $\frac{1}{4}$	6 $\frac{1}{2}$	N. Nigeria . . .	J. C. Sciortino.
27	23 $\frac{1}{4}$	8	13 $\frac{7}{8}$	Gabun . . .	F. M. Milligan.
25 $\frac{3}{4}$	21 $\frac{1}{4}$	6 $\frac{3}{4}$	12 $\frac{1}{4}$	Gambia . . .	Guy H. Sangster.
24 $\frac{3}{4}$	21	7	15 $\frac{3}{4}$	S. Nigeria . . .	C. E. Stuart.
24 $\frac{1}{4}$	21 $\frac{1}{2}$	7 $\frac{5}{8}$	10	Do.	A. W. Hunt.

OWNER'S MEASUREMENTS.

27 $\frac{1}{2}$...	8 $\frac{1}{2}$	14 $\frac{1}{4}$	Nigeria	A. F. Williams.
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The KUDU (*Strepsiceros capensis*, or *S. strepsiceros*).

<i>Agarzin</i> , Abyssinian.	<i>Kudu</i> , Hottentot.
<i>Ibala-bala</i> , Amandebili.	<i>Ngomo</i> , Chilala and Chibisa.
<i>I-silarwa</i> , Makalaka.	<i>Noro</i> , Mashona.
<i>Dwar</i> , Masara.	<i>Tata</i> , M'Kua.
<i>Godir</i> , Somali.	<i>Tolo</i> , Bechuana, Barotsi, and Ngami.
<i>Itolo</i> , Basuto.	<i>Unsa</i> , Mazubia.
<i>Itshongonous</i> , Swazi.	<i>Unzwa</i> , Makuba.
<i>Muziloua</i> , Batonga.	<i>Shombololo</i> , Chila.
<i>Nylat</i> , Sudani.	

Although rather less brilliantly coloured than some of the bushbucks, the two kudus are among the handsomest of all antelopes, their spiral horns, striped coat, and noble carriage rendering them really magnificent creatures. Their chief difference from the bushbucks is to be found in the fuller spiral formed by the horns and the larger ears, both sexes being nearly similar in colour. The special characteristics of the greater or true kudu are the large size (height at shoulder reaching to 4 feet 10 inches or 5 feet), the presence of a thick fringe of long hair on the throat, and the open spiral of the horns of the bull. The colour is too well known to require description. The Somali kudu (*S. c. chora*) differs from the typical southern form in having only about five transverse stripes instead of the usual nine or ten.

Distribution.—The kudu, in suitable localities, ranges over the greater part of Africa south of the Sahara, extending from Abyssinia and Somaliland through East and Central Africa to the Cape, and westward across the continent to Angola, where the Congo apparently forms its northern limits. In spite of its bulk, it is an adept at concealment; and this trait, coupled with its general wariness and acute sense of smell and hearing, has largely contributed to its survival in districts where it is much hunted. Except in the Uitenhage jungles, where it is preserved by British farmers, the kudu has been exterminated from Cape Colony. In Eastern Mashonaland it is still abundant, as it is in the highlands of Somaliland, in which country it is rarely met with on the plains. The Somali form inhabits less thickly wooded country than the southern race, and it is in accordance with this that it has fewer stripes.

Although unrivalled at traversing rocky hills, the kudu is by no means a good performer on the flat (where it seldom allows itself to be surprised), and can be ridden down without much difficulty by a fairly well-mounted hunter. Horned females occur rarely.



Head of Kudu.

A.—TYPICAL RACE (*S. capensis typicus*).

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
64	41	11	23	Mashonaland . . .	F. C. Selous.
63	48½	12½	49	Macloutsie Valley . . .	E. W. Tompson.
62¾	42¾	11½	37¼	?	Sir Owen Philipps.
61	40	11½	14¼	N.W. Rhodesia . . .	M. Tennant.
60⅝	45⅝	11½	33	Macloutsie Valley . . .	F. C. Selous.
59½	41⅝	12	30¼	Rhodesia	W. Griffin.
59½	44	11½	25¾	?	S. T. Teague.
59½	43¼	11	38	South Africa	W. A. Simpson Hinchliffe.

RECORDS OF BIG GAME

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
59 $\frac{1}{4}$	42 $\frac{1}{4}$	11 $\frac{5}{8}$	19	?	G. Richards.
59 $\frac{1}{4}$	43 $\frac{1}{2}$	11 $\frac{1}{2}$	30 $\frac{3}{4}$	N.W. Rhodesia . . .	Col. H. Clifton Brown.
58 $\frac{3}{4}$	46 $\frac{1}{4}$	12	36 $\frac{3}{4}$	Do. . . .	B. Ryan.
58 $\frac{1}{2}$	44 $\frac{1}{2}$	11	33 $\frac{1}{2}$	Do. . . .	Capt. H. T. Byas.
58 $\frac{1}{4}$	46	10	39 $\frac{3}{4}$	South Africa . . .	Sir Abe Bailey.
58 $\frac{1}{4}$	44 $\frac{1}{4}$	12	41	N.E. Rhodesia . . .	R. D. Waterhouse.
58	46	11 $\frac{5}{8}$	39	S.E. Mashonaland . . .	J. G. Millais.
58	46	...	...	Zomba, B.C.A. . . .	D. MacAlpine.
58	43 $\frac{1}{2}$	10 $\frac{1}{4}$	32 $\frac{1}{2}$	Okavango Valley . . .	Sir H. J. Goold-Adams.
57 $\frac{3}{4}$	46 $\frac{1}{4}$	12 $\frac{1}{4}$	43 $\frac{3}{4}$	S. Rhodesia . . .	A. Doughty.
57 $\frac{1}{2}$	40 $\frac{3}{4}$	11 $\frac{1}{4}$	22 $\frac{3}{4}$	B.C. Africa . . .	F. A. Coe.
57 $\frac{1}{2}$	41	11 $\frac{1}{8}$	21 $\frac{1}{2}$	N.E. Transvaal . . .	A. M. Naylor.
57 $\frac{1}{2}$	41 $\frac{1}{2}$	10	27	Do. . . .	Capt. D. J. Marker.
57 $\frac{1}{2}$	41	10 $\frac{1}{2}$	25	B.C. Africa . . .	J. H. Hayes.
57 $\frac{1}{2}$	44	11 $\frac{1}{4}$	31	Transvaal . . .	Capt. A. C. H. Kennard.
57 $\frac{1}{2}$	45 $\frac{1}{4}$	12	41	B.C. Africa . . .	E. Homer.
57 $\frac{3}{8}$	47	10 $\frac{3}{4}$	..	Do. . . .	J. B. Davey.
57 $\frac{1}{4}$	45 $\frac{3}{8}$	10 $\frac{3}{4}$	35	Do. . . .	H. C. Macdonald.
57 $\frac{1}{4}$	44 $\frac{5}{8}$	11 $\frac{3}{4}$	34 $\frac{3}{8}$	South Africa . . .	Sir Edmund G. Loder, Bart.
57 $\frac{1}{4}$	41 $\frac{3}{4}$	11 $\frac{5}{8}$	23	N.W. Rhodesia . . .	G. L. Harrison.
57 $\frac{1}{4}$	44 $\frac{1}{2}$	11	29	?	T. N. G. Jennings.
57	43	14	32	South Africa . . .	A. Moseley.
57	42 $\frac{1}{4}$	11	31	Do. . . .	Lieut.-Col. M. D. Graham.
57	40 $\frac{1}{4}$	12	21 $\frac{1}{4}$	?	G. V. Blackwell.
57	40 $\frac{1}{2}$	12	24 $\frac{3}{4}$	?	Capt. G. M. Spencer-Smith.
57	45 $\frac{1}{2}$	12 $\frac{1}{2}$	40 $\frac{3}{4}$	?	T. Stephenson.
57	40 $\frac{1}{2}$	10 $\frac{3}{4}$	28 $\frac{1}{4}$	N.W. Rhodesia . . .	G. de P. Colville.
56 $\frac{3}{4}$	43	11 $\frac{1}{2}$	30 $\frac{1}{2}$	Do. . . .	Capt. P. R. Bald.
56 $\frac{1}{2}$	43 $\frac{1}{2}$	11 $\frac{1}{2}$	26 $\frac{1}{2}$	Matabililand . . .	W. Van Ness.
56 $\frac{1}{2}$	41	10	29 $\frac{1}{2}$	?	J. W. Williamson.
56 $\frac{1}{2}$	41 $\frac{1}{2}$	10 $\frac{1}{2}$	23 $\frac{3}{4}$	Matabililand . . .	Hon. C. Greville.
56 $\frac{1}{2}$	44 $\frac{1}{4}$	11 $\frac{1}{2}$	37 $\frac{1}{4}$	N.E. Rhodesia . . .	Earl of Kingston.

On outside curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight line.	Circumference.			
56½	41½	11	28¾	S. Rhodesia . . .	R. C. Dundas Firth.
56½	39	11¼	22	Do.	Col. E. St. C. Pemberton.
56½	41	11	36½	N.W. Rhodesia . . .	Sir J. Walton, Bart.
♀ 37	10	...	...	South Africa	F. C. Selous.

OWNER'S MEASUREMENTS.

...	48¾	...	...	Ngamiland	American National Collection. (See illustration.)
63½	46¾	11¼	45¾	Upper Shiré Valley . .	Capt. C. H. Stigand.
63½	47½	...	46½	N.W. Rhodesia . . .	F. J. Nottage.
63	44½	...	42¾	Near Teté, Zambesia . .	Major P. W. Forbes.
63	39	10½	12	?	Mr. Justice Hopley.
62	...	12	27	Delagoa Bay	C. S. Mann.
61½	45½	10¾	34	?	A. Griffiths.
61¼	42¼	10¾	24¾	?	J. C. Phillips.
60¾	44	...	31	South Africa	H. T. and A. H. Glynn.
60½	47	10½	44¾	Do.	A. Ohlsson.

B.—SOMALI (*S. c. chora*) and EAST AFRICAN (*S. c. bea*) RACES.

On outside curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight line.	Circumference.			
61	42½	11	34	East Africa	The late G. G. Longden.
58¼	41¼	11	29	Do.	G. F. Archer.
58	43	10	40	Somaliland	G. Chetwynd.
57¼	42	11¼	41	Lake Baringo	The late H. Hyde Baker.
57	39	9¾	36½	Somaliland	H. R. H. the Duc d'Orléans.
57	40½	9¾	28	Do.	Capt. J. H. Brocklehurst.
56½	35	10½	30	Do.	Sir Edmund G. Loder, Bart.
56½	36½	8½	21½	Do.	Dr. R. E. Drake-Brockman.
56	44¼	10¾	44¼	East Africa	H. C. Phipps.
55	40¼	11	35¾	Do.	Major the Hon. C. H. C. Guest.
54½	39¼	10	27¼	Sudan	Major the Hon. H. Fraser.
54¼	43	10¾	39¾	Somaliland	Capt. R. A. McClymont.

RECORDS OF BIG GAME

On outside curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight line.	Circumference.			
54½	38½	10¼	22½	Somaliland . . .	Major P. H. G. Powell-Cotton.
54	38¾	9¾	29¾	Do. . . .	Capt. E. J. F. Vaughan.
54	39	10¼	32	Do. . . .	Norman B. Smith.
54	40¼	10	38¾	Do. . . .	Capt. J. C. Monteith.
54	38½	10	21½	Sudan	Lieut.-Gen. Sir B. T. Mahon.
54	37	10¾	26½	Somaliland . . .	Capt. J. L. Baird.
53¾	37¾	10	32	S. Abyssinia . . .	T. Morse.
53½	...	10¾	41	East Africa . . .	Major P. H. G. Powell-Cotton.
53½	36½	9	28	Sudan	Earl of Sefton.
53½	40	11	25	East Africa . . .	Hon. Guy Wilson.
53¼	36¾	9½	13¾	Somaliland . . .	P. K. Glazebrook.
53¼	35	9¾	27½	Do. . . .	H. J. T. Hamer.
53	41½	11¾	47¼	Lake Rudolf . . .	A. E. Butter.
53	38¾	9½	29	Sudan	Earl of Kingston.
53	39¼	11	37½	Lake Baringo . . .	Capt. W. H. Nicolson.
53	36½	10	8½	Sudan	Capt. G. Stewart.
52¾	39¾	10½	36	East Africa . . .	Capt. D. I. Shuttleworth.
52¼	39½	11¼	28	Do. . . .	Hon. Walter Rothschild.
52	37½	11½	31½	Do. . . .	Baron Maurice de Rothschild.
51¾	39¼	10¼	26¾	Do. . . .	Duchess of Sutherland.
51½	40	10	42	Sudan	Lieut.-Gen. Sir B. T. Mahon.
51½	36½	11½	25½	Somaliland . . .	Capt. A. E. H. Breslin.
51½	34¼	10	19	Do. . . .	Capt. F. M. Ransford.
51¼	38½	11¼	32	East Africa . . .	K. V. Painter.
51	37¾	11	32¾	Somaliland . . .	A. de L. Long.
51	33½	9½	14¼	Do. . . .	Major G. G. Gilligan.
51	38½	10	30	Sudan	Capt. A. C. Parker.
51	42	12¼	33¾	East Africa . . .	Dr. E. D. Anderson.
50¾	34¾	10¾	20¼	Somaliland . . .	J. H. Miller.
50½	36¾	9¾	33¾	Sudan	Capt. J. A. Pollock.
50½	39¼	10	31½	Do. . . .	Capt. S. J. Burton.
50	38	10	37	Somaliland . . .	P. H. Thomas.



Head of Lesser Kudu.
Shot by Mr. Norman B. Smith.

The LESSER KUDU (*Strepsiceros imberbis*).

Audeiro or *Godir*, Somali.
Gadams, Galla.

Sara, Danakil.
Kungu, Swahili.

Except for its brighter colour, the closer spiral and smaller divergence of the horns, the absence of a fringe of long hair on the throat, the more numerous stripes, white throat-bands, and narrower ears, this antelope might almost pass for a miniature of its larger relation. Height at shoulder, about 3 feet 5 inches. Weight, about 230 lbs.

Distribution.—North-east Africa, from Somaliland to British and German East Africa. This antelope generally goes in pairs or threes, and is partial to the covert of thick bush, from which it seldom emerges except for the purpose of feeding. Its coloration is typical of that of forest-dwelling antelopes, and is essentially of a protective nature.

RECORDS OF BIG GAME

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
35 $\frac{1}{4}$	26 $\frac{1}{4}$	7 $\frac{1}{2}$	16 $\frac{1}{2}$	Somaliland . . .	Norman B. Smith.
35 $\frac{1}{4}$	26 $\frac{1}{2}$	5 $\frac{3}{8}$	17 $\frac{3}{4}$	Do. . . .	G. Chetwynd.
34 $\frac{1}{2}$	25	7	14 $\frac{3}{4}$	Do. . . .	J. Higgins.
34 $\frac{1}{4}$	26	6 $\frac{1}{2}$	11	Do. . . .	Hon. Walter Rothschild.
34	26 $\frac{1}{2}$	...	...	Do. . . .	Col. H. G. C. Swayne.
34	26	6 $\frac{3}{4}$	14 $\frac{1}{4}$	Do. . . .	W. W. Ashley.
34	27	6 $\frac{3}{4}$	11	Do. . . .	British Museum (R. McD. Hawker).
33 $\frac{1}{2}$	26 $\frac{1}{4}$	7 $\frac{3}{4}$	10 $\frac{1}{2}$	Do. . . .	A. E. Butter.
33 $\frac{1}{2}$	27	7 $\frac{1}{4}$	11 $\frac{1}{2}$	Do. . . .	Vicomte de Thiene.
33	25 $\frac{3}{4}$	6 $\frac{7}{8}$	14	East Africa . . .	The late A. H. Neumann.
32 $\frac{1}{2}$	25 $\frac{1}{8}$	7	8	Somaliland . . .	Lieut.-Col. T. R. Harkness.
32 $\frac{1}{4}$	25 $\frac{3}{4}$	7	17	Do. . . .	Sir Edmund G. Loder, Bart.
32	24 $\frac{1}{2}$	7	14 $\frac{1}{2}$	N. Somaliland . . .	W. F. Whitehouse.
31 $\frac{3}{4}$	24 $\frac{1}{4}$	6 $\frac{1}{4}$	14 $\frac{1}{2}$	Do. . . .	Lord Delamere.
31 $\frac{1}{2}$	25 $\frac{1}{4}$	6 $\frac{3}{8}$	11 $\frac{5}{8}$	Do. . . .	Sir John Kirk.
31 $\frac{1}{2}$	24	6 $\frac{1}{2}$	12	Do. . . .	T. W. H. Clarke.
31 $\frac{1}{2}$	24	6 $\frac{3}{4}$	...	Do. . . .	Col. C. C. Ellis.
31 $\frac{1}{2}$	23 $\frac{1}{4}$	6 $\frac{1}{2}$	...	Abyssinia . . .	R. Hayne.
31 $\frac{1}{4}$	25	7	10	Somaliland . . .	Major G. F. T. Leather.
31	25	7 $\frac{1}{4}$	9 $\frac{1}{2}$	Do. . . .	W. H. Cobb.
31	24	6 $\frac{3}{4}$	9 $\frac{1}{2}$	Do. . . .	G. H. Cheetham.
31	23 $\frac{1}{4}$	7	10 $\frac{1}{2}$	East Africa . . .	Capt. G. F. Phillips.
31	23 $\frac{1}{2}$	6 $\frac{1}{4}$	14	Do. . . .	Major W. E. Stobart.
31	24 $\frac{1}{4}$	7 $\frac{1}{4}$	11	Do. . . .	Capt. G. V. Clarke.
30 $\frac{1}{2}$	23 $\frac{5}{8}$	6	9 $\frac{1}{2}$	Tana Valley . . .	Capt. C. Hankey.
30 $\frac{1}{4}$	23 $\frac{1}{4}$	7	6 $\frac{3}{4}$	East Africa . . .	W. H. Lindsay.
30	22 $\frac{3}{4}$	6 $\frac{3}{4}$	15 $\frac{1}{4}$	Do. . . .	C. Bower Ismay.
30	23 $\frac{3}{4}$	7	13 $\frac{1}{2}$	Do. . . .	G. Blaine.
29 $\frac{1}{2}$	23 $\frac{1}{4}$	6 $\frac{3}{4}$	14 $\frac{1}{4}$	Do. . . .	A. J. B. Wavell-Paxton.
29 $\frac{3}{8}$	23 $\frac{3}{4}$	7 $\frac{1}{4}$	13	Do. . . .	W. N. McMillan.
29 $\frac{1}{4}$	25	6 $\frac{3}{4}$	12 $\frac{1}{2}$	Do. . . .	Capt. W. H. Wilkin.
29	23 $\frac{1}{2}$	7	9 $\frac{3}{4}$	Do. . . .	Lord Wodehouse.
29	22 $\frac{3}{4}$	7	14 $\frac{1}{4}$	Do. . . .	J. Giffard.

OWNER'S MEASUREMENTS.

36	27 $\frac{3}{4}$	7 $\frac{1}{2}$	20	?	A. Bolle.
33	...	6 $\frac{1}{2}$	19 $\frac{3}{4}$	?	J. C. Phillips.



Head of Bongo.

The BONGO (*Boöcercus euryceros*).

This magnificent antelope, which comes next in point of size to the eland and kudu, was long considered a member of the bushbuck group, with which it agrees in the general type of colouring. It differs, however, in that the tail is tufted (like that of an eland), and also by the presence of horns in both sexes. The general colour of the coat is bright chestnut-red, marked with a number of narrow vertical white stripes, a white crescent on the breast, a white chevron on the forehead, two white spots below each eye, and some white marks on the legs; the front of the face being brown, with a tawny patch round each eye. In old bulls the coat becomes mahogany-colour. There is no dewlap, throat-fringe, or frontal tuft, and the hair is short. The worn tips of the horns are yellow. Height, about 4 feet.

Distribution.—West Africa, from Liberia, through Fanti to the Ashkankolu Mountains, the Gabun, and Sierra Leone, and thence

through the forest district to Uganda. The East African representative of the species has been named *B. e. isaaci*.

TYPICAL RACE.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
♀ 37 $\frac{3}{8}$	30	8	9	Ashanti . . .	Dr. M. Graves.
35	29 $\frac{7}{8}$	10	11	Do.	Hon. Walter Rothschild.
35	29 $\frac{1}{4}$	11	8 $\frac{3}{4}$	Do.	D. H. M. Boyle.
34	29	11 $\frac{3}{4}$	16	Ivory Coast . . .	British Museum (G. Chetwynd).
33	...	12	14	Ashanti	T. E. Fell.
32 $\frac{7}{8}$	25	9 $\frac{5}{8}$	5	Gold Coast . . .	Capt. T. W. Breckenridge.
32 $\frac{1}{4}$	26	10 $\frac{3}{4}$	15 $\frac{5}{8}$	Do.	Ivor Lewis.
32 $\frac{1}{4}$	26 $\frac{5}{8}$	10 $\frac{1}{2}$	12 $\frac{1}{4}$	Togoland	C. Beddington.
31	...	11	11	Do.	British Museum.
30 $\frac{1}{2}$	26	10 $\frac{3}{4}$	13 $\frac{1}{2}$	Sierra Leone . . .	Capt. E. J. Carter.
30 $\frac{1}{4}$	24 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{4}$	West Africa . . .	Sir Abe Bailey.
30	24 $\frac{1}{2}$	9 $\frac{5}{8}$	11 $\frac{1}{4}$	Ashkankolu Mountains	British Museum.
30	25 $\frac{3}{4}$	10 $\frac{1}{2}$	13 $\frac{3}{4}$	Sierra Leone . . .	Capt. E. R. A. Hall.
29 $\frac{1}{2}$	25 $\frac{7}{8}$	9 $\frac{3}{4}$	10 $\frac{1}{4}$	Gabun	British Museum (P. Du Chaillu).
28 $\frac{1}{2}$	25 $\frac{1}{4}$	10	10 $\frac{3}{8}$	Cameruns	J. C. Philipps.
28 $\frac{1}{2}$	24	9	5 $\frac{3}{4}$	Togoland	Hon. Walter Rothschild.
♀ 27 $\frac{1}{2}$	24 $\frac{1}{8}$	7 $\frac{1}{2}$	4 $\frac{1}{2}$	Gold Coast	Do.

EASTERN RACE (*B. e. isaaci*).

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
39 $\frac{1}{2}$	32 $\frac{5}{8}$	11 $\frac{1}{4}$	16 $\frac{3}{4}$	East Africa	Sir Abe Bailey.
36 $\frac{3}{4}$	29 $\frac{1}{2}$	11 $\frac{1}{4}$	11	Mau Forest, E. Africa .	Pretoria Museum (Dr. Sauer).
36 $\frac{1}{4}$	30 $\frac{1}{2}$	11 $\frac{3}{4}$	21 $\frac{5}{8}$	Do.	J. Jay White.
35 $\frac{5}{8}$	29 $\frac{1}{4}$	11 $\frac{1}{2}$	12 $\frac{1}{2}$	Do.	W. N. McMillan.
33 $\frac{3}{8}$	27 $\frac{3}{8}$	11	13 $\frac{3}{4}$	Do.	Hon. Walter Rothschild.
33 $\frac{1}{2}$	27 $\frac{5}{8}$	11	13 $\frac{3}{4}$	Do.	G. L. Harrison.
33 $\frac{1}{2}$	27 $\frac{1}{4}$	10 $\frac{1}{2}$	15 $\frac{1}{2}$	Do.	G. C. Whitaker.
33	...	12	14	Do.	J. H. Milton.
30 $\frac{3}{4}$	25 $\frac{3}{4}$	11 $\frac{1}{8}$	15	Do.	Sir Edmund G. Loder, Bart.
♀ 30 $\frac{1}{2}$	27 $\frac{1}{2}$	8 $\frac{1}{4}$	11	Do.	Hon. Walter Rothschild.
30 $\frac{1}{4}$	24 $\frac{3}{4}$	11	8	Do.	Rev. S. Weeks.
30 $\frac{1}{4}$	26 $\frac{1}{2}$	11	16	Do.	Capt. J. A. Morrison.
♀ 30	27 $\frac{1}{2}$	7 $\frac{1}{2}$	11 $\frac{1}{2}$	Do.	A. F. Williams.
♀ 29 $\frac{1}{4}$	26 $\frac{1}{4}$	8	3 $\frac{1}{2}$	Do.	Capt. J. W. H. D. Tyndall.
29	24 $\frac{1}{2}$	10 $\frac{1}{4}$	...	Do.	R. J. Church.
29	22 $\frac{3}{4}$	10 $\frac{3}{4}$	7	Do.	The late G. Grey.
28 $\frac{1}{4}$	23 $\frac{1}{2}$	10 $\frac{1}{2}$	11 $\frac{3}{4}$	Do.	A. W. Reid.
♀ 27 $\frac{1}{2}$	25	8	6 $\frac{1}{2}$	Do.	Viscount Ennismore.
♀ 25 $\frac{3}{4}$	22	7 $\frac{3}{4}$	2 $\frac{1}{4}$	Do.	W. N. McMillan.
♀ 22 $\frac{1}{2}$	21 $\frac{1}{4}$	7 $\frac{3}{4}$	8	Do.	Lord Wodehouse.
♀ 21 $\frac{1}{2}$	...	7 $\frac{1}{2}$	3	Do.	Capt. M. Kincaid-Smith.



Head of Eland.

The ELAND (*Taurotragus oryx*).*Du*, Masara.*I-pofo*, Makalaka.*Eland*, Cape Dutch.*Impofo*, Amandebili.*Insefo*, Masubia and Batonga.*Mofu*, Mashona.*Mofu*, Galla.*Mpofu*, Barotsi and Ngami.*Ntamu*, Waganda.*Msongo*, Chilala and Chibisa.*U-schefo*, Macuba.*Pakala*, Makua.*Pofu*, Bechuana.*Mpofu*, Swahili.*Böggä*, Sudani.*Musefu*, Chila.

Eland, which are the largest of all antelopes, resemble the bongo in the presence of horns in both sexes; these forming a close spiral like a screw, with an upward and outward direction. They likewise resemble the bongo in possessing a long, tufted, ox-like tail, but have a distinct dewlap. Horns of cows are more slender than those of bulls.

Bulls of the eland stand from 5 feet 9 inches to perhaps as much as 6 feet at the shoulder. They have a large tuft of hair on the forehead, and the horns are of moderate length and stoutness. The typical race (*T. oryx typicus*), which formerly extended from the Cape nearly to the Zambesi, has a uniformly tawny skin, without transverse white stripes or a dark brown band above the knees, and appears to be the largest form. Farther north a dark brown knee-band is assumed by adult bulls; and towards the Zambesi, and thence north and east into the heart of the continent, the bulls have not only this dark knee-band, but the body in both sexes is marked by fine vertical white lines. The Zambesi race is named *T. oryx livingstonei*. In Mashonaland eland show an incomplete white chevron on the face, with a large brown tuft on the forehead; this race, as typified by heads figured in *A Hunter's Wanderings*, has been called *T. o. selousi*. In the British East African *T. o. pattersonianus* the sides of the forehead are chestnut in place of dark brown, a white chevron is present, the frontal tuft is shorter, and the pasterns are black behind instead of white. Westward the species ranges into Angola.

Throughout Southern Africa, largely owing to the skin-hunters, eland are now becoming exceedingly scarce; and they have already more or less completely disappeared from Cape Colony, Natal, the Orange River Colony, Griqualand West, and the Transvaal. In the Northern Kalahari, where they exist for a great part of the year without water, large herds still remain. Occasionally female eland develop horns in which the spiral is almost obsolete and the length exaggerated.

A.—ZAMBESI RACE (*T. oryx livingstonei*).

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
37	12 $\frac{3}{4}$	23 $\frac{3}{4}$	Barotsiland (N.W.R.)	T. G. Davey.
34 $\frac{3}{4}$	11 $\frac{1}{2}$	27	B.C. Africa . . .	F. E. F. Jones.
34	12 $\frac{3}{4}$	22 $\frac{1}{2}$	N.W. Rhodesia . . .	Lieut.-Col. H. W. Wilberforce.
33 $\frac{3}{4}$	12 $\frac{3}{4}$	19	N.E. Rhodesia . . .	H. Cookson.
33	13 $\frac{1}{2}$	14 $\frac{1}{4}$	N.W. Rhodesia . . .	Major C. L. Graham.
32 $\frac{3}{4}$	12 $\frac{1}{2}$	21 $\frac{1}{4}$	Do. . . .	Dr. Ellacombe.
32 $\frac{1}{2}$	13 $\frac{3}{4}$	22 $\frac{3}{4}$	Do. . . .	G. Mitchell.
32 $\frac{1}{4}$	11 $\frac{3}{4}$	15 $\frac{3}{4}$	Do. . . .	G. F. Watherston.
32	13 $\frac{1}{4}$	12 $\frac{3}{4}$	Rhodesia	Major C. A. Sykes.
31 $\frac{3}{4}$	12 $\frac{1}{4}$	22 $\frac{3}{4}$	Do. . . .	Hon. Walter Rothschild.
31 $\frac{1}{4}$	11	17 $\frac{1}{2}$	Do. . . .	T. N. G. Jennings.

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
31½	12¾	12½	Rhodesia . . .	British Museum (F. C. Selous).
31½	12	20¾	N.W. Rhodesia . . .	R. C. Wood.
31½	13	15¼	Do. . . .	Marquis Pizzardi.
31½	14	22	Do. . . .	Col. C. Harding.
31¼	13½	9	Do. . . .	Dr. Sauer.
31¼	13¼	13½	Do. . . .	Norman B. Smith.
31¼	11½	24½	N.E. Rhodesia . . .	J. E. Hughes.
31¼	14¾	14½	S.E. Africa . . .	H. Knieson.
31	16	14	Rhodesia . . .	F. C. Selous.
31	11	19½	S. Africa . . .	W. A. Simpson Hinchliffe.
31	12½	15¾	Rhodesia . . .	H. H. Williams.
31	12	18	Do. . . .	R. T. Coryndon.
31	13	15¾	Do. . . .	Major J. P. Grenfell.
31	12½	11¾	Do. . . .	E. McClellan.
30¾	12½	20¼	N.W. Rhodesia . . .	J. H. Leche.
30½	11½	20½	B.C. Africa . . .	Capt. F. D. Markham.
30½	14¼	10	Rhodesia . . .	Capt. P. R. Bald.
30½	12	7½	Do. . . .	G. Crompton.
30½	12¼	21¼	Do. . . .	L. Messel.
30½	13½	17¾	N.W. Rhodesia . . .	W. H. Rawnsley.
30¼	12	16½	S. Rhodesia . . .	W. Harcourt Webb.
30¼	11½	18	B.C. Africa . . .	E. Sharpe.
30¼	13	20	Do. . . .	A. R. Andrew.
30¼	12¾	20¼	N.W. Rhodesia . . .	R. Campbell Heathcote.
30¼	14¼	10	Do. . . .	A. de L. Long.
30¼	12¾	15¾	Do. . . .	J. E. R. Oldfield.
30	13	16¼	Do. . . .	Capt. R. A. McClymont.
30	11½	22	Do. . . .	Sir Randolph Baker, Bart.
30	12½	21	Do. . . .	Capt. Mackenzie Murray.
30	14½	12½	S. Rhodesia . . .	A. Doughty.
30	13½	18	N.E. Rhodesia . . .	P. M. Stewart.
30	12¾	8½	Do. . . .	Earl of Kingston.
30	13½	12¼	Do. . . .	A. Dickinson.

RECORDS OF BIG GAME

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
30	11½	13½	B.C. Africa . . .	C. B. C. Storey.
30	14	17½	Rhodesia . . .	H. C. da Costa.
30	13	21¾	N.W. Rhodesia . . .	G. L. Harrison.

B.—EAST AFRICAN RACE (T. oryx pattersonianus).

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
32¼	13	16	German East Africa . . .	J. R. Rolls Richardson.
31⅝	10¼	25½	East Africa . . .	Sir F. J. Jackson.
30	11	13½	Do. . . .	E. B. Horne.
30	12	17¼	Do. . . .	Lady Grizel Hamilton.
29	12¾	16¼	Do. . . .	G. Henry.
29	12	14	Do. . . .	R. L. Scott.
28¾	13¾	12½	Do. . . .	G. Blaine.
28	12	17¾	Do. . . .	Capt. G. F. Phillips.
28	11	19½	Do. . . .	Lieut.-Col. J. H. Patterson.
27¾	11¼	10½	Do. . . .	Gerard Buxton.
27¾	12	11½	Do. . . .	Dr. E. D. Anderson.
27½	12½	13¼	Do. . . .	H. G. Barclay.
27½	11½	9	Do. . . .	G. N. Crisford.
27½	10	15¾	Tana Valley . . .	Major H. De Prée.
27¼	12½	11½	East Africa . . .	E. H. Litchfield.
27¼	11½	11¾	Do. . . .	L. L. Biddle.
27⅝	11¼	23	Do. . . .	Capt. V. C. de Crespigny.
27	13½	12½	Do. . . .	The late G. G. Longden.
27	11½	13¼	Do. . . .	W. Neilson.
26¾	12½	15	Do. . . .	Lieut.-Col. P. Polovtsoff.
26¾	10½	15¾	Do. . . .	Capt. L. W. Sadlier-Jackson.
26½	12	9¼	N. of Machakos . . .	E. J. Mardon.
26½	10½	13	East Africa . . .	Mrs. A. K. Muir.
26½	11¾	16	Do. . . .	H. S. Keating.
26½	12	6¼	Do. . . .	The Master of Belhaven.
26½	10½	16¼	Do. . . .	Major H. B. Dalgety.
26½	11¾	8½	Do. . . .	J. Hall.



Malformed Horns of Cow Eland in the Collection of Major W. Anstruther Gray.

The following are female specimens :—

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
39½	7	26¾	?	Major W. Anstruther Gray.
35¾	7½	15	Angola . . .	C. W. Sharp.
33½	9	15¾	N.W. Rhodesia . . .	J. H. Leche.
32¼	6¾	...	Chobi Valley . . .	M. C. Greaves-Bagshawe.
32¼	6¾	5¾	South Africa . . .	Sir Abe Bailey.
32½	7½	8¾	?	Mr. Justice Hopley.
32	8	20	B.C. Africa . . .	Capt. J. S. Brogden.
30¼	7½	13½	Do. . . .	R. C. Wood.
29¾	8	11½	Angola	Sir H. E. M. James.
29¾	8½	19	N.W. Rhodesia . . .	A. Willis.
29¼	7¾	20	East Africa . . .	F. W. Greswolde-Williams.
29½	8½	21	N. W. Rhodesia . . .	R. Beaumont.

RECORDS OF BIG GAME

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
28 $\frac{3}{4}$	7 $\frac{1}{4}$	13 $\frac{1}{2}$	East Africa . .	Capt. T. H. Rivers Bulkeley.
27 $\frac{1}{4}$	7 $\frac{3}{4}$	18 $\frac{1}{4}$	Do. . .	J. Leslie.
27 $\frac{1}{4}$	7 $\frac{1}{4}$	14 $\frac{3}{4}$	Do. . .	Capt. C. Brook.

OWNER'S MEASUREMENTS.

41	7 $\frac{7}{8}$	13	German East Africa .	Major von Tiedemann.
36	7 $\frac{1}{2}$	21 $\frac{1}{4}$	?	P. C. Keytel.
35 $\frac{5}{8}$	8 $\frac{9}{16}$	20 $\frac{1}{8}$	Zomba Plain, B.C.A.	Charterhouse Museum (Dr. Percy Rendall).

C.—MASHONA RACE (*T. oryx selousi*).

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
♀ 32	9 $\frac{1}{2}$	20 $\frac{1}{2}$	Mashonaland . .	F. C. Selous.



Head of Lord Derby's Eland, from Senegambia.

LORD DERBY'S ELAND (*Taurotragus derbianus*).

In this species the horns are larger than in the typical eland, the ears are broader and truncated at the tips, and the dewlap commences at the chin, instead of on the throat. Sub-adult bulls have the forehead chestnut, but a chocolate frontal tuft is developed later; there is an imperfect white chevron below the eyes; the lower part of the face is dark brown; a dark collar bordered below with white occupies the sides of the neck; the back of the neck carries a dark brown mane. The general colour of the hair is chestnut or rufous in the typical race, but paler in the Sudani race; the number of white body-stripes being 14 or 15 in the former and about 10 in the latter. Dark knee-bands are present; and the pasterns are black behind.

Distribution.—The open districts of the interior of Senegambia, Gambia, and Portuguese Guinea, and thence to the Bahr-el-Ghazal, Lado, and the Upper Congo.

A.—SENEGAMBIAN RACE (*T. derbianus typicus*).

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
42½	13½	44¾	French Congo . . .	Hon. Walter Rothschild.
42	14	22½	Do. . . .	American National Collection.
36½	15½	18½	Senegambia . . .	Major J. C. B. Statham.
36½	14	27½	Gambia	Hon. Walter Rothschild.
36	13½	23¼	Do. . . .	G. Fenwick-Owen.
♀ 34½	...	25½	Portuguese Guinea .	Major P. H. G. Powell-Cotton.
34¼	14½	22¾	Gambia	Sir Edmund G. Loder, Bart.
34	12¾	...	?	J. Carr Saunders.
33¼	14	25¾	French Guinea . . .	W. C. Rose.
33	13¾	26	Gambia	C. Sharland.
32½	12½	29⅞	Do. . . .	British Museum (13th Earl of Derby).
32½	9¼	12¾	?	Sir Edmund G. Loder, Bart.
32¼	13	23¼	Gambia	H. R. H. the Duc d'Orléans.
31¾	12	20	Portuguese Guinea .	Major P. H. G. Powell-Cotton.
31¼	12½	15¼	Gambia	H. C. Goddard.
30⅞	10¾	26¾	?	British Museum (F. W. Reade).
♀ 29½	10¼	13	Portuguese Guinea .	Vicomte de Thienne.
♀ 25	9	10¾	Gambia	H. C. Goddard.
♀ 24¼	9	6¼	Do. . . .	British Museum (F. W. Reade).

B.—SUDANI RACE (*T. derbianus gigas*).

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
41	13¼	25¾	Bahr-el-Ghazal . . .	Sir Robert Harvey, Bart.
40¼	13½	24¾	Do. . . .	Capt. R. C. Greenwood.
39¾	14¼	29¾	Do. . . .	Hon. Walter Rothschild.
39¾	14½	27	Do. . . .	Capt. J. L. F. Tweedie.
39½	12¼	30½	Do. . . .	G. Blaine.
39¼	13	...	Near Lado, White Nile	Gen. Sir F. R. Wingate.
39	14½	39¼	Near Wau, Bahr-el-Ghazal.	British Museum.



Skull and Horns of Sudani race of Lord Derby's Eland, in the Collection of Sir Abe Bailey.



RECORDS OF BIG GAME

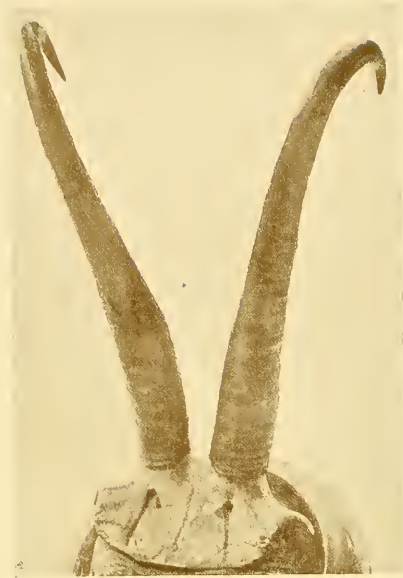
Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
39	14	29 $\frac{1}{4}$	Bahr el-Ghazal . . .	Capt. R. J. Collins.
38 $\frac{1}{2}$	13 $\frac{3}{4}$	19 $\frac{1}{2}$	Do. . . .	Sir Abe Bailey.
38 $\frac{1}{2}$	15 $\frac{1}{4}$	33	Tembura	Capt. E. S. Stephenson.
38 $\frac{1}{4}$	11 $\frac{3}{4}$	22 $\frac{3}{4}$	Bahr-el-Ghazal . . .	Major C. A. Wilding.
38	14 $\frac{1}{2}$	25 $\frac{1}{4}$	Do. . . .	Col. A. Colville.
37 $\frac{3}{4}$	14	31 $\frac{1}{2}$	Do. . . .	A. F. Williams.
37 $\frac{1}{2}$	13 $\frac{3}{4}$	28 $\frac{3}{4}$	Do. . . .	Major A. J. B. Percival.
37 $\frac{1}{2}$	13 $\frac{3}{4}$	35	Do. . . .	Major R. B. Airey.
37 $\frac{1}{4}$	14 $\frac{1}{2}$	23 $\frac{3}{4}$	Yei Valley	Major P. M. Dove.
36 $\frac{1}{2}$	14	29 $\frac{1}{2}$	Bahr-el-Ghazal . . .	Capt. G. F. Pridham.
36 $\frac{1}{2}$	13 $\frac{1}{4}$	33 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
36 $\frac{1}{4}$	13	...	Do. . . .	Capt. J. G. A. Massy.
35 $\frac{1}{2}$	14	34	Do. . . .	Major R. B. Airey.
34 $\frac{1}{4}$	13 $\frac{1}{4}$	19 $\frac{1}{4}$	Do. . . .	Baron F. Nicolics.
♀ 34	9 $\frac{1}{2}$	29 $\frac{1}{4}$	Do. . . .	Capt. H. R. Headlam.
♀ 33 $\frac{3}{4}$	10 $\frac{1}{4}$	16 $\frac{3}{4}$	Do. . . .	Hon. Walter Rothschild.

Measurements of an old bull, shot near Wau, Bahr-el-Ghazal, by Capt. R. J. Collins (horns 39 $\frac{3}{4}$ inches):—

Height just behind centre of shoulder	5 feet 8 inches
Nose to base of tail	9 " 0 "
Girth 6 inches from fore-leg	7 " 1 $\frac{1}{2}$ "
Length of tail	2 " 3 "
Length of body	6 " 2 "
Round centre of neck	4 " 2 $\frac{1}{2}$ "

C.—CONGO RACE (*T. derbianus congolanicus*).

Length on front of horn.	Circumference.	Tip to Tip.	Locality.	Owner.
29 $\frac{1}{2}$	11	19 $\frac{3}{4}$	Stanley Falls	Sir Edmund G. Loder, Bart.



Frontlet and Horns of Count Arpad Teleki's Chamois.

The CHAMOIS (*Rupicapra tragus*, or *R. rupicapra*).

The chamois does not belong to the antelopes properly so-called, but represents a group connecting the former to a considerable extent with the true goats, one member of the group being indeed commonly designated the Rocky Mountain goat. Most of these ruminants are more or less goat-like in general appearance, having narrow goat-like molar teeth and short or moderately long tails. Their horns, which are black in colour, are, however, quite distinct from those of the goats, being for the most part cylindrical in section, and curving backwards. From the other members of the group the chamois is at once distinguished by the sharp hook formed by the backward curvature of the horns, which rise almost vertically from the head. The colouring is too well known to need description, although attention may be directed to the dark streak running from the eye to the side of the muzzle. Height at shoulder reaching 32 inches; weight of male, generally about 65 lbs. (although 125 lbs. has been recorded in one case), that of female from 45 to 50 lbs.

Distribution.—The mountains of Central and Southern Europe, from the Pyrenees to the Apennines and Caucasus, and those of Asia Minor. Chamois vary in colour according to season, but

it seems that some races are darker than others. Several local races are recognised, such as the true chamois, or gems, of the Alps; the smaller and lighter coloured izard (*R. t. pyrenaica*) of the Pyrenees, and the darker *R. t. parva* of the Cantabrian Mountains of Spain. The Apennine *R. t. ornata* has the light throat-patch larger, and the upper side also light; the Carpathian race, not yet named, is very dark, old bucks being nearly black above. The Caucasian *R. t. caucasica* is distinguished by its relatively short and stout horns and certain features of the bones of the nasal region of the skull; while the light-coloured Trebizond *R. t. asiatica* is likewise distinguished by horn and skull characters. A great feature from an Austrian sportsman's point of view is the length of the beard, which in old chamois may measure over eleven inches in length.

Length on front curve.	Circumference.	Tip to Tip.	Spread.	Locality.	Owner.
♀ 12 $\frac{5}{8}$	3 $\frac{1}{4}$	5 $\frac{7}{8}$	...	Carinthia . . .	J. D. Heaton Armstrong. (See illustration, p. 339.)
12 $\frac{1}{8}$	3 $\frac{1}{2}$	5 $\frac{3}{8}$	6 $\frac{1}{8}$	Branu, Carpathians	C. G. Danford.
11 $\frac{5}{8}$	4 $\frac{3}{8}$	7	...	?	Hon. Walter Rothschild.
11 $\frac{3}{8}$	3 $\frac{5}{8}$	7 $\frac{5}{8}$	...	S. Austria . . .	J. Hamilton Leigh.
11 $\frac{3}{8}$	3 $\frac{5}{8}$	5 $\frac{7}{10}$	...	Do. . . .	R. K. Cross.
11 $\frac{1}{4}$	3 $\frac{1}{2}$	6 $\frac{1}{2}$	...	?	Col. Howard.
11 $\frac{1}{8}$	4	3 $\frac{3}{4}$	...	Austria	J. R. Luchsinger.
11	3 $\frac{1}{2}$	4 $\frac{3}{10}$	...	Transylvania . . .	F. C. Selous.
11	3 $\frac{3}{4}$	7 $\frac{1}{2}$	..	Do. . . .	St. George Littledale.
11	3 $\frac{3}{8}$	7 $\frac{1}{2}$	...	Austria	J. R. Luchsinger.
10 $\frac{3}{4}$	3 $\frac{1}{2}$	4 $\frac{3}{10}$	...	Tyrol	Sir Edmund G. Loder, Bart.
10 $\frac{3}{4}$	3	4 $\frac{1}{4}$	...	Austria	M. D. V. Holt.
♀ 10 $\frac{5}{8}$	3	5 $\frac{1}{4}$	...	Do. . . .	Hon. Walter Rothschild.
10 $\frac{5}{8}$	3 $\frac{3}{8}$	5 $\frac{1}{8}$	...	?	Rev. J. F. Glossop.
10 $\frac{1}{2}$	3 $\frac{9}{10}$	...	...	Do. . . .	L. R. Rate.
♀ 10 $\frac{1}{2}$	3 $\frac{3}{4}$	6 $\frac{3}{4}$	...	S. Austria	J. Hamilton Leigh.
10 $\frac{1}{4}$	3 $\frac{1}{2}$	5 $\frac{1}{4}$	...	?	E. N. Buxton.
10 $\frac{1}{4}$	3 $\frac{1}{4}$	5 $\frac{1}{4}$	...	Austria	Sir Robert Harvey, Bart.
10	3 $\frac{1}{2}$	3 $\frac{1}{2}$	...	W. Caucasus . . .	A. F. Broadley-Smith.
9 $\frac{7}{8}$	3 $\frac{1}{2}$	3	...	?	Norman Lamont.
9 $\frac{4}{8}$	3 $\frac{3}{8}$	4 $\frac{3}{4}$	...	?	Capt. W. Waring.
9 $\frac{3}{4}$	3 $\frac{5}{8}$	2	...	Carinthia	R. C. Graves Sawle.
9 $\frac{3}{4}$	2 $\frac{3}{4}$	6 $\frac{1}{2}$	...	Pyrenees	D. Davies.

Length on front curve.	Circumference.	Tip to Tip.	Spread.	Locality.	Owner.
9 $\frac{3}{4}$	3 $\frac{3}{4}$	3	...	W. Caucasus . . .	St. George Littledale.
9 $\frac{1}{2}$	3	3 $\frac{7}{8}$	...	Gerlos	Hon. M. W. Elphinstone.
9 $\frac{1}{2}$	2 $\frac{1}{2}$	5	...	Pyrenees . . .	P. H. Thomas.
9	3	5 $\frac{1}{4}$	...	Do. . . .	Sir Victor Brooke's Collection.
9	3 $\frac{1}{2}$	2 $\frac{5}{8}$	...	Caucasus . . .	Rhys Williams.
8 $\frac{3}{4}$	3	3	...	Do. . . .	Prince E. Demidoff.

OWNER'S MEASUREMENTS.

¹ 12 $\frac{3}{4}$	4 $\frac{1}{8}$	...	7 $\frac{7}{8}$	Hungary . . .	Baron Donald Schönberg.
12 $\frac{1}{4}$	...	...	...	Do. . . .	C. G. Danford.
² 12 $\frac{1}{4}$	4 $\frac{1}{8}$	...	7 $\frac{1}{2}$	Retyezat, Carpathians	Count Arpad Teleki. (See illustration, p. 335.)
12	4	...	...	Hinter Riss . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
12	...	...	...	Tyrol (?) . . .	Count Arco.
12	...	...	...	Carpathians . . .	Count Zdenko Kinsky.
11 $\frac{1}{2}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	Do. . . .	Archduke Carl Franz Joseph.
11 $\frac{1}{2}$	...	...	...	Retyezat . . .	Count Erbach.
11 $\frac{1}{2}$	3 $\frac{5}{8}$	6 $\frac{7}{8}$	...	Albreis Morteratch, Engadine	A. E. Pease.
♀ 11 $\frac{1}{4}$	...	41 $\frac{5}{16}$	...	Retyezat . . .	Baron A. Nopcsa.
11 $\frac{1}{16}$	...	...	...	Do. . . .	G. von Kendeffy.
11	3 $\frac{3}{4}$	5 $\frac{1}{2}$	...	? . . .	Count John of Meran.
10 $\frac{1}{16}$	3 $\frac{5}{8}$	4	...	Tyrol	Sir Edmund G. Loder, Bart.
10 $\frac{7}{8}$	3 $\frac{1}{4}$	6 $\frac{7}{8}$	...	Bulgaria . . .	Dr. Albert von Stephani.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	7 $\frac{1}{2}$	...	Herzegovina . . .	Eberhard Hollinek.
♀ 10 $\frac{3}{4}$	...	5 $\frac{1}{4}$	...	Retyezat . . .	C. G. Danford.
♀ 10 $\frac{5}{8}$	...	...	7	S. Austria . . .	R. K. Cross.
10 $\frac{5}{8}$	3 $\frac{7}{8}$	4 $\frac{1}{2}$	...	Styria	Dr. H. Sonnenthal.
10 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{3}{8}$	...	Austria	H.R.H. the Duke of Braganza.
10 $\frac{1}{2}$	2 $\frac{3}{4}$	5	...	? . . .	Count John of Meran.
10 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{3}{4}$	...	Austria	T. V. Holt.
10 $\frac{5}{16}$	3 $\frac{3}{8}$	3 $\frac{5}{8}$	...	S. Austria . . .	J. Kenneth Foster.
10 $\frac{1}{4}$	3	5 $\frac{3}{8}$	...	Do. . . .	Count Palffy.
♀ 10 $\frac{1}{4}$	...	...	...	Grindelwald . . .	F. A. Labouchere.
10	3 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{1}{2}$	S. Austria . . .	W. Winans.
8 $\frac{1}{2}$	3	3 $\frac{3}{4}$	...	N. Spain . . .	Abel Chapman.

¹ 13 when killed.

² 123 $\frac{1}{2}$ lbs. not clean, and horns now measure 11 $\frac{7}{8}$.

The following are the best specimens in the collection of His Imperial Majesty the Emperor of Austria, who between 1849 and 1902 shot 1991 chamois :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Date.
♀ - 11 $\frac{1}{4}$	3 $\frac{3}{8}$	6 $\frac{3}{8}$	Salzkammergut . .	July 26, 1889.
- 11	3 $\frac{3}{8}$	5 $\frac{1}{4}$	Do. . .	December 10, 1859.
- 10 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{7}{8}$	Do. . .	„ 28, 1868.
- 10 $\frac{1}{2}$	3 $\frac{7}{8}$	4 $\frac{7}{8}$	Do. . .	July 31, 1885.
- 10 $\frac{3}{8}$	3 $\frac{3}{8}$	5 $\frac{1}{8}$	Do. . .	November 10, 1870.
- 10 $\frac{3}{8}$	3 $\frac{7}{8}$	4 $\frac{7}{8}$	Do. . .	July 31, 1885.
♀ - 9 $\frac{5}{8}$	2 $\frac{3}{4}$	7 $\frac{1}{2}$	Do. . .	„ 10, 1886.

- Owner's measurements.



Frontlet and Horns of Chamois, shot by Mr. J. D. Heaton Armstrong.



Head of Himalayan Goral.

HIMALAYAN and BURMESE GORALS (*Nemorhædus goral*, etc.).

Goral, W. Himalaya. *Pji, Par, Rai, Rom*, Kashmiri.
Sâhari, Sarr, Sutlej Tribes.

The gorals are near relatives of the serows, from which they may be distinguished by their generally smaller size, shorter horns, and absence of face-glands, as well as by certain differences in the conformation of the skull. The horns curve regularly backwards, are conical in form, and marked by small irregular ridges for the greater part of their length. The hair is somewhat rough and shaggy, and the tail considerably longer than in the chamois. Height at shoulder, from 26 to 28 inches ; weight, from 58 to 63 lbs.

The following species occur in the Indo-Burmese countries :—

Nemorhædus hodgsoni.—Tail short. Colour brown, with a white patch on the throat and chin, a black dorsal stripe and tail, and a black stripe down the front of each leg and over knee. Horns comparatively straight, and not heavily ringed. Eastern Himalaya.

Nemorhædus goral.—Tail short. Colour yellowish grey fawn suffused with blackish, throat-patch white, little or no distinct dorsal stripe, a dark streak on muzzle ; base of tail and knees blackish, the rest of the legs being fawn. Horns more curved and more heavily ringed than in the last. Western and part of Eastern Himalaya.

Nemorhædus griseus.—Tail larger. Colour brownish grey fawn suffused with brown; throat-patch small and yellow; no stripe on muzzle or back; tail and back of legs dark brown, rest of legs rufous fawn. Horns very small. Sze-chuan to Upper Burma.

Length on front curve.	Girth.	Tip to Tip.	Locality.	Owner.
8 $\frac{5}{8}$	3 $\frac{3}{4}$	1 $\frac{1}{2}$	Kishtwar . . .	P. F. Hadow.
8 $\frac{1}{4}$	3 $\frac{7}{8}$	1 $\frac{3}{4}$	Garhwal . . .	Capt. D. L. R. Lorimer.
8	3 $\frac{3}{4}$	3 $\frac{1}{2}$	Chamba . . .	Major C. Levita.
7 $\frac{7}{8}$	3 $\frac{3}{4}$	3	Do. . . .	Capt. R. A. C. Murray.
7 $\frac{3}{4}$	3 $\frac{3}{4}$	...	Near Musuri . . .	Col. C. T. McM. Kavanagh.
7 $\frac{5}{8}$	4 $\frac{1}{8}$	2 $\frac{1}{4}$	?	D. Lawrie.
7 $\frac{5}{8}$	3 $\frac{3}{4}$	3 $\frac{1}{2}$	?	British Museum (Hume Collection).
7 $\frac{1}{2}$	3	2 $\frac{3}{4}$	Near Musuri . . .	British Museum (Hume Collection).
7 $\frac{1}{2}$	3 $\frac{3}{4}$	3	Do. . . .	R. Stephens.
7 $\frac{1}{2}$	3 $\frac{3}{4}$	3 $\frac{1}{4}$	?	Capt. P. H. H. Bailey.
7 $\frac{7}{16}$	3 $\frac{1}{2}$	2 $\frac{3}{4}$	Chamba . . .	Major A. H. Ogilvy Spence.
7 $\frac{3}{8}$	3 $\frac{7}{8}$	3 $\frac{1}{2}$	Kishtwar . . .	P. B. Vander Byl.
7 $\frac{3}{8}$	4	5 $\frac{1}{8}$	Garhwal . . .	Major L. W. S. Oldham.
7 $\frac{3}{8}$	3 $\frac{3}{4}$	3 $\frac{5}{8}$	Jhelam Valley, Kashmir	Major P. H. G. Powell-Cotton.
7 $\frac{1}{4}$	3	3	Chamba . . .	Major F. W. H. Walshe.
7 $\frac{1}{4}$	3 $\frac{3}{8}$	2 $\frac{1}{8}$	Do. . . .	Capt. F. Pope.
7 $\frac{1}{8}$	3 $\frac{1}{4}$	2 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
7 $\frac{1}{8}$	4	2 $\frac{3}{4}$	?	Capt. M. E. D. Hepenstat.

OWNER'S MEASUREMENTS.

9 $\frac{1}{8}$	3 $\frac{3}{4}$	4 $\frac{5}{16}$	Near Musuri . . .	H. Simons.
8 $\frac{3}{4}$	3 $\frac{3}{4}$	3	Musuri . . .	V. A. Mackinnon.
8 $\frac{1}{2}$	...	...	Bissahir . . .	Lieut.-Col. A. E. Ward.
8 $\frac{1}{2}$	3 $\frac{1}{2}$	...	?	Col. J. Biddulph.
♀ 8	2 $\frac{1}{4}$	4	Garhwal . . .	J. O'Brien.
8	...	...	Chamba . . .	Major C. B. Vandeleur.
7 $\frac{7}{8}$	3 $\frac{3}{8}$	3 $\frac{2}{16}$	Do. . . .	D. Cameron.
7 $\frac{7}{8}$	4	2 $\frac{3}{8}$	Near Musuri . . .	Major J. T. C. Murray.
7 $\frac{1}{2}$	4	3	Mohand Pass . . .	R. E. Mess, Roorkee.

VARIOUS CHINESE GORALS AND SEROWS.

Gni Lu of Chinese.

Species.	Collected by	Length on front curve.	Girth.	Tip to Tip.	Locality.	Owner.
Capricornis milne-edwardsi	Abbé A. David	$-8\frac{1}{6}$ $-8\frac{5}{8}$	$7\frac{1}{2}$ $7\frac{1}{8}$	4 2	Moupin, Sze-chuan	Paris Museum (Type).
...	...	-8	...	...	Ichang . .	Comdr. F. B. Noble, R.N.
...	...	$7\frac{5}{8}$	$3\frac{7}{8}$	$3\frac{1}{2}$	Shen-si . .	K. K. Horn.
Nemorhædus cinereus	Abbé A. David	$-7\frac{1}{2}$	$3\frac{1}{8}$	$3\frac{5}{8}$	Sze-chuan . .	Paris Museum (Type).
...	...	$\text{♀ } 7\frac{1}{2}$	3	...	Nank'ou . .	W. F. Collins.
„ caudatus	Abbé A. David	$-6\frac{5}{16}$ $6\frac{1}{4}$	$3\frac{9}{16}$ 4	$3\frac{1}{8}$ $3\frac{1}{2}$	North of Peking ?	Paris Museum (Type). British Museum.
„ griseus .	Do.	$-4\frac{3}{4}$	$3\frac{1}{8}$	$2\frac{3}{8}$	Sze-chuan . .	Paris Museum (Type).

- Owner's measurements.

JAPANESE SEROW (*Capricornis crispus*).

A rather small species of serow with a coat of long grey hair.

Distribution.—The southern islands of Japan; an allied species (*C. swinhoei*) inhabiting the island of Formosa.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-7	4	$3\frac{7}{8}$	Japan . . .	Sir Edmund G. Loder, Bart.
$-6\frac{1}{4}$	$3\frac{1}{4}$	$3\frac{3}{4}$	Do. . . .	Imperial Museum, Vienna.
$5\frac{1}{4}$	$3\frac{1}{2}$	$3\frac{1}{2}$	Do. . . .	British Museum.
$4\frac{3}{4}$	3	$3\frac{1}{4}$	Do. . . .	E. L. Fletcher.

- Owner's measurements.



Head of Serow.

The **SEROW** (*Capricornis sumatrensis*).

Serow, serowa of Gurhwal and
Himalaya.
Ramu-Halj, Sàlàbhir.

Aimu, Kumaon.
Jungal, Kangra.
Goa, Chamba.

Yamu, Kulu.

Serows are clumsily built ruminants generally larger than gorals, with face-glands and longer horns. The ears are long; the hair is coarse, rather thin, and elongated into a crest from the nape to the withers; the under fur found in the gorals being usually absent. In the typical species the general colour of the upper-parts is normally black or dark grey, with a grizzled appearance, owing to the whitish bases of the hairs; the under-parts, shoulders, and thighs being rusty red. There is, however, great local variation; some races being wholly or mainly rufous and others black, while the lower portion of the legs may be white or rufous or a mixture of both. The form of the skull also differs. Height at shoulder, from about 34 to 38 inches. Weight, 120 to 190 lbs.

Distribution.—Typically from Sumatra, but ranging from Yun-nan and Sze-chuan to the Eastern Himalaya, and occurring throughout the elevated tracts of Assam, Burma, Siam, and the Malay Peninsula. In the Sumatran race the limbs are wholly rusty; in the Darjiling *N. s. jamrachi* the lower portions of the legs are mingled rufous and white, while in the Nepalese *C. s. bubalinus* they are white. The Chamba *C. s. rodoni* is dark, with under-fur; but in the Kashmiri *C. s. humei* the head is rufous brown, and in the Arakan *C. s. rubidus* bright rufous. The Malay *C. s. swettenhami* and *C. s. robinsoni* are almost wholly black, but the Sze-chuan and Burmese *C. s. milne-edwardsi* is black with rufous shanks. In *rubidus* the nasal bones are very short; in *swettenhami* they are longer and narrower, and the profile of the skull is more vaulted.

A.—EASTERN RACES.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11½	5¼	3¼	Mishmi Hills . . .	R. Sinclair.
10½	5	1¾	Burma . . .	O. F. Wheeler-Cuffe.
10½	6	5	Do. . .	A. L. Bacon.
9½	6	2¾	Chin Hills . . .	Capt. F. W. A. Wells.
9½	4½	4¾	Burma . . .	British Museum (Hume Collection).
9	5	2	Sumatra . . .	Do.
♀ 9	4½	...	Upper Burma . . .	H. Shaw Dunn.
8¾	5¼	...	?	H. E. Stephens.
8¾	5½	4¾	Muleyit . . .	British Museum (Hume Collection).
8¾	5¼	3½	Upper Burma . . .	H. O. Whittall.
8¾	5	3¼	Do. . .	Capt. L. Trevor Goff.

OWNER'S MEASUREMENTS.

10½	5½	5	Ta-chi-lu, China . . .	M. Mitchell.
10½	5¼	...	Upper Burma . . .	H. Shaw Dunn.
9½	5	5½	Arakan Hills . . .	British Museum (Hume Collection).
9¼	5	4½	Burma . . .	H. L. P. Walsh.
9	5½	5½	Do. . .	Bombay Natural History Society.
9	5	5	Do. . .	Lieut.-Col. G. H. Evans.
8½	5½	4¼	Manipur . . .	Lieut.-Col. H. S. Wood.
8¼	4¾	2½	Perak . . .	Perak Museum.

B.—WESTERN RACES.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12 $\frac{1}{4}$	6 $\frac{1}{2}$	2 $\frac{3}{4}$	Garhwal . . .	British Museum (Hume Collection).
10 $\frac{1}{2}$	5	3 $\frac{1}{2}$	Chamba . . .	H.H. the Raja of Chamba.
♀ 10 $\frac{1}{4}$	5 $\frac{3}{4}$	3 $\frac{3}{4}$	Kumaon . . .	Lieut.-Gen. Sir R. Hart.
10	4 $\frac{5}{8}$	3 $\frac{1}{4}$	Garhwal . . .	Major J. C. B. Statham.
10	6	$\frac{7}{8}$	?	C. B. Atkinson.
9 $\frac{3}{4}$	5 $\frac{1}{8}$	6	Kashmir . . .	British Museum (R. Lydekker).
9 $\frac{5}{8}$	5 $\frac{1}{4}$	$\frac{3}{4}$	?	Col. C. M. Haggard.
9 $\frac{1}{2}$	5 $\frac{1}{2}$	4	?	K. C. Zarzhetsky.
9 $\frac{1}{2}$	5 $\frac{3}{8}$	4 $\frac{3}{4}$	Kashmir . . .	St. George Littledale.
9 $\frac{1}{2}$	4 $\frac{7}{8}$	3 $\frac{1}{4}$	Nepal . . .	British Museum (the late B. H. Hodgson).
9 $\frac{1}{2}$	5 $\frac{3}{8}$	3 $\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
9 $\frac{1}{2}$	5 $\frac{1}{4}$	$\frac{1}{4}$	Kashmir . . .	Bombay Natural History Society.
9 $\frac{3}{8}$	5 $\frac{3}{8}$	3 $\frac{7}{8}$	Chamba . . .	Lieut.-Col. C. W. Tribe.
9 $\frac{1}{4}$	5	3 $\frac{1}{2}$	Do. . . .	Capt. H. Meynell.
9 $\frac{1}{4}$	4 $\frac{1}{2}$	3	Do. . . .	Major the Hon. A. Hamilton-Russell.
9 $\frac{1}{4}$	4 $\frac{3}{4}$	4 $\frac{1}{4}$	Do. . . .	H. L. P. Walsh.
9 $\frac{1}{4}$	5 $\frac{1}{4}$	...	Do. . . .	Capt. L. R. Hogge.
9 $\frac{1}{4}$	5 $\frac{1}{4}$	3	Do. . . .	Capt. W. B. Baker.

OWNER'S MEASUREMENTS.

12 $\frac{3}{4}$	6	...	?	E. C. Stuart Baker.
12	...	...	Himalaya . . .	Lieut.-Col. A. E. Ward.
10 $\frac{7}{8}$	5	4	?	V. A. Mackinnon.
10 $\frac{1}{2}$	5 $\frac{5}{8}$	3 $\frac{1}{2}$	Garhwal . . .	A. P. Davis.
♀ 9 $\frac{3}{8}$	5 $\frac{1}{8}$	4	Sind Valley, Kashmir .	Major P. H. G. Powell-Cotton.



White-Maned Serow. Shot by Mr. G. Fenwick-Owen.

WHITE-MANED SEROW (*Capricornis argyrochoetes*).

A large species of a mingled rufous grey colour, with more or less white in the mane and the thighs, and whole of the limbs rufous. Weight, about 250 lbs. (G. Fenwick-Owen).

Distribution.—Sze-chuan, Kan-su, and Shen-si.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$9\frac{9}{16}$	$5\frac{3}{4}$	4	Sze-chuan . . .	British Museum (the late J. W. Brooke).
$-9\frac{1}{2}$	$7\frac{1}{2}$	4	Do.	Paris Museum.
$7\frac{7}{8}$	$4\frac{7}{8}$	$4\frac{7}{8}$	W. Kan-su	G. Fenwick-Owen.
$\text{♀ } 7\frac{1}{4}$	$4\frac{1}{4}$	$2\frac{5}{8}$	Kan-su, Tibet Border	K. K. Horn.

— Owner's measurements.



Kan-su Takin. Shot by Mr. G. Fenwick-Owen.

The TAKIN (*Budorcas taxicolor*).

Probably also akin to the musk-ox, this ruminant is a relative of the serows. It is heavily built, with stout limbs, large lateral hoofs, a short tail, a convex profile, and a partially hairy muzzle. The horns, which are large, massive, and bent somewhat after the fashion of those of the gnu, curve at first outwards and somewhat downwards, and then bend abruptly upwards about the middle of their length. Height at shoulder, about $3\frac{1}{2}$ feet. Horns are present in both sexes, as in the serows and gorals, those of females being smaller than those of males. The general colour varies from greyish brown with a light saddle, and passing into blackish on the head, limbs, and underparts, with a continuous dark dorsal streak, to deep rufous or black.

Distribution.—Typically the Mishmi Hills on the northern frontier of Assam, but represented by the small-horned *B. t. whytei* in Bhutan.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
23 $\frac{1}{4}$	12 $\frac{1}{2}$	10 $\frac{3}{4}$	Mishmi Hills	Capt. H. C. Nicolay.
22 $\frac{1}{2}$	11 $\frac{1}{4}$	12	Do.	Hon. Walter Rothschild.
22 $\frac{3}{8}$	10 $\frac{5}{8}$	14 $\frac{3}{4}$	Do.	British Museum.
22 $\frac{3}{8}$	11	12	Do.	Duke of Bedford.
22 $\frac{1}{4}$	10 $\frac{1}{2}$	10 $\frac{3}{4}$	?	Major C. P. Gunter.
21 $\frac{1}{4}$	11 $\frac{1}{4}$	10 $\frac{1}{2}$	Abor Country	Sir Edmund G. Loder, Bart.
21	12	13 $\frac{1}{2}$	Mishmi Hills	A. J. Walter.
20 $\frac{7}{8}$	11 $\frac{3}{8}$	11 $\frac{7}{8}$	Do.	British Museum (Hume Collection).
20 $\frac{3}{4}$	11 $\frac{7}{8}$	12 $\frac{1}{2}$	Do.	British Museum (Hume Collection).
20 $\frac{1}{4}$	11 $\frac{1}{4}$	10	S.E. Tibet	Capt. F. M. Bailey.
19 $\frac{3}{4}$	12 $\frac{1}{4}$	12 $\frac{1}{2}$	Tibet (?)	Hon. Walter Rothschild.
♀ 15	9	8 $\frac{1}{2}$	Do.	Lord Osborne Beauclerk.

OWNER'S MEASUREMENTS.

25	13	11 $\frac{1}{2}$	Mishmi Hills	F. J. Needham.
24 $\frac{1}{4}$	...	...	Do.	Col. J. Biddulph.
24 $\frac{1}{4}$	12 $\frac{3}{4}$	12 $\frac{3}{4}$	Do.	Indian Museum.
22	12 $\frac{3}{4}$	12 $\frac{1}{4}$	Do.	Bombay Natural History Society.
21 $\frac{1}{4}$	11	7 $\frac{1}{2}$	Do.	R.E. Mess, Roorkee.

SZE-CHUAN and KAN-SU TAKIN (*Budorcas tibetana* and *B. bedfordi*).

Typically the colour of the fore-quarters in the Sze-chuan race is bright orange, passing into greyish behind and beneath, with the ears and lower part of the face black, and the dorsal stripe stopping at withers. In a second phase the orange area is replaced by dirty white and pale grey. Horns relatively long and slender. In Shen-si and part of Kan-su this race is replaced by *B. bedfordi*, which is wholly orange, or orange-brown.

Distribution.—The first race inhabits Sze-chuan, Yun-nan, Tibet, and part of Kan-su.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22 $\frac{3}{4}$	10 $\frac{1}{2}$	9 $\frac{1}{2}$	Tsinling Mountains, Shen-si.	G. Fenwick-Owen.
20 $\frac{1}{2}$	11 $\frac{1}{2}$	11 $\frac{3}{4}$	Kan-su, China	Hon. Walter Rothschild.
20 $\frac{1}{2}$	12 $\frac{1}{4}$	11 $\frac{3}{8}$	S. Shen-si	British Museum.
20 $\frac{1}{4}$	11 $\frac{1}{8}$	8 $\frac{3}{4}$	Tsinling Mountains, Shen-si	H. F. Wallace.
-19 $\frac{3}{8}$	11 $\frac{1}{2}$	13 $\frac{3}{8}$	Sze-chuan	Paris Museum (Abbé A. David).
-18 $\frac{1}{2}$	12	16	Nr. Ta-chi-lu	M. Mitchell.
17 $\frac{3}{4}$	12 $\frac{1}{2}$	11 $\frac{1}{4}$	Shen-si	K. K. Horn.

- Owner's measurements.



Head of Rocky Mountain Goat.

The ROCKY MOUNTAIN GOAT (*Oreamnus americanus*).

(Also known as *Haploceros montanus*.)

This is one of the very few mammals that are permanently white or whitish at all seasons ; and although commonly termed a goat, really belongs to the same group as the serows, which it closely resembles in the form and colour of the horns. In winter the hair is very long and pure white in colour ; along the back it is erect, and much elongated on the withers and haunches, so as to give to the animal the appearance of possessing a pair of humps. The summer coat is comparatively short, and has a yellowish tinge. There is a black gland, sometimes as large as half an orange, at the back of the base of each horn. Height at shoulder, from 3 feet to 3 feet 9 inches ; weight, about 300 lbs. Four local races have been named. Of these, the typical Rocky Mountain race is of medium size, with a broad skull ; the British Columbian *O. a. columbæ* is larger, with a narrow skull ; while the Montana *O. a. missoulæ*, which also has a narrow skull, is small. The Alaskan *O. a. kennedyi* differs by its slender and widely divergent horns.

Distribution.—North America ; throughout the Rocky Mountains, from the Salmon River, Idaho, nearly as far north as Cook's Inlet, Alaska.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{5}{8}$	6	7 $\frac{1}{2}$	Cassiar . . .	Major J. F. Church.
10 $\frac{3}{8}$	6 $\frac{1}{4}$	7 $\frac{1}{2}$	Do. . . .	K. K. Horn.
10 $\frac{1}{4}$	6	6 $\frac{3}{4}$	Montana . . .	D. Davies.
10 $\frac{1}{4}$	5 $\frac{1}{4}$	5 $\frac{1}{2}$	British Columbia .	R. Rankin.
10 $\frac{1}{4}$	6	7	Do. . . .	H. B. Tate.
10 $\frac{1}{4}$	6	...	Cassiar . . .	R. Beaumont.
10 $\frac{1}{4}$	5 $\frac{3}{4}$	6	Do. . . .	C. H. Young.
10 $\frac{1}{8}$	5	6 $\frac{1}{8}$	?	E. N. Buxton.
10 $\frac{1}{8}$	5 $\frac{3}{8}$	7 $\frac{1}{8}$	British Columbia .	Hon. M. Egerton.
10	5 $\frac{3}{8}$	5 $\frac{3}{8}$	Do. . . .	Rev. Lord Victor Seymour.
10	5 $\frac{1}{4}$	7 $\frac{1}{4}$	Cassiar . . .	M. W. Ward.
9 $\frac{3}{4}$	5 $\frac{1}{4}$	6 $\frac{1}{4}$	Do. . . .	W. A. Conduitt.
9 $\frac{3}{4}$	4 $\frac{1}{2}$	7 $\frac{1}{2}$	?	S. H. Christy.
9 $\frac{3}{4}$	6	6 $\frac{3}{4}$	Cassiar . . .	H. C. Wilson.
9 $\frac{3}{4}$	4 $\frac{3}{8}$	6	Do. . . .	A. H. Goodall.
9 $\frac{3}{8}$	6	6 $\frac{3}{4}$	Do. . . .	J. S. Shepherd.
9 $\frac{5}{8}$	5 $\frac{1}{4}$	5 $\frac{1}{2}$	British Columbia .	G. C. Whitaker.
9 $\frac{5}{8}$	4 $\frac{1}{2}$	7	Do. . . .	T. A. Henderson.
9 $\frac{5}{8}$	5 $\frac{1}{4}$	6 $\frac{1}{8}$	Cassiar . . .	Sir Edmund G. Loder, Bart.
9 $\frac{1}{2}$	5 $\frac{1}{2}$	5	?	F. Edelman.
9 $\frac{1}{2}$	4 $\frac{3}{4}$	6 $\frac{3}{4}$	British Columbia .	P. N. Graham.
9 $\frac{1}{2}$	4 $\frac{3}{4}$	8 $\frac{3}{4}$	Do. . . .	R. M. Spence.
9 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{1}{4}$	Alaska . . .	St. George Littledale.
9 $\frac{1}{2}$	4 $\frac{1}{2}$	...	North America .	J. D. Cobbold.
9 $\frac{1}{4}$	5 $\frac{1}{4}$	6 $\frac{3}{8}$	East Kutenay, B.C. .	A. E. Butter.
9 $\frac{1}{2}$	6	5	British Columbia .	W. Neilson.
9 $\frac{1}{2}$	5 $\frac{3}{4}$	5 $\frac{1}{4}$	Do. . . .	H. F. Wallace.
9 $\frac{1}{4}$	5 $\frac{1}{2}$	6	Do. . . .	P. K. Glazebrook.

OWNER'S MEASUREMENTS.

12 $\frac{1}{2}$	5 $\frac{1}{4}$	11 $\frac{1}{2}$	British Columbia .	Wilson Potter.
11 $\frac{1}{2}$	...	...	Do. . . .	Clive Phillipps-Wolley.
♀ 11 $\frac{1}{2}$	4 $\frac{3}{4}$	6 $\frac{1}{4}$	Montana . . .	G. L. Harrison.
10 $\frac{7}{8}$	7	...	Cassiar . . .	Col. Max C. Fleischmann.
10 $\frac{7}{8}$	...	...	?	S. E. White.
10 $\frac{1}{2}$	5 $\frac{3}{4}$	...	Montana . . .	Walter James.
10 $\frac{3}{16}$	...	4 $\frac{7}{8}$	British Columbia .	Madison Grant.
♀ 10 $\frac{1}{3}$	4 $\frac{3}{4}$	...	Do. . . .	Capt. A. Egerton.
10	6	6 $\frac{1}{2}$	Idaho . . .	R. Edmunds.



Head of Greenland Musk-Ox.

The MUSK-OX (*Ovibos moschatus*).

In spite of its name, this Arctic ruminant has no near affinity with the members of the ox tribe, the cheek-teeth being more like those of the sheep and goats, the muzzle, except for a small strip between the nostrils, hairy, and the tail reduced to a mere stump concealed among the long hair of the hind-quarters. On the other hand, the resemblance to the sheep is by no means close, the horns, which in old males nearly meet in the middle line of the forehead, being of a totally different form and structure, and the skull likewise very distinct. Probably the genus is more or less nearly related to the serows and takins. In the males the horns are much flattened and expanded at the bases, after which they are bent suddenly down behind the eyes, to curve upwards again at the tips. In the females they are much smaller, less expanded, and not approximated at their bases. In both sexes their texture is coarse and fibrous, and the colour yellow. The long coat of dark brown hair depending from the back and sides like a mantle affords an adequate protection against the rigors of an Arctic winter; and the broad spreading hoofs, with hair on their under surface, give a firm foothold on snow and ice. Several races are known, including the typical

Canadian and the Greenland *O. moschatus wardi*. The latter is characterised by the presence of a certain amount of white on the forehead and the smaller expansion of the horns. Height at shoulder, about 4 feet. Weight of a bull (piecemeal), 579 lbs. (the late D. T. Hanbury).

Distribution.—Arctic America, approximately north and east of a line drawn from the mouth of the Mackenzie River to Fort Churchill on Hudson Bay, Greenland, and Grinnell-land; approximate southern limit, lat. 60° N. About a century ago musk-oxen also inhabited the districts west of the Mackenzie, including Alaska.

A.—CANADIAN RACE (*O. moschatus typicus*).

Length on outside curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
27 $\frac{3}{4}$	10	27 $\frac{1}{2}$	Barren Grounds . . .	The late David T. Hanbury.
27 $\frac{1}{2}$	10	23 $\frac{1}{2}$	Do.	H. Darrell.
27 $\frac{1}{4}$	12 $\frac{1}{2}$	27	Do.	Earl of Lonsdale.
26 $\frac{7}{8}$	11	27	Do.	American National Collection (Warburton Pike).
26 $\frac{3}{4}$	12 $\frac{5}{8}$	...	Arctic America . . .	British Museum (J. Rae).
24 $\frac{3}{4}$	11	25 $\frac{1}{2}$	Barren Grounds . . .	Warburton Pike.
24 $\frac{1}{4}$	7 $\frac{1}{2}$	19	Do.	J. Talbot Clifton.
24 $\frac{1}{4}$	10 $\frac{1}{2}$	26	Do.	Hon. Walter Rothschild.
24	9 $\frac{3}{4}$	23 $\frac{1}{8}$	Arctic America . . .	Sir Edmund G. Loder, Bart.
23 $\frac{1}{4}$	6	22 $\frac{3}{4}$	Do.	A. Barclay Walker.
23	10	23 $\frac{1}{2}$	Do.	His Majesty the King.
23	7	21 $\frac{1}{2}$	Do.	Royal Scottish Museum.

B.—GREENLAND RACE (*O. moschatus wardi*).

Length on outside curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
24 $\frac{3}{4}$	8 $\frac{1}{4}$	22 $\frac{1}{2}$	Greenland	British Museum (the late Rowland Ward).
♀ 24 $\frac{1}{2}$	7 $\frac{1}{4}$	27	Do.	Do.
23	7	23 $\frac{1}{2}$	Do.	H. R. H. the Duc d'Orléans.

OWNER'S MEASUREMENTS.

33	12 $\frac{1}{2}$	24 $\frac{1}{2}$	Barren Grounds of Northern Canada	N. J. Dinnen.
30 $\frac{1}{4}$	13 $\frac{3}{4}$	30 $\frac{1}{4}$	?	J. C. Phillips.
29	11	28	Greenland	Dr. M. E. Johnstone.
28 $\frac{3}{4}$	13 $\frac{1}{2}$	23 $\frac{3}{4}$	?	G. L. Harrison.
27 $\frac{1}{2}$	11 $\frac{3}{4}$	23	Barren Grounds . . .	Caspar Whitney.
27 $\frac{1}{4}$	10 $\frac{5}{8}$	27 $\frac{1}{2}$	Do.	Imperial Museum, Vienna.
♀ 21 $\frac{1}{8}$	4 $\frac{3}{4}$	20 $\frac{5}{8}$	Arctic America . . .	Do.



Head of Tahr.

The TAHR (*Hemitragus jemlaicus*).

The tahr and its relatives are the first representatives of that great group of ruminants which includes the true goats and sheep. In all these animals horns are, as a rule, present in both sexes, and are generally more or less distinctly angulated; while the cheek-teeth have tall and narrow crowns like those of the serows, which the tahr serve to connect with the true goats. From the latter tahr are readily distinguished by the small size of their horns, which exceed but little in length the head, as well as by the absence of a beard on the chin of the males. The typical tahr is easily recognised by the great length of the hair of the body, which, although in museum specimens generally combed straight, is very shaggy in nature; and likewise by the form of the horns, which have a knotted sharp keel in front. Height at shoulder, from 36 to 40 inches; weight, about 200 lbs. Mr. Wilson, "Mountaineer," had a pair of horns with a length of $16\frac{1}{2}$ and girth $10\frac{1}{2}$ inches, as measured by Mr. A. O. Hume.

Distribution.—The Himalaya, from Bhutan to Kashmir.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
15	9 $\frac{3}{4}$	5 $\frac{3}{4}$	Chamba	Col. C. M. Haggard.
14 $\frac{9}{16}$	8 $\frac{3}{4}$	...	Do.	Major J. S. Rivett-Carnac.
14 $\frac{1}{2}$	8 $\frac{3}{4}$	...	Do.	Earl of Altamont.
14 $\frac{1}{4}$	9	4 $\frac{3}{4}$	Kishtwar	Capt. W. F. Corbett.
14 $\frac{1}{4}$	8 $\frac{7}{8}$	4 $\frac{3}{8}$	?	Lieut.-Col. A. Cadell.
14 $\frac{1}{8}$	8 $\frac{7}{8}$	6 $\frac{5}{8}$	Kunlaon	British Museum (Hume Collection).
14	9	6	Chamba	II. H. the Raja of Chamba.
14	9	6 $\frac{5}{8}$	Do.	Major R. St. J. Gillespie.
14	8 $\frac{5}{8}$	5 $\frac{5}{8}$	?	R. Heber-Percy.
14	8 $\frac{3}{4}$	7	?	C. V. Stockwell.
14	9	3 $\frac{1}{4}$	Padir	P. F. Hadow.
13 $\frac{7}{8}$	9	8 $\frac{3}{4}$	Chamba	Hugo de Burgh.
13 $\frac{3}{4}$	8 $\frac{3}{4}$	7 $\frac{1}{4}$	Do.	P. Radclyffe.
13 $\frac{3}{4}$	9	11 $\frac{1}{4}$	?	British Museum (Hume Collection).
13 $\frac{3}{4}$	8 $\frac{1}{4}$	7 $\frac{3}{4}$	?	I. Morse.
13 $\frac{5}{8}$	9 $\frac{1}{2}$	6 $\frac{3}{4}$	?	G. M. Ram.
13 $\frac{1}{2}$	8 $\frac{1}{2}$	7 $\frac{1}{2}$	Kashmir	J. H. Phelps.
13 $\frac{1}{2}$	8 $\frac{1}{2}$	7 $\frac{1}{4}$	Chamba	Col. H. D. Olivier.
13 $\frac{1}{2}$	9	6 $\frac{3}{4}$	Kishtwar	P. B. Vander Byl.
13 $\frac{1}{2}$	9 $\frac{1}{2}$	6 $\frac{1}{4}$	?	R. C. Watson.
13 $\frac{1}{2}$	9	7 $\frac{1}{2}$	?	Sir H. E. M. James.
13 $\frac{3}{8}$	9	8 $\frac{7}{8}$	Garhwal	Capt. A. W. Robertson-Glasgow.
13 $\frac{3}{8}$	9 $\frac{1}{8}$	5 $\frac{3}{4}$	?	Hon. Walter Rothschild.

OWNER'S MEASUREMENTS.

15 $\frac{1}{2}$	8 $\frac{1}{4}$	8 $\frac{3}{4}$	Garhwal	V. A. Mackinnon.
14 $\frac{1}{16}$	8 $\frac{3}{4}$	5	Chamba	Major J. T. C. Murray.
14 $\frac{7}{8}$	9 $\frac{1}{4}$	7 $\frac{1}{2}$	Garhwal	Mess of the 3rd Gurka Rifles.
14 $\frac{1}{2}$	9 $\frac{1}{2}$	7 $\frac{1}{2}$	Chamba	R.E. Mess, Roorkee.

The ARABIAN TAHR (*Hemitragus jayakeri*).

A much smaller and rather shorter-haired species than the last, of a generally tawny-brown colour, with relatively longer and more slender horns, which are less boldly knotted on the front edge. Height at shoulder, about $24\frac{1}{2}$ inches.

This species, of which the type specimen is in the British Museum, was first obtained by the late Col. Jayaker, in honour of whom it was named by Mr. O. Thomas in 1894.

Distribution.—Jebel Taw, and probably some of the other ranges of Oman, South-East Arabia.

Length on front curve.	Circumference.	Locality.	Owner.
$-11\frac{5}{8}$	...	Oman Mountains . . .	The late Lieut.-Col. A. S. G. Jayaker.
$-11\frac{1}{2}$	$5\frac{1}{3}$	?	Bombay Natural History Society.

— Owner's measurements.



Head of Nilgiri Tahr.

The NILGIRI TAHR or "IBEX" (*Hemitragus hylocrius*).

Although commonly designated by British sportsmen the "Nilgiri ibex," this species (the warriattu of the native shikaris) is really a member of the same genus as the Himalayan tahr. From that species it is at once distinguished by its short hair and the form of the horns; the latter having the outer surface convex instead of flat, and lacking the knotted front keel. The general colour is dark blackish brown, old males developing a light saddle-like patch on the back. Height at shoulder, from 39 to 42 inches in the males and up to 35 inches in the females.

Distribution.—The hill-ranges of Southern India, including the Nilgiris, Anamalais, and the Western Ghats nearly to Cape Comorin; usually at elevations of from 4000 to 6000 feet, but occasionally descending to lower levels. This species was greatly reduced in numbers by constant persecution, but since the herds have been under Government protection, and a special permit is necessary for shooting, there has been a large increase.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16 $\frac{3}{4}$	8 $\frac{7}{8}$	5 $\frac{5}{8}$	Nilgiris	British Museum (Hume Collection).
16 $\frac{1}{2}$	8 $\frac{1}{2}$	5	Do.	Col. R. Hoare.
16 $\frac{1}{2}$	8 $\frac{1}{4}$	6	Do.	S. G. Bird.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{7}{8}$	7 $\frac{3}{4}$	5 $\frac{3}{8}$	Nilgiris	J. H. Whitehouse.
15 $\frac{1}{2}$	8 $\frac{5}{8}$	7 $\frac{7}{8}$	Do.	Sir Edmund G. Loder, Bart.
15 $\frac{3}{8}$	8 $\frac{3}{4}$	6 $\frac{3}{4}$	Do.	Martyn Kennard.
15 $\frac{5}{8}$	8 $\frac{1}{4}$	6	Do.	St. George Littledale.
15 $\frac{1}{4}$	7 $\frac{3}{4}$	5 $\frac{3}{4}$	Do.	G. L. Harrison.
15	8 $\frac{1}{4}$	5 $\frac{1}{8}$	Do.	The late Sir H. D. Tichborne, Bart.
14 $\frac{3}{4}$	8 $\frac{1}{2}$	5 $\frac{5}{8}$	Do.	Capt. C. S. Timins.
14 $\frac{3}{4}$	8 $\frac{1}{4}$	7 $\frac{1}{4}$	Anamalai Hills	M. Loan.
14 $\frac{1}{2}$	8 $\frac{3}{4}$	6 $\frac{1}{4}$	Nilgiris	British Museum.
14 $\frac{1}{2}$	8 $\frac{5}{8}$	5 $\frac{1}{8}$	Do.	Sir Victor Brooke's Collection.
14 $\frac{3}{8}$	8	4 $\frac{5}{8}$	Anamalai Hills	Capt. T. W. Greenfield.
♀ 12 $\frac{3}{8}$	5 $\frac{1}{2}$	2 $\frac{3}{8}$	Do.	M. Loam.
♀ 11 $\frac{3}{4}$	5 $\frac{3}{4}$	4 $\frac{1}{8}$	Do.	Hon. Walter Rothschild.

OWNER'S MEASUREMENTS.

17 $\frac{1}{2}$	9 $\frac{7}{8}$	6	Nilgiris	Rhodes Morgan.
17	9 $\frac{3}{4}$	...	Do.	Measured by Gen. MacMaster, 1869.
16 $\frac{1}{2}$	...	...	Do.	St. George Littledale.
15 $\frac{1}{2}$	8 $\frac{3}{4}$	4 $\frac{3}{4}$	Do.	Major F. W. H. Walshe.



Head of Astor Markhor. Shot by Capt. H. Barstow in Gilgit.

The MARKHOR (*Capra falconeri*).

The markhor, of which there are several races, passing more or less completely into one another, introduces us to the true goats (*Capra*). The males differ from the tahr by their larger horns, the length of which greatly exceeds that of the head, and likewise by the presence of a distinct beard on the chin. In most races of the markhor the beard is extended so as to form a fringe on the throat and chest; the hair on the body is also elongated; and the horns form a spiral, unlike the scimitar-shape characteristic of the ibex and goat. In Gilgit the summer coat is yellowish white, and the winter-dress of the old bucks dark iron-grey.

Distribution.—The Western Himalaya, Gilgit, Afghanistan, Bokhara, etc.

A and B.—ASTOR and PIR PANJAL MARKHOR

(C. f. *typica* and C. f. *cashmiriensis*).

In the Astor, *C. falconeri typica*, and Pir Panjal, *C. falconeri cashmiriensis*, races of the markhor the horns take the form of an open corkscrew-like spiral, with comparatively few turns, recalling those of the kudu; the spiral being most open, the spread widest, and the turns fewest in the Astor form. Height at shoulder of a Gilgit specimen, $38\frac{1}{2}$ inches; of Kashmir specimens, from 38 to 41 inches; weight, from about 200 to 240 lbs. The Astor race is found in Astor, Baltistan, and Chilas, while the Pir Panjal form inhabits the Pir Panjal and Kajnag ranges of Kashmir, and extends to the north-west into Hazara. In Chitral and Gilgit occur gradations between horns of the Pir Panjal and Astor types.

On outside curve.	Length. Straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
60 $\frac{3}{4}$	39 $\frac{1}{4}$	11 $\frac{1}{4}$	46	Gilgit . . .	Capt. H. Barstow. (See illustration, p. 358.)
59	36	10 $\frac{3}{4}$	...	Kajnag . . .	Lieut.-Col. S. D. Turnbull.
57 $\frac{3}{4}$	42	10 $\frac{3}{4}$	41	Do. . . .	Major A. R. Knox.
57 $\frac{1}{2}$	40	..	47 $\frac{1}{2}$	Drosh . . .	Capt. B. C. Graham.
56	51 $\frac{1}{2}$	...	...	Near Bunji . . .	Capt. T. S. Johnson.
55	44 $\frac{1}{4}$	11	47	?	East India Club.
55	...	...	...	Astor . . .	The late Otho Shaw.
54 $\frac{1}{4}$	...	10 $\frac{1}{2}$	26 $\frac{1}{2}$	?	British Museum (Hume Collection).
54	...	10 $\frac{5}{8}$	33 $\frac{3}{4}$	Astor . . .	Martyn Kennard.
53 $\frac{3}{4}$	38 $\frac{1}{4}$	12 $\frac{1}{4}$	40 $\frac{1}{2}$	Do. . . .	Lieut.-Col. J. Manners Smith.
53 $\frac{3}{4}$	37 $\frac{3}{4}$	10	35	Chilas . . .	Major C. A. Smith.
53 $\frac{1}{4}$	40 $\frac{1}{2}$	12	43 $\frac{3}{4}$	Do. . . .	Capt. J. A. Pottinger.
¹ 53 $\frac{1}{4}$	42 $\frac{1}{2}$	11 $\frac{1}{2}$	52 about	Astor . . .	Sir Victor Brooke's Collection.
53	40	11	42	Gilgit . . .	Capt. H. F. L. Grant.
53	38 $\frac{3}{4}$	9 $\frac{3}{4}$	35 $\frac{1}{2}$	Do. . . .	Hon. Walter Rothschild.
53	35 $\frac{3}{4}$	11 $\frac{3}{4}$	34 $\frac{1}{2}$	Pir Panjal . . .	Major F. W. H. Walshe.
53	34 $\frac{1}{4}$	11	32	Astor . . .	Lieut.-Col. the Hon. C. Willeoughby.
52 $\frac{3}{4}$	37 $\frac{1}{2}$	11	35 $\frac{1}{2}$	Kajnag . . .	Major A. G. W. Malet.

¹ Shot by Capt. Harry V. Brooke.

On outside curve.	Length. Straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
52½	39	11	39	Gilgit . . .	Col. G. D. F. Sullivan.
52½	38¾	12¼	44½	Chilas . . .	P. F. Hadow.
51⅝	36½	11⅝	37½	Gilgit . . .	Lieut.-Col. E. E. M. Gurdon.
51½	40¼	13½	34	Astor . . .	Capt. H. Whitaker.
51⅜	37⅞	10	33	Pir Panjal . . .	Sir Edmund G. Loder, Bart.
51⅝	...	12	44¼	Haramosh . . .	Major P. H. G. Powell-Cotton.
51	36½	11¼	40½	Chilas . . .	Capt. A. H. Cameron.
51	36¼	11½	31	Kajnag . . .	Sir H. E. M. James.
51	36½	11	34½	Do. . . .	Col. J. W. A. Morgan.
50¾	36¼	12	35½	Do. . . .	Mess of the Seaforth Highlanders.
50½	36¼	11	35	Do. . . .	J. Arbuthnot.
50½	35¾	10½	45½	Haramosh . . .	Capt. B. H. Shaw-Stewart.
50¼	39	12	...	Do. . . .	W. R. Read.
50	38	11⅝	36	Astor . . .	Sir Edmund G. Loder, Bart.
50	36½	12	36	Chilas . . .	Major W. Hayes-Sadler.
50	37	11	46	?	Major C. R. Kelly.
50	32¼	10	31	?	Capt. S. M. Toppin.
49½	37¼	12	35	Baltistan . . .	H. H. Cripps.
49½	39	12¼	32½	?	G. O. Smyth.
49¼	36	11¼	32	Chilas . . .	Major L. W. S. Oldham.
49¼	36½	11½	31	?	Capt. A. Young.
49	35	14	44	Astor . . .	British Museum (Hume Collection).
49	34½	10½	37	?	Lieut.-Col. E. B. Cook.
49	33¼	10½	37½	?	P. Radclyffe.
49	32¾	11⅝	36¾	?	N. S. Regnart.
48¾	34¾	12½	36¾	Haramosh . . .	Hon. H. G. O. Bridgeman.
48¾	34	10¼	30½	?	Capt. H. A. G. Chamier.
48½	39½	9	27	Pir Panjal . . .	J. G. Millais.
48½	35	13	41	Chilas . . .	J. D. Cobbold.
48½	...	11½	45	Astor . . .	Capt. M. Murphy.
48½	32	11	31½	Baltistan . . .	Major C. A. Smith.
48½	36½	11	33½	?	Capt. A. H. Wilson.



Skull and Horns of Pir Panjal Markhor.

From a specimen presented by the late Mr. A. O. Hume to the British Museum.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
48½	35	11	29½	?	Capt. the Hon. A. C. Murray.
48	34	10¾	36	Astor . . .	His Majesty the King.
48	37¾	12¾	29	Pir Panjal . . .	British Museum (Hume Collection). (See illustration on this page.)
48	37	11	41	?	Capt. E. Berry.
48	34	9½	39	?	Capt. A. Marshall.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
48	34	10 $\frac{3}{4}$	31 $\frac{3}{4}$	?	H. W. Seton.
48	36 $\frac{1}{2}$	11	30	Chilas (?)	Capt. E. Le G. Whitting.

OWNER'S MEASUREMENTS.

163	...	...	...	Pir Panjal . . .	Major-General A. A. A. Kinloch.
60	...	...	...	Astor . . .	Lucknow Museum.
59	...	12	36	Kajmag . . .	The late Major J. C. Shirres.
57 $\frac{1}{2}$	...	11 $\frac{1}{4}$	40	Do. . .	Capt. H. D. McLaughlin.
57	40 $\frac{1}{2}$	9 $\frac{3}{4}$	38	Gilgit . . .	Marquis of Lansdowne.
56 $\frac{1}{2}$	38	11	38	Kashmir . . .	J. Benett-Stanford.
56 $\frac{1}{4}$	35	10 $\frac{3}{4}$	37	Gilgit . . .	W. P. Appleford.
56	36 $\frac{5}{8}$	13 $\frac{2}{8}$	34 $\frac{5}{8}$	Kashmir . . .	Viscount Edmond de Poncins.
55 $\frac{1}{2}$	...	9 $\frac{1}{4}$	31 $\frac{1}{4}$	Chilas . . .	Mess of the Queen's Own Corps of Guides.
55	39	11	34	Gilgit . . .	F. M. Hodgkins.
55	38 $\frac{11}{16}$	11	41 $\frac{1}{4}$	Do. . .	Mess of the 3rd Gurka Rifles.
53	33 $\frac{1}{2}$	10 $\frac{1}{2}$	...	Baltistan . . .	W. M. Logan-Home.
53	31 $\frac{1}{2}$	10	33 $\frac{3}{4}$	Gilgit . . .	Capt. H. R. P. Dickson.

¹ Picked up either on the Pir Panjal or the Kajmag Range by the late Col. Cuppage, and measured by General Kinloch.

Certain horns in the Hume Collection indicate a type in some degree intermediate between the Panjal and the Cabul type; their place of origin is unknown, but was probably somewhere west of the Indus.

CHITRAL SPECIMENS.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
50½	37	10	34¼	Chitral . . .	Capt. R. A. Lyall.
50	36	10	33	Do. . . .	Major R. H. Macdonald.
47¼	34	10½	39	Do. . . .	H. Gough.

OWNER'S MEASUREMENTS.

57	38	10¼	35	Chitral . . .	Bombay Natural History Society.
56	41	11½	32	Do. . . .	Major C. Rose.
53	...	11	34	Do. . . .	Col. A. C. O'Donnell.
52	34	10	33¾	Do. . . .	Capt. G. W. Burton.
51¾	...	11	30½	Do. . . .	Capt. J. Carruthers.
51¼	...	...	36	Do. . . .	Major G. A. Leslie.
49	39¼	11½	...	Do. . . .	Major C. R. Johnson.

C.—CHIALTAN RACE (*C. falconeri chialtanensis*).

Differs from other races in the form of the spiral of the horns. May perhaps turn out to be a hybrid between the markhor and domesticated goat; some Chialtan specimens being almost certainly of this nature.

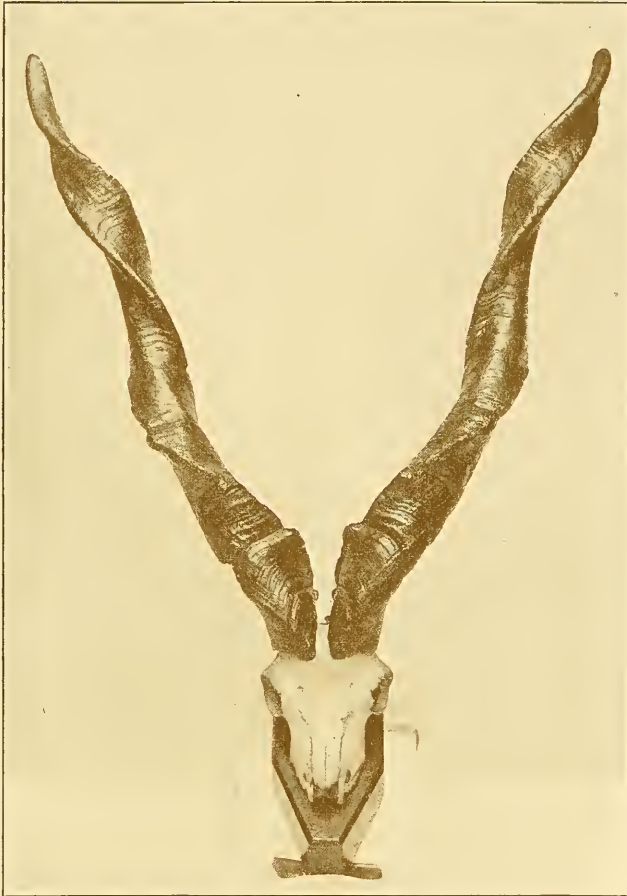
Distribution.—The Chialtan Range of Baluchistan.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
-36	25	8½	...	Chialtan Range .	Capt. W. M. Hunt (<i>The Field</i> , June 7, 1913).
34½	26	9	13½	Do. . . .	British Museum (Col. H. Appleton).
-34	27	9	...	Do. . . .	Capt. W. M. Hunt (<i>The Field</i> , June 7, 1913).

- Owner's measurements.



Skull and Horns of Suleman Markhor. From a specimen presented by the late Mr. A. O. Hume to the British Museum.



Skull and Horns of Cabul Markhor. From a specimen presented by the late Mr. A. O. Hume to the British Museum.

D. and *E.*—**CABUL and SULEMAN RACES**

(*C. falconeri megaceros* and *C. f. jerdoni*).

In the Cabul race of the markhor (*C. falconeri megaceros*), typically from the trans-Indus districts near Cabul, the horns are nearly straight, but show a slightly open spiral; being, in fact, intermediate between those of the Pir Panjal and Suleman races. Markhor from the Chitral valley generally have horns of the Cabul type, but in some cases these conform to the Pir Panjal type; both types occurring in the members of one and the same flock. In the Suleman markhor (*C. falconeri jerdoni*) the horns form a perfectly straight cone, upon which the spiral ridges run

like the "worm" of a screw. The distributional area of the latter race includes the trans-Indus hill-ranges on the frontier of the Punjab, Afghanistan, and Baluchistan, extending in the Suleman range as far as Mithankot, and also to the Quetta district.

Length. Straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
48½	7¾	Odd horn Suleman race	?	British Museum.
39¾	10¼	24¼	Afghanistan . . .	British Museum (Col. Grant).
39¼	12¼	38	Range 25 miles N.W. of Wana	A. J. Grant.
38½	10½	23¾	Afghanistan . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
38	10	26	Cabul	Capt. O. H. Radford.
37	10	32	Kurram Valley . . .	Lieut.-Col. Sir G. Roos-Keppel.
35¾	9¾	15	Khyber Pass . . .	Major E. Kirkpatrick.
34	11	23	?	G. F. Giffard.
33	9¼	19¾	Afghanistan . . .	Sir Edmund G. Loder, Bart.
32¾	9¾	20	Waziristan	Major G. Dodd.
32¼	9¾	28	?	British Museum (Hume Col- lection).
32	10	27½	Cabul	British Museum (Hume Col- lection). See illustration on page 365.
31½	9½	27	Suleman Range . . .	Hon. Walter Rothschild.
30¾	10	25	Baluchistan	Col. J. Biddulph.
30	9½	20¾	S. Waziristan . . .	Capt. A. G. Shea.
29¾	8¼	23¾	Baluchistan	Lieut.-Col. R. H. Rattray.
29¼	10	19	Khyber Pass	Major A. L. Bickford.
29	10½	16	?	American National Collection.
28½	9½	18¾	Sheik Budin	J. C. Phillips.
27	9	18	Do.	Col. J. Biddulph.
26¾	11¼	22½	Suleman Range . . .	British Museum (Hume Col- lection). See illustration on page 364.

OWNER'S MEASUREMENTS.

36	11	32	Bunnu	F. M. Hodgkins.
33½	10¼	23	?	Bombay Natural History Society.
32½	10	22½	Bunnu	Mess of the Queen's Own Corps of Guides.
31¼	9½	17¾	?	C. P. Henderson.
31	9¾	25	?	R. E. Mess, Roorkee.



Head of Tien Shan race of Asiatic Ibex. From Lord Elphinstone's specimen.

The SAKIN or ASIATIC IBEX (*Capra sibirica*).

The first of the true ibexes, in all of which the long scimitar-shaped horns carry bold transverse knots on the front surface. In the present species the horns are characterised by their large size and well-developed front surface; the second distinctive feature being the long beard of the males. Height at shoulder, from 40 to 42 inches. Weight, about 206 lbs.; when cleaned, from 128 to 153 lbs.

Distribution.—The mountains of Central Asia, from near Lhasa, the Tien Shan, and the Altai to the Himalaya (exclusive of the Pir Panjal), and from the neighbourhood of Herat to Kumaon and adjacent districts as far east as the source of the Ganges. Several local races of this species are recognised; the typical race (*C. sibirica typica*) of the Sayansk range, the Irtish race (*C. s. altaica*), the Tien Shan race (*C. s. almasyi*), the Gilgit race (*C. s. pedri*), the Katutay ibex (*C. s. lydekkeri*), the Balti ibex (*C. s. wardi*), the Himalayan ibex (*C. s. sacin*) from the mountains to the northward of Kashmir, and the Lahul (*C. s. filippii*).

TIEN SHAN RACE.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
58	11 $\frac{1}{4}$	44 $\frac{1}{2}$	Tien Shan . . .	Col. H. Appleton.
57 $\frac{3}{4}$	11	40 $\frac{1}{2}$	Do.	C. H. Bury.
57 $\frac{1}{2}$	10 $\frac{3}{4}$	24	Do.	H. M. von Archer.
57 $\frac{1}{2}$	11 $\frac{3}{4}$	28	Do.	Capt. G. R. H. Cheape.
57 $\frac{3}{8}$	11	30	Do.	A. Bayley-Worthington.
56 $\frac{3}{4}$	11 $\frac{1}{2}$	36 $\frac{1}{2}$	Do.	Lord Elphinstone.
56 $\frac{3}{4}$	10 $\frac{1}{2}$	31	Do.	Capt. J. F. Turner.
56 $\frac{1}{4}$	11	40	Do.	R. F. Glyn.
56	10 $\frac{1}{4}$	21 $\frac{3}{4}$	Do.	P. F. Hadow.
54 $\frac{3}{4}$	11 $\frac{1}{4}$	29	Do.	P. B. Vander Byl.
54 $\frac{3}{4}$	11 $\frac{1}{4}$	30 $\frac{1}{4}$	Do.	Major A. D. Greenhill-Gardyne.
54 $\frac{1}{4}$	11 $\frac{1}{4}$	...	Do.	B. Chew.
¹ 54	10 $\frac{3}{4}$	45	Do.	His Majesty the King.
53 $\frac{3}{4}$	11 $\frac{1}{4}$	45	Do.	J. H. Miller.
53 $\frac{3}{4}$	10 $\frac{1}{2}$	33 $\frac{1}{2}$	Do.	Ford G. Barclay.
53 $\frac{3}{4}$	11 $\frac{3}{4}$	34	China	Major P. Hambro.
53 $\frac{1}{4}$	11 $\frac{1}{2}$	42	Tien Shan . . .	R. Hayne.
53 $\frac{1}{4}$	10 $\frac{3}{4}$	21 $\frac{3}{4}$	Do.	Col. C. B. Wood.
53 $\frac{1}{4}$	12 $\frac{1}{4}$	35	Do.	Capt. J. N. Price Wood.
53	12	35 $\frac{1}{2}$	Do.	St. George Littledale.
52 $\frac{1}{2}$	12 $\frac{1}{4}$	26	Do.	P. Church.
52 $\frac{1}{4}$	11 $\frac{1}{2}$	22 $\frac{1}{2}$	Do.	T. P. Miller.
52	11 $\frac{1}{4}$	40 $\frac{3}{4}$	Do.	W. R. Read.
51 $\frac{3}{4}$	12 $\frac{1}{2}$	48	Do.	Capt. H. Whitaker.
51 $\frac{3}{4}$	12	34	Do.	Capt. the Hon. G. H. Douglas-Pennant.
50 $\frac{3}{8}$	11 $\frac{1}{4}$	35 $\frac{1}{2}$	Do.	British Museum (St. George Littledale).
50 $\frac{1}{4}$	10 $\frac{3}{4}$	31	Do.	C. C. Tower.
50	11	30 $\frac{1}{2}$	Do.	Marquis of Lansdowne.
50	11 $\frac{1}{4}$	24 $\frac{1}{2}$	Do.	Col. A. H. Hussey.
50	12	19 $\frac{3}{4}$	Do.	J. V. Phelps.
48 $\frac{1}{2}$	10 $\frac{1}{4}$	38 $\frac{1}{2}$	Altai	Col. C. B. Wood.
46 $\frac{1}{2}$	12	20 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.

¹ Shot by St. George Littledale.

LADAKI, BALTI, and KASHMIRI RACES.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
55	11½	35	Gilgit . . .	Lieut.-Col. B. E. M. Gurdon.
53¼	10½	20¼	Do. . . .	Col. J. Biddulph.
51¼	9½	34½	?	Lieut.-Col. J. Manners Smith.
49¾	10	21½	Chitral . . .	British Museum (Lieut.-Col. B. E. M. Gurdon).
49	10¼	9½	Skardo . . .	Major George Douglas.
48¾	10½	33	Baltistan . . .	H. H. Cripps.
48½	9¾	30½	Nubra, north of Leh .	British Museum (Hume Collection).
48½	9	22¾	Kashmir . . .	Col. G. D. F. Sullivan.
48½	10½	28	Do.	Capt. S. H. Charrington.
48¼	10¼	29¾	Ladak	Capt. R. H. R. Brocklebank.
47½	8¾	29¾	Chitral	M. Ostreham.
47	10¼	35	Baltistan . . .	Lady Constance Stewart-Richardson.
46¾	10	18½	?	E. R. Harris.
46¾	9¼	...	Kashmir . . .	Lieut.-Col. E. B. Cook.
46¾	9¾	25¼	Do.	P. Radclyffe.
46¾	9¾	22½	Do.	Lieut.-Col. W. Goring.
46½	10	25½	Kashmir . . .	G. A. Lloyd.
46½	10½	23½	?	Major J. S. Bogle.
46¼	10½	12½	?	Capt. E. T. W. McCausland.
46	10½	17¾	Baltistan . . .	Capt. R. S. H. Walpole.
46	10¼	21½	?	Major C. E. Palmer.
46	10¾	12¼	Ladak	P. F. Hadow.
46	10	24½	?	Capt. H. G. Stafford.
46	11	14½	Kashmir . . .	Capt. H. Meynell.
46	10¾	25¼	Do.	J. Platt.
45¾	10¼	...	Do.	Capt. H. Nicolay.
45¾	11	13½	Do.	F. H. Norton.
45¾	9	19	Baltistan . . .	Hon. A. G. Brand.
45¾	10½	18	?	J. V. E. Lees.
45½	9½	33¾	Pamir	Major J. B. Mackintosh.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
45½	9¾	19½	Pamir . . .	Lieut.-Col. R. L. Kennion.
45½	9¾	19½	Baltistan . . .	T. R. Ubsdell.
45½	10½	27	Do. . . .	His Majesty the King.
45½	10	18½	?	Capt. A. Courage.
45	9	12½	Baltistan . . .	Major C. B. Vandeleur.

OWNER'S MEASUREMENTS.

56½	11½	37¼	Tien Shan . . .	Lieut.-Col. H. M. Biddulph.
55	...	...	Tagdumbash . . .	Col. A. E. Ward.
¹ 54¾	10¼	25	Gilgit . . .	Mess of the Queen's Own Corps of Guides.
52½	11	11¾	Hunza . . .	Capt. H. R. P. Dickson.
52	10	...	Baltistan . . .	H.H. the Maharaja of Travancore.
51½	...	...	Kashmir . . .	Martyn Kennard.
51	...	...	Do. . . .	Col. A. E. Ward.
51	10¼	29	Gilgit . . .	F. M. Hodgkins.
45¼	9¾	24¾	Baltistan . . .	Mess of the Queen's Own Corps of Guides.
45	10	20¼	Gilgit . . .	Col. J. Biddulph.

¹ Picked up by Maj.-Gen. R. E. Hutchinson.

The IBEX or STEINBOCK (*Capra ibex*).

This species, which only survives in a protected state, differs from the Asiatic ibex by the much smaller size of the beard of the male, as well as by a slight variation in the horns; the height at the shoulder reaching to about 34 inches. Weight, from 85 to 106 lbs. clean. Formerly distributed throughout the higher Alps of Switzerland, Savoy, and the Tyrol, but now surviving only in a few valleys on the Italian side of Monte Rosa. Most of the few specimens now obtainable are comparatively small, and good horns are very scarce in English collections.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
34½	9¾	26¼	Styria . . .	Sir Edmund G. Loder, Bart.
29	8¾	10¼	Valley of Aosta . . .	Rev. J. M. Gordon.
28¾	8¾	17½	Do. . . .	J. Hamilton Leigh.
28	9¼	17¼	Do. . . .	Hon. Walter Rothschild.

Length on front curve.	Circumference.	Tip to Tip.	Weight.	Locality.	Owner.
27½	9¼	11½	...	Valley of Aosta	Royal Scottish Museum.
26¾	8¾	22½	...	Do.	British Museum.

OWNER'S MEASUREMENTS.

44⅝	10¼	...	170 lbs.	Valley of Aosta	H.M. the King of Italy.
39¾	10¾	40¼	...	?	Imperial Museum, Vienna.
38⅝	...	...	...	Valley of Aosta	H.M. the King of Italy.
30	9	21	...	?	Dublin Museum.
28¼	9¾	18	...	Valley of Aosta	C. H. Wilczek.



Ibex Head, in the possession of H.M. the King of Italy.



Skull and Horns of Abyssinian Ibex. Shot by Major P. H. G. Powell-Cotton.

The WALA or ABYSSINIAN IBEX (*Capra vali*).

This ibex, the wala of the natives of Simien, differs from the Nubian ibex by its stouter build, shorter beard, and larger and more massive horns, on which the knots are but slightly prominent, as well as by its darker colour and superior size. The forehead of the skull has a conspicuous bony prominence. Although described by Rüppell in 1835, this ibex was practically unknown till 1901, when a fine series of specimens was brought home by Major Powell-Cotton. Height at shoulder, about 40 inches. Weight, about 260 lbs.

Distribution.—The mountains of Simien, Abyssinia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
43 $\frac{3}{8}$	11 $\frac{1}{4}$	27	Abyssinia	British Museum (Major P. H. G. Powell-Cotton).
43 $\frac{5}{8}$	11 $\frac{1}{2}$	12 $\frac{1}{2}$	Do.	Major P. H. G. Powell-Cotton.
43	10 $\frac{1}{2}$	23	Do.	Admiral the Hon. Sir Hedworth Meux.
¹ 42 $\frac{3}{4}$	10 $\frac{1}{4}$	18 $\frac{3}{4}$	Do.	Her Majesty Queen Alexandra.
41 $\frac{3}{4}$	11	16 $\frac{3}{4}$	Do.	Major P. H. G. Powell-Cotton.
40 $\frac{5}{8}$	11	...	Do.	Hon. Walter Rothschild.
♀ 13 $\frac{1}{4}$	4 $\frac{1}{4}$	8 $\frac{5}{8}$	Do.	Major P. H. G. Powell-Cotton.

¹ Presented by the late Ras Makunnan, 1902.



Head of Nubian Ibex.
Shot in the Red Sea Province by Mr. J. H. Miller.

The BEDEN or NUBIAN IBEX (*Capra nubiana*).

This species may be easily distinguished from both the Asiatic and the Alpine ibex by the form of the horns, which are very long, rather slender, and with the outer front angle much bevelled off, so that the proper front surface is very narrow, and its transverse knots proportionately short. Three races are recognised, namely, the typical Nubian form, *C. n. typica*, the S. Arabian *C. n. mengesi*, and the Sinaitic *C. n. sinaitica*. In the form of its horns the latter approximates to the wild goat.

Distribution.—The mountains of Southern Arabia, Palestine, the Sinaitic Peninsula, Upper Egypt, and probably also those of Morocco and the interior of Senegambia. Arabian name, *beden*.

A.—NUBIAN RACE (*C. nubiana typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
46 $\frac{1}{2}$	8	...	North Africa . . .	British Museum.
45 $\frac{1}{2}$	8	32 $\frac{1}{2}$	Do. . . .	H. H. Prince Omar Toussoun.
45	7 $\frac{3}{4}$	16 $\frac{5}{8}$	Red Sea Province . . .	G. E. Burnett-Stuart.
44 $\frac{1}{2}$	8	16 $\frac{1}{2}$	Do. . . .	J. H. Miller. (See illustration, p. 373.)
43 $\frac{3}{4}$	9 $\frac{1}{4}$	6 $\frac{3}{4}$	North Africa	Percy C. Madeira.
43 $\frac{1}{4}$	7 $\frac{1}{4}$	22 $\frac{1}{4}$	Do. . . .	Lieut.-Col. H. R. Lloyd.
43	8	19	Near Suakin	A. L. Butler.
42	7 $\frac{1}{2}$	20	Do. . . .	Hon. Walter Rothschild.
41 $\frac{3}{4}$	7 $\frac{5}{8}$	17 $\frac{5}{8}$	North Africa	Major W. H. Besant.
40 $\frac{3}{4}$	7 $\frac{3}{4}$	20 $\frac{3}{4}$	Do. . . .	W. H. Watney.
40 $\frac{1}{4}$	7 $\frac{1}{2}$	24	Do. . . .	A. Fowler.
40 $\frac{1}{4}$	7 $\frac{1}{2}$	18 $\frac{3}{4}$	Do. . . .	H. Boughton Leigh.
40	8	19 $\frac{1}{2}$	Do. . . .	Major H. H. S. Morant.
38 $\frac{7}{8}$	7 $\frac{1}{2}$	12 $\frac{1}{2}$	Upper Egypt	Sir Edmund G. Loder, Bart.
38 $\frac{1}{2}$	7 $\frac{1}{2}$	14 $\frac{1}{4}$	North Africa	Prince E. Demidoff.
38 $\frac{1}{2}$	8 $\frac{3}{4}$	10 $\frac{1}{4}$	Do. . . .	Lord Villiers.
38 $\frac{1}{2}$	7	21 $\frac{3}{4}$	Suakin	L. C. G. Clarke.
38 $\frac{1}{2}$	7 $\frac{3}{4}$	23	Do. . . .	P. B. Vander Byl.

OWNER'S MEASUREMENTS.

51	8 $\frac{5}{8}$	39 $\frac{1}{2}$	Upper Egypt	The late Prince Henry of Liechtenstein.
43 $\frac{3}{4}$	...	...	Do. . . .	C. S. Mann.



Skull and Horns of Arabian Ibex. Shot by Major W. Merewether.

B. and *C.*—**S. ARABIAN and SINAITIC RACES** (*C. nubiana mengesi* and *sinaitica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
50	9	...	Southern Arabia . . .	Capt. J. T. Brinkley.
42	7 $\frac{1}{4}$	...	Arabia	East India Club.
41 $\frac{1}{2}$	8	16 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
39 $\frac{1}{2}$	8 $\frac{7}{8}$	19 $\frac{1}{2}$	South-East Arabia . . .	Hon. Walter Rothschild.
38 $\frac{1}{2}$	7 $\frac{1}{2}$	12	Sinai	R. Hayne.
37 $\frac{3}{4}$	7	13 $\frac{1}{2}$	Do.	Capt. C. P. Heywood.
37 $\frac{1}{2}$	6 $\frac{1}{2}$	12	Do.	P. Swan.
36 $\frac{3}{4}$	7 $\frac{1}{2}$	9 $\frac{1}{4}$	Do.	W. H. Tottie.
36 $\frac{3}{4}$	7	10	Do.	P. A. Kennedy.
♀ 10 $\frac{2}{3}$	3 $\frac{1}{4}$	2 $\frac{1}{2}$	Do.	W. E. Pease.

OWNER'S MEASUREMENTS.

49 $\frac{1}{2}$	8 $\frac{1}{2}$	12	Southern Arabia . . .	Major W. Merewether. (See illustration.)
39	...	...	Sinai	Capt. L. Buxton.



Skull and Horns of Sind Wild Goat. From a specimen presented by the late Mr. A. O. Hume to the British Museum.

The PASANG or WILD GOAT (*Capra hircus*).

The horns of the wild goat (*C. hircus agagrus*) of the Caucasus and Persia—which is the ancestral form of the domesticated goat of Europe and Asia (*C. hircus*)—differ from those of the various species of ibex by having no distinct front surface, but merely a sharp notched keel, representing the inner front angle of the ibex horn. In old males the beard is very long. The general colour of the upper-parts is brownish grey in winter and reddish brown in summer, while the under-parts are white, and there are blackish brown and white markings on the body, face, and limbs. Height at shoulder reaching to 37 inches.

The so-called Sind ibex (*C. hircus blythi*) forms a second local race of the species, inhabiting Sind and parts of Baluchistan, where it probably passes imperceptibly into the Caucasian race. It is distinguished mainly by a slight difference in the form of the horns. Other races are found in some of the islands of the Ægean Archipelago, where they appear to have been more or less crossed with domesticated breeds.

Distribution.—The islands of South-Eastern Europe, and the mountains of South-Eastern Europe and South-Western Asia from the Caucasus through Asia Minor and Persia to the confines of Baluchistan and Sind. Persian name, *pasang* (rock-footed).

A.—CAUCASIAN RACE (*C. hircus ægagrus*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
55½	...	24	Persia . . .	Carl Hagenbeck.
51¼	9	7	Russian Turkestan .	The late Prince P. Demidoff.
48¼	8¾	13⅞	Caucasus . . .	British Museum.
47¼	7¾	8¾	Persia . . .	Lieut.-Col. R. L. Kennion.
46½	8⅞	18⅞	Asia Minor . . .	F. C. Selous.
46¼	9½	14¼	Do. . . .	T. Bowen Rees.
45½	8¾	5	Do. . . .	R. Graham.
45	7¼	...	British Mekran . .	Capt. A. W. White.
44½	8⅞	21⅞	Caucasus . . .	British Museum.
43½	10	12½	Persia . . .	Hon. W. Erskine.
43	9	15¾	Taurus Range . . .	Sir Edmund G. Loder, Bart.
43	8½	14½	N. Persia . . .	Capt. C. T. Daukes.
43	8⅞	22⅞	? . . .	J. Carr Saunders.

OWNER'S MEASUREMENTS.

53	10	46	Asia Minor . . .	B. Hodder.
50¾	9¼	14	Taurus Range . . .	Count C. Deym.
47½	9¼	...	Cilician Taurus . .	C. G. Danford.
45¾	8¾	9¾	Daghestan . . .	E. N. Buxton.
45¼	9¼	21	Damascus . . .	Dr. Albert von Stephani.
43½	10	21½	Asia Minor . . .	D. Forbes.

B.—SIND RACE (*C. hircus blythi*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
52¾	7⅞	8¼	Sind	British Museum (Hume Collection). (Shot by Col. F. Marston.) See illustration.
49½	7¾	11	Do. . . .	Capt. L. P. Haviland.
-48	8	20½	Do. . . .	J. D. Inverarity.
46¾	7⅞	14	Do. . . .	Sir Edmund G. Loder, Bart.
46	7⅞	11	Do. . . .	Major C. S. Cumberland.

- Owner's measurements.



Head of Domesticated Goat from Daghestan. Sir Edmund G. Loder's specimen.

DOMESTICATED GOATS.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
52½	10½	40½	Daghestan . . .	Sir Edmund G. Loder, Bart.
44½	6	29½	Angora . . .	Do.
40½	9½	...	Daghestan . . .	Do.
37½	7½	32½	Scotland . . .	Col. W. Hall Walker.
37	7½	35	Meoble . . .	Walter Jones.
35½	7½	38½	?	B. de Bertodano.
34½	7½	38½	Scotland . . .	Duke of Bedford.
34	8½	32½	Do. . . .	F. C. Selous.
33½	8	26½	Meoble . . .	Hon. O. C. Molyneux.

- Owner's measurements.



Skull and Horns of Spanish Ibex. H.M. The King of Spain's record specimen.

The SPANISH IBEX (*Capra pyrenaica*).

Although commonly designated an ibex, the Spanish wild goat has horns more like those of one of the Caucasian ture, and is therefore better regarded as a species of that group. The horns, which have a sharp inner edge, are twisted in a very open semi-spiral, with the tips generally turned outwards, and are quite unlike those of the true ibex. In having dark and light markings on the limbs the species is, however, much more like the wild goat than either of the Caucasian ture. The beard of the males varies greatly in size according to age and season. Height at shoulder, from about 27 to 32 inches; weight, when clean, about 10 stone.

Distribution.—The Pyrenees and the high ranges of Central Spain, Andalucia, and Portugal. The typical race of the species inhabits the Pyrenees; the ibex of the Serra do Gerez, Portugal, said to have less spreading horns, is separated as *C. pyrenaica lusitanica*; those of the Sierra Nevada form a third race (*C. p. hispanica*), characterised by the slight development of the black markings; and a fourth race (*C. p. victoriae*), intermediate between the typical race and *hispanica*, is found on the Sierra de Grados.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
33½	9½	26½	Sierra de Gredos	H.M. the King of Spain.
31	8¾	...	Pyrenees . . .	Sir Victor Brooke's Collection.
30½	9	26	Sierra de Gredos	(Marquis de Viana. Marquis de Villaviciosa.
29¼	9½	23¼	Sierra Nevada . . .	Abel Chapman.
28	9⅝	23⅝	Spain . . .	British Museum.
27¾	9	25	Central Spain . . .	Sir Edmund G. Loder, Bart.
25⅝	8½	16⅝	Spain . . .	Hon. Walter Rothschild.
25½	7¾	10½	Nr. Cordova . . .	Lord Hindlip.
24½	10	14	Val d'Arras . . .	E. N. Buxton.
23⅝	8	16	Southern Spain . . .	Marques Marzales.
22¾	9½	18¾	Val d'Arras . . .	E. N. Buxton.
22⅝	10	15 ⁹ / ₁₆	Sierra de Gredos . . .	Duke de Turancon.
♀ 9½	5⅝	6¼	Val d'Arras . . .	E. N. Buxton.

OWNER'S MEASUREMENTS.

30¼	9½	23½	Central Spain . . .	Abel Chapman and W. J. Buck.
29¾	8¼	23¼	Almeira . . .	H. Brinsley Brooke.
29⅝	9⅞	20⅞	Sierra de Gredos . . .	Natural History Museum, Madrid.
29½	8¼	20½	Sierra Nevada . . .	Do.
28¾	10½	28⅞	?	Imperial Museum, Vienna.
28¼	9¾	24½	Sierra de Gredos . . .	Marques de la Torreccilla.
27⅝	9⅝	20½	Do.	Marques de Viana.
27 ⁹ / ₁₆	10¼	21 ⁷ / ₁₆	Do.	H.M. the King of Spain.
27½	8½	20½	Do.	Jose del Prado.
27	10¼	20½	Do.	H.M. the King of Spain.
25½	9½	13	Spain . . .	W. J. Buck.
♀ 10¾	5⅝	7½	Val d'Arras . . .	A. E. Leatham.



Western Tur or Caucasian Ibex. Shot by Mr. P. B. Vander Byl.

WESTERN TUR or CAUCASIAN IBEX (*Capra severtzowi*).

Of the two peculiar kinds of wild goats inhabiting the Caucasus and locally known as ture, the present species is easily recognised by the approximation in the form of its horns to those of true ibex, and the uniform chestnut-brown colour of the male in the summer coat; the chin, beard, and lower part of the legs being dark brown. In adults the beard, when fully developed, is long, straight, and narrow. Height at shoulder, about 42 inches.

Distribution.—The western half of the main chain of the Caucasus. The typical race (*C. severtzowi typica*) inhabits the mountains west of Elbruz. It is the larger, and has the knots on the horns moderately developed. Still farther west, in the North-western Caucasus, although somewhat overlapping the range of the first, comes Dinnik's race (*C. s. dinniki*), the range of which to the west, like that of the species, is limited by Mount Shungus.

A.—TYPICAL RACE (*C. severtzowi typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40	$13\frac{2}{5}$	$14\frac{1}{2}$	W. Caucasus	St. George Littledale.
37	$11\frac{1}{2}$	$26\frac{1}{2}$	Do.	Do.
$34\frac{3}{4}$	11	16	Do.	British Museum.

B.—NORTH-WESTERN RACE (*C. severtzowi dinniki*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$34\frac{1}{2}$	12	22	Kuban, N.W. Caucasus . . .	Prince E. Demidoff.
$33\frac{1}{4}$	$12\frac{1}{4}$	...	Do.	P. B. Vander Byl.
$32\frac{1}{2}$	$11\frac{3}{4}$	$22\frac{3}{4}$	Do.	Do.
$32\frac{1}{4}$	$11\frac{1}{2}$	$25\frac{1}{4}$	Do.	Prince E. Demidoff.
$30\frac{5}{8}$	$11\frac{3}{8}$	$16\frac{3}{8}$	Do.	Sir Edmund G. Loder, Bart.
30	$11\frac{1}{2}$	$19\frac{1}{2}$	Do.	Hon. Walter Rothschild.



Head of Pallas's Eastern Tur. Shot by Prince E. Demidoff.

EASTERN TUR or CAUCASIAN BHARAL (*Capra caucasica*).

Distinctly different from the last is the wild goat commonly designated by sportsmen the "Caucasian bharal"; this name being derived from the resemblance of its horns to those of the true Himalayan bharal. In spite of this point of resemblance, its affinities are, however, evidently with the goats, although it indicates a step from the more typical members of that group in the direction of the bharal. Both races are characterised by the width and shortness of the beard, which forms a curling fringe on each side of the chin. The general colour of the coat in the bharal-like race is uniform dull brown, except on the chin, the tip of the tail, and portions of the legs, where it is blackish brown. Height at shoulder, about 3 feet.

Although generally classed as typifying a species, Pallas's tur is best regarded as a race of the true *C. caucasica*, in which the horns are somewhat less bharal-like, and may show small knots in front.

Distribution.—The Central Caucasus and the Eastern Caucasus, from Kasbek to Daghestan.

A.—TYPICAL RACE (*C. caucasica typica*).

Distribution.—Central Caucasus to east of Elbruz.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
29½	12¼	?	Central Caucasus	Specimen described by Dinnik.

The following specimen, which has been regarded as a hybrid, is intermediate in character between the above and *C. severtzowi*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22 $\frac{3}{4}$	10 $\frac{7}{8}$	22 $\frac{1}{4}$	Elbruz District . . .	St. George Littledale.

B.—PALLAS'S RACE (*C. caucasica cylindricornis*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
46	13 $\frac{3}{4}$	8 $\frac{3}{4}$	Eastern Caucasus . . .	Prince E. Demidoff.
44 $\frac{3}{4}$	13 $\frac{1}{2}$	10	Do. . . .	The late Prince P. Demidoff.
43	14	17 $\frac{1}{2}$	Do. . . .	British Museum (the late Prince P. Demidoff).
40 $\frac{1}{2}$	12 $\frac{1}{4}$	15 $\frac{1}{2}$	Do. . . .	P. B. Vander Byl.
40	12 $\frac{3}{8}$	10	Do. . . .	P. H. Thomas.
39	13 $\frac{1}{10}$	19	Do. . . .	St. George Littledale.
38 $\frac{1}{2}$	13	17	Do. . . .	Do.
38 $\frac{1}{4}$	12 $\frac{1}{2}$	...	Eastern Caucasus . . .	Hon. Walter Rothschild.
36 $\frac{3}{4}$	13 $\frac{1}{4}$	16 $\frac{3}{4}$	Do. . . .	Count H. de Ganay.
36	13	...	Daghestan	J. D. Cobbold.
35 $\frac{1}{4}$	12	18 $\frac{1}{4}$	Eastern Caucasus . . .	Rhys Williams.
35	12 $\frac{3}{4}$	20 $\frac{1}{4}$	Do. . . .	Mervyn G. Williams.
35	12 $\frac{1}{2}$	16	Do. . . .	S. Whitehouse.
34 $\frac{3}{4}$	13 $\frac{3}{4}$	24 $\frac{1}{4}$	Do. . . .	Duke of Alba.
34 $\frac{1}{2}$	10 $\frac{7}{8}$	13 $\frac{1}{2}$	Do. . . .	Major Talbot.
33 $\frac{3}{4}$	13	17 $\frac{1}{4}$	Do. . . .	Sir Edmund G. Loder, Bart.
32	13	19	Do. . . .	Berthold Smith.
32	11 $\frac{1}{2}$	22	Do. . . .	Sutton Timmis.
31 $\frac{1}{2}$	12	7 $\frac{3}{4}$	Do. . . .	F. G. Barclay.
31	11	28	Do. . . .	Capt. H. H. P. Deasy.



Skull and Horns of Bharal.

The BHARAL or BLUE SHEEP (*Pseudois nahura*).

Ta-sang-yang, Chinese.

With horns not unlike those of Pallas's tur, the bharal or blue sheep of Tibet differs from the goats by the absence of a beard and a strong odour in the males, and on account of these and other points of difference from the goats is placed next the sheep, of which group it forms a very aberrant member. The most distinctive external features are the comparatively smooth and olive-coloured horns, which curve at first outwards and then backwards from the sides of the head, and the bluish grey colour of the thick coat of the back and sides, the flanks, under-parts, and legs being handsomely marked with black and white. Height at shoulder, about 36 inches; weight, about 130 lbs. In the complete absence of glands on the face, and the rudimentary condition of those between the hoofs, the bharal differs from typical sheep and approximates to goats.

Distribution.—From Hunza, and Shigar, in Baltistan, and near Sanju, south-east of Yarkand, to Sze-chuan and Shen-si, and from the main axis of the Himalaya, or locally some distance south of the same, to the Kuenlun and Altyn Tag; in summer usually met with at elevations between 14,000 and 16,000 feet, and apparently never found below about 10,000 feet.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
31½	13½	22½	Ladak . . .	J. Campbell of Kilberry.
30⅞	12¾	21⅞	Garhwal . . .	British Museum (Hume Collection).
30½	10	18½	?	Major F. G. T. Deshon (King Edward's Hospital for Officers).
30	13¼	25¼	Ladak . . .	Hon. Walter Rothschild.
30	11	24	Hanle, Spiti . . .	Major B. L. Carew.
29½	11⅝	25½	?	H.R.H. the Duke of Saxe-Coburg and Gotha.
29½	12	26½	Northern Sikhim . . .	Major A. Pearse.
28⅝	10½	21½	?	Major Lord Charles M. Nairne.
28⅝	12½	22	Chang-chenmo . . .	Capt. B. H. Shaw-Stewart.
28½	11½	16¼	?	Major C. A. Vivian.
28½	12¼	26½	Hanle . . .	Major F. W. H. Walshe.
28	11	20¼	?	British Museum (Hume Collection).
28	11	16	Hanle . . .	Arnold Pike.
27⅝	10½	23½	?	R. H. Edmondson.
27⅝	10¼	10	Ladak . . .	Capt. G. Campbell.
27½	13	34	Kumaon . . .	E. R. Neave.
27½	10⅝	16⅝	?	P. Radclyffe.
27¼	11	21½	Ladak . . .	St. George Littledale.
27¼	12	25¼	Do. . . .	Col. H. Appleton.
27	12¼	22½	Do. . . .	Capt. R. S. H. Walpole.
27	11¼	25⅝	Do. . . .	Capt. A. E. Cathcart.
27	11½	28	Tibet	Major C. S. Cumberland.
26⅝	10½	16¼	Ladak	Capt. W. F. Reichwald.

OWNER'S MEASUREMENTS.

33¼	...	...	Shot on Lhasa Expedition, 1904.	H. H. Hayden.
32½	...	12	Milam Pass . . .	Major W. de L. Williams.
¹ 30½	11	15½	Ladak	Major P. H. G. Powell-Cotton.
30	...	...	Baba Pass . . .	Major R. W. Johnston.
29	12	...	?	Lieut.-Col. A. E. Ward.
28½	11	9	Ladak	R. E. Mess, Roorkee.
28½	10½	...	?	Indian Museum.

Chinese Specimens.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-26½	12	29	Ta-chi-lu	M. Mitchell.
24¼	11½	31¼	Kan-su, Tibet border .	K. K. Horn.
18⅝	11	27⅝	S.-W. border of Kan-su	H. F. Wallace.
17½	10¼	24	Do.	G. Fenwick-Owen.

- Owner's measurements.

Picked up.



Head of Arui.

The ARUI, UDAD, or BARBARY SHEEP (*Ammotragus lervia*).

The only wild sheep found throughout the continent of Africa is the arui or fechtal of the Arabs, the udad or Barbary sheep of naturalists; a species with horns not very unlike those of the bharal, and also lacking glands on the face, but readily distinguished by its uniformly tawny colour, the fringe of long hair depending from the throat, chest, and the upper portion of the fore-legs, and the unusual length of the tail, which exceeds that of all other wild sheep. In the length of this appendage the arui approaches many domesticated sheep, of which, however, it is not the ancestor. Height at shoulder, about 3 feet 3 inches. Three races are recognised.

Distribution.—The mountains of Northern and North-Eastern Africa, from Morocco to Egypt, and thence southwards nearly to Khartum, in about lat. 16° N.; also the desert south of Biskra.

RECORDS OF BIG GAME

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
33 $\frac{1}{4}$	13 $\frac{1}{4}$	12 $\frac{3}{4}$	Algeria . . .	Sir Abe Bailey.
29 $\frac{1}{8}$	12 $\frac{1}{2}$	19	Do. . . .	V. Cholmondeley.
28 $\frac{3}{4}$	12	14 $\frac{3}{4}$	Do. . . .	R. A. Cooper.
28 $\frac{1}{2}$	11 $\frac{1}{2}$	18	Do. . . .	British Museum (Hon. John Ward).
28 $\frac{1}{2}$	11 $\frac{5}{8}$	18 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
27 $\frac{3}{4}$	16	30 $\frac{1}{4}$	Sudan . . .	D. P. MacGillivray.
27 $\frac{1}{2}$	12	21	Tunisia . . .	P. H. Thomas.
26 $\frac{1}{2}$	11	19	Algeria . . .	W. H. Lindsay.
26	11 $\frac{1}{4}$	16 $\frac{1}{4}$	Do. . . .	W. H. Edgar.
26	13	24	Sudan . . .	A. L. Butler.
25 $\frac{1}{2}$	11 $\frac{1}{2}$	17 $\frac{1}{2}$	Algeria . . .	Hon. John Ward.
25 $\frac{1}{2}$	11 $\frac{1}{2}$	17	Do. . . .	F. de Murietta.
25 $\frac{1}{2}$	10 $\frac{5}{8}$	16	Do. . . .	Col. G. J. Cuthbert.
24 $\frac{3}{4}$	10 $\frac{7}{8}$	16	Tunisia . . .	Capt. W. W. Pitt-Taylor.
24 $\frac{3}{4}$	11 $\frac{1}{2}$	17 $\frac{1}{2}$	Algeria . . .	E. Richardson Cox.
24 $\frac{3}{4}$	11 $\frac{5}{8}$	18 $\frac{3}{4}$	Do. . . .	H. G. Watson.
24 $\frac{1}{4}$	12 $\frac{1}{4}$	17 $\frac{1}{4}$	Dongola . . .	O. Atkey.
23 $\frac{1}{4}$	10 $\frac{1}{2}$	17	Tunis . . .	C. Trevor Wingfield.
22 $\frac{3}{4}$	10 $\frac{1}{4}$	22 $\frac{1}{4}$	Algeria . . .	F. M. Bailey.
22 $\frac{5}{8}$	11 $\frac{1}{4}$	14 $\frac{1}{4}$	Tunisia . . .	Capt. J. B. Jenkinson.
22 $\frac{1}{2}$	11	14 $\frac{1}{4}$	Algeria . . .	Hon. Walter Rothschild.
22 $\frac{1}{2}$	12	16 $\frac{3}{4}$	Dongola . . .	Capt. W. H. Wilkin.
♀ 22	11 $\frac{3}{4}$	15 $\frac{1}{4}$	Dongola . . .	O. Atkey.
22	11 $\frac{1}{4}$	16	Red Sea Littoral . . .	R. Wavell-Paxton.
21 $\frac{1}{4}$	10 $\frac{1}{4}$	18 $\frac{1}{2}$	Do. . . .	Capt. S. S. Flower.
21 $\frac{1}{4}$	10 $\frac{3}{4}$	17 $\frac{1}{2}$	Do. . . .	Capt. the Hon. G. H. Douglas-Pennant.
21	10 $\frac{1}{4}$	15 $\frac{1}{8}$	Do. . . .	G. C. Whitaker.
21	11 $\frac{1}{4}$	18 $\frac{1}{2}$	W. of Dongola . . .	Earl of Kingston.

OWNER'S MEASUREMENTS.

28	11 $\frac{1}{2}$	16 $\frac{1}{2}$	S. Tunisia . . .	J. I. S. Whitaker.
27 $\frac{3}{4}$	11 $\frac{1}{4}$	14 $\frac{9}{16}$	Algeria . . .	Viscount Edmond de Poncins.
27 $\frac{1}{2}$	12 $\frac{5}{8}$	13 $\frac{1}{8}$	?	Imperial Museum, Vienna.
♀ 20 $\frac{1}{4}$	10	16	Algeria . . .	A. E. Pease.



Skull and Horns of Rocky Mountain Bighorn. :

The BIGHORN SHEEP (*Ovis canadensis*).

The bighorn of the American continent, inclusive of its local races, is a large sheep, distinguished from the Asiatic argalis, among other features, by the comparative smoothness of the horns, in which the outer front angle is prominent and the inner one rounded off, and also by the smaller size of the face-glands. There is a well-marked whitish patch on the rump, but the amount of white on the under-parts and legs shows considerable local variation. In the typical Rocky Mountain race (*O. canadensis typica*) the ears are long and pointed, with short hair, and the horns, which are very heavy, diverge but little outwards, and generally have the tips broken. The Californian *O. canadensis nelsoni* is a paler southern race. In *O. canadensis stonei* of the North-West Territories the colour of the back is very dark, and the white on the hind part of the belly and legs sharply defined. Both in this race and the white *O. canadensis dalli* of Alaska the horns are lighter, more divergent, and more sharply pointed, while the ears tend to become shorter, blunter, and more hairy. The grey *O. c. fannini* tends to connect *stonei* with *dalli*, and as a matter of fact all three intergrade. Height at shoulder, about 3 feet 2 inches. Weight, about 350 lbs. Numerous other American races have been named.

The horns of the ewes are very small in comparison with those of the rams, seldom measuring more than 15 inches on the curve from base

to tip. Large male horns are now difficult to obtain, and of late years it is seldom that those of fresh-killed specimens are seen exceeding 38 inches on the curve from tip to tip.

Distribution.—The range of the American representatives of the bighorn extends from the Rocky Mountains southwards to Sonora, Northern Mexico, and California, and northwards to Alaska and the shores of Bering Sea. On the Asiatic side of Bering Strait the species is represented by two, or perhaps three, races nearly allied to the northern New World forms.

A.—ROCKY MOUNTAIN BIGHORN (*O. canadensis typica*).

Specimens referable to some of the allied American races are included in this list.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
42	16	...	Wyoming . . .	T. W. H. Clarke.
41	17	14	Alberta . . .	G. L. Harrison.
40 $\frac{3}{4}$	16 $\frac{1}{2}$	...	Yellowstone . . .	British Museum.
40 $\frac{1}{4}$	15 $\frac{1}{4}$	20 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
40	15	21 $\frac{1}{2}$	British Columbia . . .	J. W. R. Young.
39 $\frac{5}{8}$	15 $\frac{3}{8}$	...	Colorado . . .	St. George Littledale.
39 $\frac{1}{2}$	16 $\frac{1}{2}$	24 $\frac{3}{4}$	Montana . . .	British Museum.
39 $\frac{1}{2}$	15 $\frac{1}{2}$	19	?	Sir Edmund G. Loder, Bart.
39 $\frac{1}{2}$	14	21 $\frac{1}{2}$	Mexico . . .	R. O. Crewe Read.
38 $\frac{3}{8}$	15 $\frac{1}{2}$	22	?	Gerald Buxton.
38 $\frac{1}{4}$	16 $\frac{3}{8}$	...	Bighorn Mountains . . .	Sir H. Seton-Karr.
38 $\frac{1}{4}$	15 $\frac{1}{4}$	19 $\frac{1}{4}$	Montana . . .	Edmund Littledale.
38 $\frac{1}{4}$	16	19	N.W. Territories . . .	S. Ratcliff.
38	17	...	Alberta, N.W.T. . . .	Arnold Pike.
38	18	21	?	Hon. Walter Rothschild.
37 $\frac{3}{4}$	15 $\frac{7}{8}$	23 $\frac{3}{8}$	Mexico . . .	J. A. H. Drought.
37 $\frac{1}{2}$	15 $\frac{1}{2}$	18	Do. . . .	I. N. Dracopoli.
37 $\frac{1}{2}$	16 $\frac{1}{4}$	32 $\frac{1}{2}$	Californian Baja, Mexico.	L. J. Cadbury.
37 $\frac{1}{2}$	16	15	British Columbia . . .	Col. A. Charlesworth.
37 $\frac{1}{4}$	15 $\frac{1}{2}$	16	Do. . . .	J. Turner-Turner.
37	16 $\frac{1}{4}$	...	Montana . . .	Major Maitland Kirwan.
37	16 $\frac{3}{8}$	16	British Columbia . . .	R. H. Venables Kyrke.
37	15 $\frac{1}{4}$	19 $\frac{1}{2}$	Wyoming . . .	H. A. C. Darley.
37	15 $\frac{1}{2}$	18 $\frac{1}{2}$	Do. . . .	Lord Rodney.
36 $\frac{3}{4}$	19	15	British Columbia . . .	C. H. Kennard.
36 $\frac{3}{4}$	15 $\frac{1}{4}$	22 $\frac{1}{2}$	Wyoming . . .	Earl of Lonsdale.
36 $\frac{3}{4}$	14 $\frac{1}{2}$	22 $\frac{1}{2}$	Do. . . .	A. Willis.
36 $\frac{1}{2}$	16	15	Do. . . .	W. F. Wailes-Fairbairn.
36 $\frac{1}{2}$	14	...	?	J. D. Cobbold.
36 $\frac{1}{2}$	15 $\frac{1}{4}$	19 $\frac{1}{2}$	?	Capt. C. R. E. Radclyffe.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
36 $\frac{1}{4}$	14 $\frac{3}{4}$	18	British Columbia . . .	Capt. W. A. Armitage.
36	15	9	Wyoming . . .	J. L. Scarlett.
36	14 $\frac{3}{4}$	16 $\frac{1}{2}$	Montana . . .	R. H. Sawyer.
36	14 $\frac{3}{4}$	16	Wyoming . . .	Major G. Dalrymple White.
35 $\frac{3}{4}$	15 $\frac{1}{4}$	20	Mexico . . .	R. F. Glyn.
35 $\frac{3}{4}$	13 $\frac{3}{4}$	17 $\frac{1}{2}$	British Columbia . . .	Hon. S. Tollemache.
35 $\frac{1}{2}$	16	21	Do. . .	T. P. Kempson.
35 $\frac{1}{4}$	15 $\frac{1}{4}$	18 $\frac{1}{2}$	Do. . .	Sir Peter Walker, Bart.
35 $\frac{1}{4}$	16 $\frac{1}{4}$	17	Do. . .	L. Ardern.
35 $\frac{1}{4}$	16	12	Do. . .	G. C. Whitaker.
♀ 10 $\frac{1}{2}$	5 $\frac{1}{2}$	13	Do. . .	A. Neilson.

OWNER'S MEASUREMENTS.

44 $\frac{1}{2}$	17	21	Near Golden, B.C. . .	Madison Grant.
43 $\frac{3}{8}$	16 $\frac{3}{4}$	18 $\frac{1}{2}$	British Columbia . . .	Wilson Potter.
43	18 $\frac{1}{4}$	...	?	H. E. Knobel.
42 $\frac{1}{2}$	16 $\frac{1}{4}$	25 $\frac{3}{4}$	Lower California . . .	American National Collection.
42 $\frac{1}{2}$	16 $\frac{3}{4}$	14 $\frac{1}{2}$	Do. . .	S. E. White.
42 $\frac{1}{2}$	16 $\frac{3}{4}$	25 $\frac{3}{4}$	Do. . .	G. H. Gould.
42	16	...	Do. . .	Capt. E. H. Funke.
...	17 $\frac{1}{4}$	...	Wyoming . . .	T. W. H. Clarke.
41 $\frac{3}{4}$	17 $\frac{1}{2}$	19	Rocky Mountains . . .	N. J. Dinnen.
41 $\frac{1}{2}$	15	...	Kootenay, B.C. . .	Provincial Museum, B.C.
40 $\frac{1}{2}$	16 $\frac{1}{2}$	17	S.E. of British Columbia .	American National Collection.
40	15 $\frac{1}{2}$	25 $\frac{1}{2}$	Lower California . . .	J. C. Phillips.
40	16 $\frac{1}{2}$	..	Do. . .	W. Kent.
39 $\frac{1}{4}$	17 $\frac{7}{8}$	...	Mexico . . .	G. L. Harrison.



Head of White Bighorn. Shot by Lieut. R. C. Dalglish, R.N.

B.—WHITE BIGHORN (*O. canadensis dalli*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
47	13 $\frac{3}{4}$	28	Yukon . . .	Lieut. R. C. Dalglish, R.N.
43 $\frac{1}{2}$	15 $\frac{1}{2}$	26	Alaska . . .	His Majesty the King.
43 $\frac{1}{4}$	14 $\frac{1}{4}$	27 $\frac{3}{4}$	Do. . . .	H. B. Alexander.
43	13 $\frac{1}{2}$	27 $\frac{1}{4}$	Do. . . .	Hon. Walter Rothschild.
41	14	23 $\frac{3}{4}$	Do. . . .	Hon. M. Egerton.
40 $\frac{3}{4}$	12 $\frac{3}{4}$	27 $\frac{1}{2}$	Do. . . .	F. T. Colby.
40	14	28 $\frac{1}{2}$	Do. . . .	J. Todd.
39	13 $\frac{3}{4}$	23 $\frac{1}{2}$	Yukon . . .	S. R. Vereker.
38 $\frac{1}{4}$	12 $\frac{1}{2}$	21 $\frac{1}{4}$	Alaska . . .	P. B. Vander Byl.
38	13 $\frac{1}{4}$	18	Do. . . .	A. E. Butter.
37 $\frac{3}{4}$	15 $\frac{1}{2}$	29 $\frac{1}{2}$	Yukon . . .	Surg. C. R. Rickard, R.N.
37 $\frac{1}{4}$	13 $\frac{3}{4}$	21 $\frac{1}{4}$	Alaska . . .	Lord Elphinstone.
37	13 $\frac{3}{4}$	20 $\frac{1}{2}$	Do. . . .	Hon. J. C. Lister.
36 $\frac{1}{2}$	13 $\frac{1}{4}$	...	Do. . . .	Sir A. Armstrong, Bart.
36 $\frac{1}{4}$	13	18	Do. . . .	R. F. Glyn.
36	14 $\frac{1}{2}$	17 $\frac{3}{4}$	Do. . . .	C. G. Cowan.
36	12 $\frac{1}{2}$	18	Do. . . .	Capt. C. R. E. Radclyffe.

OWNER'S MEASUREMENTS.

49 $\frac{1}{4}$	14 $\frac{1}{2}$	29 $\frac{3}{4}$	Yukon . . .	Major A. L. Snyder.
44 $\frac{3}{4}$	14 $\frac{3}{4}$	34 $\frac{1}{2}$	Do. . . .	Wilson Potter.
41 $\frac{3}{8}$	14 $\frac{1}{4}$	29	Do. . . .	American National Collection.
41 $\frac{1}{4}$	12 $\frac{1}{2}$	28 $\frac{1}{2}$	Do. . . .	J. C. Phillips.
40 $\frac{1}{2}$	13 $\frac{1}{2}$	27 $\frac{1}{2}$	Do. . . .	H. Disston.

C.—GREY BIGHORN (*O. canadensis fannini*).

A race characterised by the grey colour of the back.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
42 $\frac{1}{2}$	14	29 $\frac{1}{4}$	Yukon . . .	Hon. M. Egerton.
40 $\frac{1}{2}$	13	20	Near Dawson City .	Provincial Museum, B. C.
37	13 $\frac{5}{8}$	18 $\frac{1}{4}$	Yukon . . .	Hon. Walter Rothschild.
35 $\frac{3}{4}$	14	24 $\frac{3}{4}$	Do. . . .	W. H. Bell.
35 $\frac{1}{4}$	13 $\frac{1}{4}$	24 $\frac{1}{4}$	?	K. K. Horn.
♀ 9	5 $\frac{1}{2}$	9 $\frac{1}{2}$	Do. . . .	Prince Coloredo Mannsfeld.

- Owner's measurements.



Head of Black Bighorn. Shot by Major J. F. Church.

D.—BLACK BIGHORN (*O. canadensis stonei*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
42	14 $\frac{1}{4}$	28	Cassiar . . .	M. W. Ward.
41	14	28 $\frac{1}{2}$	Do. . . .	Viscount Lascelles.
40 $\frac{3}{4}$	13 $\frac{3}{4}$	25	Do. . . .	Lord Hindlip.
40	15	24 $\frac{1}{2}$	Do. . . .	C. H. Young.
40	14	...	Do. . . .	C. D. Butler.
40	12 $\frac{3}{4}$	21 $\frac{1}{2}$	Do. . . .	Major J. F. Church.
39 $\frac{1}{2}$	12 $\frac{1}{2}$	27 $\frac{1}{2}$	Do. . . .	Col. H. Appleton.
39	13 $\frac{1}{4}$	22 $\frac{3}{4}$	Do. . . .	K. K. Horn.
39	14 $\frac{1}{2}$	23 $\frac{1}{4}$	Do. . . .	Capt. The Hon. G. H. Douglas-Pennant.
37 $\frac{1}{2}$	13 $\frac{3}{4}$	23	Do. . . .	W. M. Tangye.
37 $\frac{1}{4}$	13 $\frac{1}{2}$	18 $\frac{1}{2}$	Do. . . .	R. Hayne.
36 $\frac{3}{4}$	14 $\frac{1}{4}$	24	Do. . . .	R. Beaumont.
36 $\frac{3}{4}$	12 $\frac{1}{2}$	21 $\frac{1}{4}$	Do. . . .	British Museum (J. M. Hanbury).

OWNER'S MEASUREMENTS.

44	14	25	Cassiar . . .	Col. Max C. Fleischmann.
43 $\frac{1}{4}$	14 $\frac{1}{2}$	30	Do. . . .	Wilson Potter.
43	14 $\frac{1}{2}$	30	Do. . . .	J. C. Phillips.
41 $\frac{1}{2}$	14	29	Do. . . .	C. F. Collins.
38 $\frac{1}{4}$	13 $\frac{3}{4}$	19	Do. . . .	P. N. Graham.
36	13 $\frac{1}{2}$	23 $\frac{3}{4}$	Do. . . .	Count C. Hoyos.



Skull and Horns of Kamchatkan Bighorn. Shot by Prince E. Demidoff.

E.—**KAMCHATKAN BIGHORN** (*O. canadensis nivicola*).

Although the Kamchatkan wild sheep is readily distinguished from the Rocky Mountain bighorn (*O. canadensis typica*) by the slenderness of the horns at the points, and their wider tip-to-tip measurement as well as by the shorter, blunter, and more thickly haired ears, the shorter face, the longer hair of the body, and the inferior size of the white patch on the rump, yet the white Alaskan and the black bighorn, in which the horns are of the Kamchatkan type, and the ears are shorter than in the Rocky Mountain race, tend to bridge over these points of difference. These transitions indicate that all the bighorns are essentially local modifications of the same animal; the Asiatic forms being, as might be expected, the most aberrant. Height at shoulder, about 37 or 38 inches; weight, about 250 lbs.

Distribution.—Kamchatka.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
39 $\frac{1}{4}$	14 $\frac{1}{2}$	28 $\frac{1}{4}$	Kamchatka . . .	Prince E. Demidoff.
38 $\frac{3}{4}$	14 $\frac{1}{2}$	30 $\frac{5}{8}$	Do. . . .	Do.
—38	13 $\frac{1}{2}$	26	Do. . . .	Dr. F. H. H. Guillemard.
35 $\frac{3}{4}$	13 $\frac{1}{4}$	24	Do. . . .	P. Niedieck.

— Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
35½	14½	24¾	Kamchatka . . .	St. Petersburg Museum.
35¼	14¼	24½	Do. . . .	British Museum (St. George Little- dale).
35	13¾	24	Do. . . .	W. S. Race.
34¾	14½	25½	Do. . . .	St. George Littledale.
34	13½	23⅝	Do. . . .	Hon. Walter Rothschild.
33	13¾	22	Do. . . .	Capt. C. R. E. Radclyffe.
32¾	13½	23	Do. . . .	Sir Edmund G. Loder, Bart.
♀ 10¾	5	14½	Do. . . .	Hon. Walter Rothschild.

F.—CLIFTON'S BIGHORN (*O. canadensis borealis*).

An East Siberian race closely allied to the last, but of a generally lighter colour, with a much larger and less well-defined white rump-patch, more white on the face, a darker tail, and larger ears.

Distribution.—The Stanovoi Mountains, the range between the valleys of the Yana and Lena, and other parts of Eastern Siberia. The only known examples in England were shot by Mr. J. Talbot Clifton, by whom a male was presented to the British Museum in 1902.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
37½	11	22¼	Yana Valley . . .	J. Talbot Clifton.
33	13	22½	Do. . . .	British Museum (J. Talbot Clifton).
32¾	11½	24½	Do. . . .	J. Talbot Clifton.
♀ 5½	3⅝	5½	Do. . . .	Do.

The ARGALI SHEEP (*Ovis ammon*).

In common with the following members of the genus *Ovis*, this splendid sheep has the transverse wrinklins of the horns well developed, and glands present on the face, with pits for their reception in the skull. In the present species the horns of the adult rams are characterised by their large size, massiveness, and the outward direction of their tips. The hind-quarters often show a large amount of white, extending on to the thighs; and the throat may be furnished with a voluminous ruff of long white hairs, which may or may not disappear in summer. Height at shoulder reaching in some races to about 4 feet; weight of adult male about 22 stone.

Regarding all forms of big Central Asiatic sheep, or argalis, as races of a single species, they may be classified as follows:—(1) The Tibetan race, *Ovis ammon hodgsoni*, of Tibet, with thick, massive horns, which do not form more than one complete circle, and have a maximum length of from $48\frac{1}{2}$ inches to 57 inches, and a girth of from 17 inches to 19 inches; (2) *O. a. mongolica*, of Mongolia, nearly allied to the last; (3) *O. a. typica*, of the Altai, with the massive horns forming more than a complete circle, rounded in front, approximated to the sides of the face, and having a maximum length of from 59 inches to 62 inches, and a girth of from 18 inches to 20 inches; (4) *O. a. storckii*, of south-eastern Kamchatka, distinguished by its small size; (5) *O. a. sairensis*, from the Sair Mountains, with small but relatively massive horns, measuring from about $45\frac{1}{2}$ inches to 47 inches in length, and $14\frac{1}{2}$ inches to $15\frac{1}{2}$ inches in girth; (6) *O. a. karelini*, of the Alatau, with a small rump-patch, and the horns more angulated in front than in *O. a. typica*, diverging more from the sides of the face, and having a maximum length ranging from $45\frac{1}{2}$ inches to $49\frac{1}{2}$ inches, and a girth of about 16 inches; (7) *O. a. humei*, of the Tien Shan N.-W. of Kashgar, nearly allied to the preceding, but with a larger rump-patch and other slight colour-differences, and outer angle of horns often rounded; (8) *O. a. littledalei*, of the Kulja district of the Tien Shan, with a rufous (instead of grey) colouring and no rump-patch, and long, thin horns, of which the maximum length ranges from 55 inches to 58 inches, with a girth of 17 inches or a fraction more; (9) *O. a. nigrimontana*, a small outlying race from the Karatau of Bokhara, allied to *littledalei*; (10) *O. a. poli*, of the Pamir, in which the horns are narrower and longer than in any of the other races, forming much more than one complete circle, with the front surface markedly angulated, and the maximum length ranging from 69 inches to 75 inches, and the girth from $14\frac{1}{2}$ inches to 16 inches, or, rarely, 17 inches.

Although the gradation in horn-characters may not be absolutely complete from the *hodgsoni* to the *poli* type, it is sufficiently well marked to justify the view here taken of the mutual relationships of these wild sheep.

It cannot be guaranteed that all the undermentioned specimens are correctly classified.

Distribution.—The Highlands of Central Asia, from Bokhara to Mongolia ; also Kamchatka.



Head of Tibetan Argali.

A.—**TIBETAN ARGALI** (*O. ammon hodgsoni*).

Chiefly distinguished from the Siberian argali by the development of a distinct white ruff on the throat of the males, which appears to persist in summer, and also by the less degree of lateral expansion of the horns, which do not form more than a single complete circle, are not "nipped in" below the eyes, and generally broken at the tips. The wrinkles on the horns are perhaps somewhat less prominent, and the outer front angle is frequently well developed.

The height at the shoulder is apparently rather less than in the typical argali. A ram shot by Lieut.-Col. Greenaway measured 76 inches from the nose to the tip of the tail, and weighed about 212 lbs. In another ram, whose age was estimated at 10 years, the height at the

shoulder was 43 inches, the girth 50 inches, and the weight 205 lbs. (Major Powell-Cotton).

Distribution.—The plateau of Tibet, from Northern Ladak to the districts north of Sikkim, and northwards to the Kuenluen; eastern limits unknown.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
57	18 $\frac{3}{4}$	29	Tibet	Arnold Pike.
50 $\frac{1}{2}$	18 $\frac{1}{4}$	19	Pangong Lake	Sir Edmund G. Loder, Bart.
49 $\frac{1}{2}$	19	21 $\frac{1}{4}$	Tibet	Capt. F. M. Bailey.
48	16	23	Rudok	Major G. A. L. Carew.
48	18 $\frac{1}{2}$	20	Ladak	Lieut.-Col. H. C. Morland.
48	18	31	Do.	Lieut.-Col. Hon. A. Dalzell.
47 $\frac{1}{4}$	16 $\frac{3}{4}$	24	Do.	K. C. Zarzhetsky.
47	17	27 $\frac{1}{4}$	? . . . . .	Col. H. Appleton.
46 $\frac{1}{2}$	19 $\frac{3}{4}$	20	Ladak	British Museum (Hume Collection).
46 $\frac{1}{2}$	16 $\frac{3}{4}$	...	Do.	Lieut.-Col. H. M. Biddulph.
46	16	17	?	Hon. R. A. Ward.
45 $\frac{1}{2}$	16 $\frac{1}{4}$	17	?	Duke of Teck.
45 $\frac{1}{2}$	17 $\frac{1}{4}$	19	?	C. P. Radclyffe.
45 $\frac{1}{4}$	17 $\frac{1}{4}$	17 $\frac{1}{2}$	? . . . . .	Capt. R. S. Kennedy.
45 $\frac{1}{4}$	18 $\frac{1}{2}$	19 $\frac{1}{2}$	? . . . . .	C. E. Bryant.
45	17	16	Ladak	J. V. Phelps.
45	16	19 $\frac{1}{2}$	Do.	P. F. Hadow.
45	17	22 $\frac{3}{4}$	Do.	Col. C. B. Wood.
44 $\frac{1}{2}$	17 $\frac{1}{4}$	19	Do.	W. A. Conduitt.
44 $\frac{1}{2}$	17	22	?	Major F. G. T. Deshon.
44	16	17 $\frac{1}{2}$	Ladak	Duke of Bedford.
44	16	17 $\frac{3}{4}$	Do.	W. R. Lawrence.
44	17	18 $\frac{1}{2}$	Do.	Major C. MacI. Ritchie.

OWNER'S MEASUREMENTS.

50	17	...	Tibet	Major W. H. Lane.
49 $\frac{3}{4}$	18	...	Ladak	Capt. G. W. S. Sherlock.
49 $\frac{1}{2}$	18	...	Tibet	G. Burrard.
48 $\frac{1}{2}$	19	...	Do.	E. Howard Brooke.
48	18 $\frac{1}{2}$	...	Do.	Col. T. K. E. Johnston.
47	17 $\frac{1}{2}$	18	?	Lieut.-Col. G. W. Brazier-Creagh.
¹ 46 $\frac{1}{2}$	16 $\frac{1}{2}$	21	Do.	Major P. H. G. Powell-Cotton.
46	19	...	?	Major C. S. Cumberland.

¹ Picked up.



Head of Siberian Argali. Shot by Mr. J. H. Miller in the Altai.

B.—**SIBERIAN ARGALI** (*O. ammon typica*).

A more or less distinct white patch on the rump, not extending on to the thigh, which is dark-coloured like the back; no ruff on the throat, even in the long winter-coat. In summer the coat of old males, which is very short, tends to become more or less light-coloured all over. Height at shoulder, from about 45 inches to 4 feet; weight, from about 250 to 350 lbs. As in the Tibetan race, considerable individual variation may be noticed in the horns, some having the outer front angle much more developed than usual; it does not appear that these differences can be accounted for by age.

Distribution.—In former times apparently extending from the Baikal Mountains to the Altai; now chiefly restricted to the latter area.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
62 $\frac{1}{4}$	19 $\frac{3}{4}$	38 $\frac{1}{4}$	Altai	St. George Littledale.
62 $\frac{1}{4}$	19 $\frac{1}{4}$	41 $\frac{1}{2}$	Do.	Col. C. B. Wood.
62	19	38 $\frac{3}{4}$	Do.	H. J. Elwes.
61 $\frac{1}{2}$	20 $\frac{1}{2}$	37 $\frac{1}{2}$	Do.	J. H. Miller. (See illustration.)
61 $\frac{1}{2}$	19 $\frac{1}{4}$	39 $\frac{1}{4}$	Do.	British Museum (St. George Littledale).

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
60	20	41	Altai	Lord Elphinstone.
59½	21½	42½	Do.	T. P. Miller.
59½	20	41½	Do.	Hon. Walter Rothschild.
59¾	19¾	38¼	Do.	St. George Littledale.
-59¾	19½	40	Do.	American National Collection.
59	18	36¼	Do.	H. W. Seton-Karr.
59	19	37½	Do.	Ford G. Barclay.
56½	18½	33½	Do.	Major C. S. Cumberland.
56	18½	35	Do.	British Museum.
56	17¾	33	Do.	E. W. Dixon.
55¼	18½	36¼	Do.	Count E. Hoyos.
55	18	39	Do.	Prince E. Demidoff.
55	19¾	34¾	Do.	D. Carruthers.
55	19½	39	Do.	Col. Max C. Fleischmann.
54½	19	33	Do.	R. Hayne.
54¼	18	33½	Do.	Lord Osborne Beauclerk.
53¼	21¾	33½	Do.	Duke of Bedford.
53¼	19	22	Do.	St. George Littledale.
53	18	39	Do.	W. E. Pease.
52½	19½	39	Do.	J. R. Bradley.
52	21	30½	Do.	P. B. Vander Byl.
- 9 26	7¼	23¾	Do.	Berlin Museum.

-- Owner's measurements.



Mongolian Argali (*O. a. mongolica*). Shot by Col. J. H. Abbot Anderson.

C.—**MONGOLIAN ARGALI** (*O. ammon mongolica*).

Allied to the Tibetan race, having a distinct yellowish-white throat-ruff, but apparently less massive horns, in which the outer front angles may be much rounded off. The white on the buttocks and hind surface of legs more abundant and purer in colour.

Distribution.—Eastern Mongolia and Manchuria to the north of Peking.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
50½	18	29	N. Shan-si, S. Manchuria	Col. J. H. Abbot Anderson.
49	16½	25	S. Mongolia . . .	H. Fowler.
47	16¾	25½	Do. . . .	G. N. Atkinson.
44¾	16½	23	Manchuria	H. R. H. Henri de Bourbon, Comte de Bardi.
41	17¼	19½	N. Shan-si	Major Sir T. S. Tancred, Bart.
41	17¼	24½	Do. . . .	M. G. Brisker.

D.—**SAIAR ARGALI** (*O. ammon sairensis*).

This rather small sheep is in some respects intermediate between *poli* and *ammon*, but differs from both in having the face brown above and white on the muzzle. The horns are less finely ridged than those of *ammon* and form a longer spiral.

Distribution.—The Saiar or Sair Mountains.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
47 $\frac{1}{2}$	15 $\frac{1}{2}$	27	Sajar Mountains	British Museum (St. George Little- dale. Type).
47	15 $\frac{1}{4}$	30	Do.	American National Collection.
¹ 46 $\frac{1}{4}$	14 $\frac{1}{4}$	27	Irtish District	Hon. Walter Rothschild.
46	13 $\frac{1}{4}$	27 $\frac{3}{4}$	Sajar Mountains	J. C. Phillips.
¹ 40	14 $\frac{3}{8}$	29 $\frac{1}{2}$	Nr. Sairam Nor	Lord Elphinstone.

E.—**ALATAU ARGALI** (*O. ammon karelini*).

Rump-patch smaller than in next race; horn characters mentioned under head of species.

Distribution.—Typically the Alatau and adjacent parts of Altai.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
53	16 $\frac{1}{2}$	33 $\frac{1}{4}$	Alatau Mountains	J. H. Miller.
49 $\frac{1}{2}$	16 $\frac{1}{4}$	25 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
45 $\frac{1}{2}$	14 $\frac{3}{4}$	34	Do.	Do.

F.—**KASHGARIAN ARGALI** (*O. ammon humei*).

General colour in winter greyish, with a ruff and large rump-patch.

Distribution.—Tien Shan, north-west of Kashgar.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
47	13 $\frac{1}{4}$	40	N.-W. of Kashgar	British Museum (co-type; Hume Collection).

G.—**LITTLEDALE'S ARGALI** (*O. ammon littledalei*).

General colour in winter rufous, with a yellowish ruff but no rump-patch.

Larger than *saiensis*, with the same brown forehead and white muzzle, but the ears smaller and rather farther away from the horns, and the latter less "nipped in" below the eyes than in the typical argali, and showing more of their inner surfaces in a front view. This is a "thin-horned" sheep.

Distribution.—Typically the east end of the Tien Shan, to the south-east of Kulja, or Ili.

— Owner's measurements.

¹ Determination provisional.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
58	17	41 $\frac{3}{4}$	Tien Shan	A. Bayley-Worthington.
58	15 $\frac{1}{4}$	40 $\frac{1}{2}$	Do.	W. R. Read.
57 $\frac{1}{4}$	17 $\frac{1}{2}$	41	Do.	Major A. D. Greenhill Gardyne.
55 $\frac{1}{2}$	15	45	Do.	Col. H. Appleton.
55 $\frac{1}{2}$	16 $\frac{1}{4}$	35 $\frac{3}{4}$	Do.	Capt. J. N. Price Wood.
55 $\frac{1}{4}$	16	37	Do.	Lieut.-Col. G. E. Pereira.
55	18	43	Do.	Col. H. Appleton.
55	16	44	Do.	H.R.H. the Duc d'Orléans.
55	16	43	Do.	Lord Osborne Beauclerk.
54 $\frac{1}{4}$	14 $\frac{3}{4}$	36 $\frac{3}{4}$	Do.	T. P. Miller.
54 $\frac{1}{4}$	16	34	Do.	A. W. Berg.
53 $\frac{3}{4}$	15 $\frac{1}{2}$	38	Do.	C. H. Bury.
53 $\frac{1}{2}$	17	41 $\frac{1}{4}$	Do.	B. Chew.
53 $\frac{1}{4}$	15 $\frac{1}{2}$	40 $\frac{1}{2}$	Do.	H. Whitaker.
52	15 $\frac{3}{4}$	42 $\frac{3}{4}$	Do.	J. H. Miller.
51 $\frac{1}{2}$	17	41 $\frac{1}{2}$	Do.	St. George Littledale.
51	16 $\frac{1}{2}$	39	Do.	British Museum (St. George Littledale. Type).



Bokharan Argali.

H.—BOKHARAN ARGALI (*O. ammon nigrimontana*).

The characters of this race are given under the heading of the species.

Distribution.—The Karatau (Black Mountain) of Bokhara, Russian Turkestan.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
35 $\frac{3}{4}$	10 $\frac{1}{2}$	24	Bokhara	D. Carruthers. (See illustration.)
33	10 $\frac{1}{2}$	21 $\frac{3}{4}$	Do.	Sir Edmund G. Loder, Bart.



Skull and horns of Marco Polo's Argali. Sir Edmund G. Loder's specimen.

I.—PAMIR or MARCO POLO'S ARGALI (O. ammon poli).

Distribution.—The Pamir plateau, extending to Hunza. This argali was first definitely made known in England by specimens obtained during the Second Yarkand Mission under the late Sir D. Forsyth during the years 1873 and 1874; since which date it has been killed by Mr. St. George Littledale, Major C. S. Cumberland, Col. H. Bower, Viscount de Poncins, and other sportsmen.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
70 $\frac{3}{4}$	15 $\frac{3}{8}$	44 $\frac{3}{4}$	Yuldez	G. L. Harrison. (See illustration, page 405.)
70	14 $\frac{1}{2}$	45	Do.	His Majesty The King.
70	17	52	Do.	H.H. the Maharaja of Cooch-Behar.
69 $\frac{1}{2}$	15 $\frac{1}{4}$	56	?	Marquis of Lansdowne.
69 $\frac{1}{2}$	14 $\frac{1}{2}$	39	Tagdumbash	Sir Edmund G. Loder, Bart. (See illustration.)
68 $\frac{3}{4}$	15	50 $\frac{1}{2}$	? . . . .	H. J. Elwes.
68 $\frac{1}{2}$	15	35 $\frac{3}{4}$	? . . . .	Lewis Flower.
68	17	43	Pamir	Lient.-Gen. Sir R. Pole-Carew.
67	15 $\frac{1}{2}$	42 $\frac{1}{2}$	? . . . .	Duke of Westminster.
66 $\frac{3}{8}$	15 $\frac{3}{8}$	46	Tagdumbash	Sir Edmund G. Loder, Bart.
66 $\frac{3}{8}$	13 $\frac{7}{8}$	46 $\frac{1}{2}$	Valley between Little and Great Pamir	British Museum (Hume Collection).
66	15 $\frac{1}{4}$	44	Do.	Do.
66	15 $\frac{3}{4}$	42	?	A. Leslie Renton.
65 $\frac{1}{2}$	16	53	Great Pamir (16,000 feet) .	British Museum (the late Gen. Sir T. E. Gordon).



Skull and horns of *Ovis poli* in the collection of Mr. George L. Harrison.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
65	16½	49½	?	Col. C. F. Blane.
64½	16½	46	Pamir	Major C. C. Ellis.
64¼	16½	41	Do.	W. Lawrence.
64¼	15¼	39	Do.	H. C. V. Hunter.
64	15½	50	Little Pamir	Major R. P. Cobbold.
64	15	39	Do.	A. Ezra.
64	15	49	?	Duke of Portland.
63⅝	16⅝	42½	Pamir	Hon. Walter Rothschild.
63	14⅝	32¼	Do.	Col. G. D. F. Sullivan.
63	16	49½	Little Pamir	Bachelors' Club (Major R. P. Cobbold).
62¾	16¼	51	Tagdumbash	Capt. T. W. Greenfield.
62½	15	57	Do.	Sir Edmund G. Loder, Bart.
62	15½	46½	Do.	G. L. Harrison.
62	14½	43½	Do.	L. C. Sanford.
61½	15½	46¼	Do.	E. L. Phelps.
60¾	15¾	46⅞	Pamir	St. George Littledale.
60	15¾	46¾	Tagdumbash	Capt. T. W. Greenfield.
60	15½	46	Do.	P. Church.
60	15¾	43	Do.	J. C. Phillips.
59¼	16	46	Do.	Capt. H. H. P. Deasy.
59	15½	40	Do.	Lord Curzon of Kedleston.
59	15¾	41	?	Martyn Kennard.
59	16½	44¼	?	R. F. Glyn.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
57 $\frac{3}{4}$	15 $\frac{3}{4}$	47	Pamir	H. M. von Archer.
57 $\frac{1}{2}$	16 $\frac{1}{4}$	48	?	J. Forbes Crombie.
57 $\frac{1}{2}$	14 $\frac{3}{8}$	43 $\frac{1}{4}$	?	Col. C. B. Wood.
57	14 $\frac{3}{4}$	48 $\frac{1}{2}$	Russian Pamir	Col. H. Appleton.
57	15 $\frac{1}{4}$	42	Tagdumbash	Hon. R. A. Ward.
56 $\frac{3}{8}$	15 $\frac{1}{8}$	35 $\frac{1}{2}$	Do.	St. George Littledale.
56 $\frac{1}{4}$	16 $\frac{3}{4}$	49 $\frac{1}{2}$	Do.	C. C. Tower.
56	14	45 $\frac{3}{4}$	?	Lieut.-Col. J. Manners Smith.
56	15 $\frac{1}{2}$	43 $\frac{1}{2}$	Pamir	Col. A. H. Hussey.
56	14 $\frac{1}{2}$	43	?	W. O. Bell-Irving.
55 $\frac{3}{8}$	16 $\frac{1}{2}$	43	Pamir	Major C. S. Cumberland.
55 $\frac{1}{2}$	16 $\frac{3}{4}$	40	?	P. Radclyffe.
55 $\frac{1}{2}$	16 $\frac{1}{4}$	46 $\frac{1}{2}$	Pamir	P. F. Hadow.
54 $\frac{1}{2}$	16 $\frac{3}{4}$	39 $\frac{1}{2}$	Do.	H.R.H. Prince Pierre d'Orléans and Braganza.
54 $\frac{1}{2}$	14 $\frac{7}{8}$	43 $\frac{1}{2}$	Do.	Major J. B. Mackintosh.
53 $\frac{3}{4}$	16 $\frac{1}{2}$	44 $\frac{1}{2}$	Do.	K. V. Painter.
53 $\frac{1}{2}$	14 $\frac{3}{4}$	38 $\frac{3}{4}$	N. Pamir	R. Hayne.

OWNER'S MEASUREMENTS.

75	16	54 $\frac{1}{2}$	Pamir	Field-Marshal Earl Roberts.
73	15	48	Little Pamir	The late Col. H. C. B. Tanner.
71	15 $\frac{1}{2}$	53 $\frac{3}{4}$	Great Pamir	Viscount Edmond de Poncins.
68 $\frac{1}{2}$	15 $\frac{1}{4}$	45 $\frac{3}{4}$	Do.	Mess of the Queen's Own Corps of Guides.
68	16	52	?	Indian Museum.
67 $\frac{3}{8}$	16	53 $\frac{3}{4}$	?	Indian Museum (Col. J. Biddulph).
67	16	...	?	H.H. the Maharaja of Travancore.
65	16	41	?	Dublin Museum.
63	15	54 $\frac{1}{4}$	?	R.E. Mess, Roorkee.
61	15	48	Killik Pass, Gilgit	F. M. Hodgkins.
♀ 41 $\frac{7}{10}$	51 $\frac{9}{10}$	15 $\frac{3}{4}$	Great Pamir	Viscount Edmond de Poncins.



Head of Shapo or Ladak Urial.

The URIAL or SHAPO (*Ovis vignei*).

A much smaller sheep than most of the Asiatic argalis, with comparatively slender and well-wrinkled horns of considerable length, which when fully developed curve forwards along the sides of the face; the males with a more or less developed mainly whitish ruff on the throat. General colour varying from rufous brown to grey in summer, with the chest, under-parts, and portions of the legs white, and sometimes blackish "points." Females with small horns. Height at shoulder, about 32 inches; weight, about 120 lbs.

Distribution.—From Ladak and Zanskar to Russian Turkestan, Transcaspia, Afghanistan, Baluchistan, Southern Persia, the North-West Frontier of India, the Punjab Salt-Range, and Sind. Four local races, two of which probably intergrade in the Indus valley, are recognised:—The typical urial of Astor, the sha or shapo of Ladak (*O. vignei typica*) with much black in the ruff; the Afghan urial (*O. v. cycloceros*) of Afghanistan, Baluchistan, and the Trans-Indus districts, in which the points of the horns tend to turn up, and the front angles may be knotted; the Punjab urial (*O. v. punjabiensis*) of the Cis-Indus Punjab, in which the size is less, the colour redder, the ruff much developed, and the horns form a close-coiled spiral; the Kopet-Dagh urial (*O. v. arkal*) of the Ust-Urz plateau and the Kopet-Dagh and Alag-Dagh, in which the front of the horns is much flattened, with the two angles very pronounced, and the ruff wholly white in front, the general colour being rufous.

A.—SHAPO or LADAK URIAL (*O. vignei typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
39	11 $\frac{3}{4}$	15 $\frac{1}{2}$	?	Maj.-Gen. Sir H. S. Rawlinson, Bart.
38 $\frac{3}{8}$	12 $\frac{1}{4}$	11 $\frac{1}{4}$	?	J. Carr Saunders.
38 $\frac{1}{2}$	11 $\frac{1}{4}$	8 $\frac{1}{2}$	Near Leh	E. L. Phelps.
36 $\frac{1}{4}$	11 $\frac{1}{2}$	4 $\frac{1}{4}$	Do.	British Museum (Hume Collection).
36 $\frac{1}{4}$	10 $\frac{7}{8}$	11 $\frac{5}{8}$	Baltistan	Major Sir T. A. Salt, Bart.
34 $\frac{3}{8}$	11	...	?	East India Club.
33 $\frac{1}{4}$	12	12	Ladak	Arnold Pike.
33	11	17 $\frac{1}{2}$	Do.	P. F. Hadow.
33	10 $\frac{1}{2}$	15	Do.	Major F. W. H. Walshe.
32 $\frac{1}{2}$	9 $\frac{1}{2}$	13 $\frac{1}{4}$	Do.	Capt. H. R. P. Dickson.
32 $\frac{1}{4}$	10	11	Do.	Capt. D. L. R. Lorimer.
32	10 $\frac{3}{4}$	13 $\frac{3}{4}$	Chitral	Capt. B. A. R. Blewitt.
31 $\frac{3}{4}$	10 $\frac{1}{4}$	14	Ladak	Capt. L. Trevor Goff.
31 $\frac{3}{4}$	10 $\frac{1}{4}$	7	Do.	Col. F. C. Lister-Kay.
31 $\frac{1}{2}$	10	15	Gilgit	Lieut.-Col. B. E. M. Gurdon.
31 $\frac{1}{2}$	10 $\frac{1}{4}$	13 $\frac{1}{2}$	Do.	Capt. B. H. Shaw-Stewart.
31 $\frac{1}{4}$	11	9 $\frac{1}{4}$	?	Major F. W. Wormald.
31	11	...	Do.	J. D. Cobbold.
31	11 $\frac{1}{4}$	12	Ladak	N. C. Cockburn.
30 $\frac{1}{2}$	8 $\frac{1}{2}$	19	Gilgit	Capt. K. Dingwall.
30 $\frac{1}{4}$	9 $\frac{3}{4}$	6 $\frac{1}{4}$	Chitral	Capt. A. W. Robertson-Glasgow.
30	11 $\frac{3}{4}$	16	?	Hon. Walter Rothschild.
30	10	10	Ladak	Lady Jenkins.
29 $\frac{7}{8}$	10 $\frac{3}{8}$	...	?	H. C. V. Hunter.
29 $\frac{1}{2}$	10 $\frac{1}{4}$	9	?	Col. C. B. Wood.
29 $\frac{1}{2}$	10 $\frac{1}{2}$	13	Ladak	J. V. Phelps.

OWNER'S MEASUREMENTS.

36 $\frac{1}{4}$	11 $\frac{3}{4}$	...	Near Leh	Lieut.-Col. A. E. Ward.
36	10	13	Gilgit	F. M. Hodgkins.
33 $\frac{1}{4}$	11 $\frac{1}{2}$	10 $\frac{5}{8}$	Ladak	Sir Edmund G. Loder, Bart.
31	11 $\frac{1}{2}$	9	Chilas	R.E. Mess, Roorkee.



Urial Skull and Horns in the Mess of the S.W. Militia, Wana.

B.—AFGHAN URIAL (*O. vignei cycloceros*).¹

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
41½	12	15½	?	The late Major G. Dodd.
39½	10¾	18¼	Waziristan . . .	Major F. H. Taylor.
38¾	9¾	9½	Chita Oapar Range, near Attock	Royal Artillery Mess, Woodwich (Lieut.-Col. C. F. Massey).
37½	10¼	11	Haji Khan, Kelat, 3000 ft.	British Museum (Hume Collection).
36¾	9	9	Hills north-west of Peshawur	Mess of the 60th Rifles (Lord Walter Fitzgerald).
35½	10½	16	Gulran, Afghanistan . . .	British Museum (Dr. J. Aitchison).
35¼	10½	12	S. Waziristan . . .	Capt. A. G. Shea.
35¼	10½	9½	Waziristan . . .	Major F. H. Taylor.
34½	10½	11	Do. . . .	Sir Edmund G. Loder, Bart.
34½	8¼	16	Sind	L. Napier.
33½	9½	8¾	?	Major R. L. Tottenham.
33½	9¾	15¾	Waziristan . . .	Capt. J. F. Turner.
32½	9½	11	?	Capt. E. A. Fielden.

C.—SALT RANGE URIAL (*O. vignei punjabiensis*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
34¾	9½	7¼	Kala Chitta Hills, Punjab	Hon. H. G. O. Bridgeman.
34	9¾	4½	Salt-Range . . .	Capt. L. Trevor Goff.
33½	9¼	12½	Do. . . .	British Museum (Hume Collection).

¹ Blanford (*Fauna Brit. India Mamm.*) pointed out that the type of *O. cycloceros* has heavier horns than the Punjab Urial, but does not seem to have been aware that it came from Afghanistan.



Urial. Shot by Col. H. V. Biggs, near Rawal Pindi.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
33 $\frac{1}{4}$	9	14 $\frac{1}{2}$	Salt-Range	Capt. R. Milne.
32 $\frac{3}{8}$	9	12 $\frac{1}{2}$	Near Rawal Pindi . . .	Major E. G. de Labillière.
32 $\frac{3}{8}$	7 $\frac{3}{4}$	12	Punjab	G. Blois Johnson.
32 $\frac{1}{4}$	10	11 $\frac{1}{2}$	?	British Museum (Hume Collection).
31 $\frac{1}{2}$	9 $\frac{1}{2}$	16 $\frac{3}{4}$	Salt-Range	Lieut.-Col. H. W. Codrington.
31 $\frac{1}{2}$	12	10 $\frac{1}{4}$	?	Lieut.-Col. J. Manners Smith.
31	9	17 $\frac{1}{4}$	Jhelam	Capt. W. F. Brayne.
31	9 $\frac{3}{8}$	14 $\frac{1}{2}$	Do.	Lieut.-Col. R. H. Rattray.

D.—KOPET DAGH URIAL (*O. vignei arkal*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
45 $\frac{1}{4}$	11	16 $\frac{1}{4}$	N. Persia	Capt. C. T. Daukes.
39 $\frac{1}{2}$	12 $\frac{1}{4}$	14 $\frac{1}{4}$	Russian Turkestan . . .	Prince E. Demidoff.
38 $\frac{1}{4}$	12	14 $\frac{1}{4}$	N. Persia	Capt. C. T. Daukes.
38	11 $\frac{1}{4}$	11 $\frac{1}{4}$	Persia	Lord Osborne Beauclerk.
38	10 $\frac{1}{2}$	13	Do.	Major P. M. Sykes.
37 $\frac{3}{4}$	12	17	Elburz Mountains, Persia (north side)	Lieut.-Col. R. L. Kennion.
37	11	10 $\frac{1}{2}$	North Persia	A. Bayley-Worthington.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
36 $\frac{3}{4}$	10	17 $\frac{1}{2}$	Persia	Major J. W. Watson.
36	10 $\frac{1}{4}$	15	Do.	Hon. Walter Rothschild.
34 $\frac{1}{2}$	11	12	Russian Turkestan	St. George Littledale.

VARIOUS RACES—OWNER'S MEASUREMENTS.

39 $\frac{3}{4}$	...	...	?	Mess of the 27th Punjabis (the late Major G. Dodd).
39 $\frac{1}{2}$	10	9	Seistan, Persia	Bombay Natural History Society.
38	10 $\frac{3}{4}$	9	Waziristan	Mess, S.W. Militia, Wana. (The late Capt. G. B. Brown. (See illustration, page 409.)
37 $\frac{1}{2}$	8 $\frac{3}{4}$	9	Do.	R.E. Mess, Roorkee.
37 $\frac{1}{4}$	9 $\frac{3}{4}$	...	Near Rawal Pindi	Col. H. V. Biggs. (See illustration, page 410.)
36 $\frac{3}{4}$	9 $\frac{7}{8}$	5 $\frac{3}{8}$	?	Dr. Albert von Stephani.
36 $\frac{1}{4}$	9 $\frac{1}{2}$	14	Near Quetta	F. Beaty.
35 $\frac{1}{2}$	10 $\frac{1}{4}$	20 $\frac{3}{4}$	?	Mess of the 21st Punjab Infantry.
34 $\frac{1}{2}$	11 $\frac{1}{4}$	21	Gilgit	J. West.

The RED or GMELIN'S SHEEP (*Ovis orientalis*).

Apparently differs from all the preceding species by the absence of horns in the females; the horns of the males being not unlike those of the urial, but usually curving backwards, so that their points are situated behind the neck instead of beneath the eyes. General colour of upper parts some shade of yellow or foxy red in summer; in winter, brownish with a whitish saddle-patch; the under parts and lower portions of the legs, as well as muzzle, white. A smaller throat-fringe than in the urial, which is always black. Height at shoulder, typically about 2 feet 9 inches.

Distribution.—Cyprus, Persia, Asia Minor, and Transcaucasia.

A.—CYPRIAN RACE (*O. orientalis typica*).

The typical race, distinguished by its small size, coloration, and the complete rounding-off of the front outer angle of the horns of the rams. This is the smallest of the wild sheep, standing only about 28 inches at the shoulder. Weight, about 70 lbs.

Distribution.—Troödos Mountains of Cyprus.



Cyprian Mouflon.

Length on front curve.	Circumference.	Tip to Tip.	Owner.
27	$7\frac{1}{2}$	$8\frac{3}{4}$	Hon. Walter Rothschild.
$25\frac{5}{8}$	$7\frac{5}{8}$	$7\frac{1}{2}$	J. A. Bucknill.
25	8	$15\frac{3}{4}$	H. Williamson.
$23\frac{1}{2}$	$8\frac{1}{8}$	$12\frac{1}{4}$	Col. J. Biddulph.
$23\frac{1}{2}$	$8\frac{1}{2}$	$9\frac{1}{2}$	Sir Edmund G. Loder, Bart.
23	7	$5\frac{3}{4}$	British Museum.
$22\frac{2}{3}$	$7\frac{1}{4}$	6	British Museum (Gen. Sir R. Biddulph).
$22\frac{1}{4}$	8	$12\frac{3}{4}$	Sir Victor Brooke's Collection.
$20\frac{1}{2}$	$7\frac{3}{4}$	$9\frac{3}{4}$	Sir H. J. Goold Adams.
$17\frac{1}{2}$	8	$1\frac{1}{2}$	Dublin Museum.
16	$7\frac{1}{4}$	$16\frac{1}{2}$	Cambridge Museum.

- Owner's measurements.

B.—ARMENIAN RACE (*O. orientalis gmelini*).

Distribution.—The mountains of Armenia and other parts of Asia Minor, and Transcaucasia. Heads from the Cilician Taurus approach the Cyprian type and may indicate a distinct race.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$40\frac{1}{4}$	$10\frac{1}{2}$	$5\frac{1}{2}$	?	British Museum (W. Burchart Barker).
$36\frac{1}{4}$	$10\frac{3}{8}$	$5\frac{3}{4}$	?	British Museum.



Armenian Mouflon. Shot by Mr. P. H. Thomas.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
31 $\frac{3}{4}$	9	16 $\frac{1}{2}$	Near Daghestan . . .	R. Graham.
30 $\frac{1}{2}$	9	17 $\frac{1}{2}$	Cilician Taurus . . .	P. H. Thomas. (See illustration.)
-29 $\frac{3}{4}$	9 $\frac{3}{4}$	9 $\frac{1}{2}$	Axylon . . .	E. N. Buxton.
28 $\frac{1}{2}$	10	14 $\frac{1}{4}$	Asia Minor . . .	R. P. Page.
27 $\frac{1}{4}$	9 $\frac{1}{2}$	21	W. Asia Minor . . .	T. Bowen Rees.
26 $\frac{1}{2}$	9 $\frac{1}{4}$	14	Asia Minor . . .	Col. C. M. Dobell.
26 $\frac{1}{4}$	9 $\frac{7}{8}$	12 $\frac{3}{4}$	Do. . .	Capt. F. Blacker.
26 $\frac{1}{10}$	8 $\frac{1}{2}$	12 $\frac{3}{8}$	Cilician Taurus . . .	C. G. Danford.
24 $\frac{3}{4}$	9 $\frac{3}{4}$	16	Asia Minor . . .	Il. O. Whittall.
24 $\frac{1}{2}$	9 $\frac{1}{4}$	11 $\frac{1}{2}$	Persian Frontier . . .	Prince E. Demidoff.
24 $\frac{1}{2}$	9	16 $\frac{3}{8}$	W. Asia Minor . . .	C. G. R. Lee.
24	9 $\frac{5}{8}$	17	Asia Minor . . .	Col. J. Biddulph.
24	9 $\frac{1}{2}$	18 $\frac{3}{4}$	Do. . .	W. N. Williamson.
23	9 $\frac{7}{8}$	14 $\frac{1}{2}$	Do. . .	Capt. W. W. Pitt-Taylor.

C.—PERSIAN RACE (*O. orientalis erskinei*).

In some instances the horns curve forward, when this sheep is practically indistinguishable from an ural. If the two really intergrade, the name *O. orientalis* has priority over *O. cycloceros*.

Distribution.—South flank of the Elburz Mountains of Persia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
27 $\frac{1}{2}$	10	14	Elburz Range . . .	Hon. W. Erskine.
24 $\frac{3}{4}$	9 $\frac{1}{2}$	15 $\frac{3}{4}$ (no beard)	S. slopes of the Elburz .	Capt. the Hon. G. H. Douglas-Pennant.
24	9 $\frac{1}{2}$	17 $\frac{1}{4}$ (beard)	Do.	Do.



Head of Mouflon. Shot by Count Andrassy.

The MOUFLON (*Ovis musimon*).

The large light-coloured saddle on the otherwise dark winter-coat of the rams and the form of the horns are so distinctive of the species that nothing in the way of description need be attempted in this place. The horns of rams normally curve forwards so as to have their tips near the eyes, and are comparatively massive, with the wrinkles of a type somewhat different from that obtaining in the red sheep. Two races appear recognisable, in one of which the ewes are hornless, while in the other they have short horns. Height at shoulder, about 27 inches.

Distribution.—At the present day the islands of Sardinia and Corsica.

Probably the race with hornless ewes is restricted to one of these islands.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
38½	8	11½	Sardinia . . .	Duke of Bedford.
34½	8¾	16¾	Do.	W. Moncreiffe.
33½	9	9	Do.	Hon. M. Egerton.
32¼	9	9	Do.	C. Sloane-Stanley.
32	8¾	14½	Do.	American National Collection.
31	8¼	10	Do.	C. G. R. Lee.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
30 $\frac{1}{4}$	8 $\frac{5}{8}$	14	Sardinia . . .	Rhys Williams.
30 $\frac{1}{4}$	8 $\frac{1}{4}$	10	Do.	Major B. H. Piercey.
29 $\frac{3}{4}$	8	12 $\frac{1}{2}$	Do.	C. Sloane-Stanley.
29 $\frac{3}{4}$	8	...	Do.	J. D. Cobbold.
29 $\frac{5}{8}$	8 $\frac{3}{4}$	11	Do.	Hon. R. A. Ward.
28 $\frac{7}{8}$	8 $\frac{1}{2}$	21	Do.	E. N. Buxton.
28 $\frac{3}{4}$	9	10	Do.	F. G. Barclay.
28 $\frac{1}{2}$	8 $\frac{5}{8}$	9 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
28 $\frac{1}{2}$	8 $\frac{3}{4}$	7	Bohemia (introduced)	J. Hamilton Leigh.
28 $\frac{1}{4}$	9 $\frac{3}{8}$	9 $\frac{3}{8}$	Sardinia	Edinburgh Museum.
27 $\frac{7}{8}$	8 $\frac{3}{4}$	5 $\frac{1}{4}$	Do.	W. E. Pease.
27 $\frac{5}{8}$	8 $\frac{3}{4}$	9	Do.	Prince E. Demidoff.
27 $\frac{1}{2}$	8 $\frac{3}{4}$	6 $\frac{1}{4}$	Do.	Commander J. E. Cameron, R.N.
27 $\frac{3}{8}$	8 $\frac{1}{4}$	6 $\frac{1}{4}$	Do.	Lieut. E. S. Fleetwood Nash, R.N.
27	8 $\frac{1}{2}$	10	Do.	British Museum.

OWNER'S MEASUREMENTS.

34 $\frac{1}{4}$	9 $\frac{1}{2}$	18 $\frac{3}{4}$?	Hungary (introduced)	Count M. Andrassy.
32 $\frac{3}{4}$	9 $\frac{1}{8}$	...	Austria do.	Count G. Andrassy.
31 $\frac{1}{4}$	8 $\frac{1}{2}$	11 $\frac{1}{2}$	Bohemia do.	W. Winans.
29 $\frac{3}{4}$	8 $\frac{3}{4}$	10 $\frac{1}{2}$	Do. do.	Count Erdödy.
29 $\frac{1}{4}$	9 $\frac{1}{16}$	13 $\frac{1}{4}$?	Do. do.	W. Winans.
27 $\frac{1}{2}$	10 $\frac{1}{4}$	18 $\frac{1}{2}$?	Do. do.	J. H. Thomas.
27	8 $\frac{1}{2}$	19?	Do. do.	W. Winans.
26	10 $\frac{3}{8}$	10 $\frac{1}{2}$?	Corsica	Col. J. Marriott.

DOMESTICATED SHEEP (*Ovis aries*).

The history and ancestry of the various breeds of domesticated sheep are lost in the mists of antiquity, and naturalists are unable to point with certainty to the wild stock from which any or all of them are derived. This is the more to be regretted, seeing that the Swedish breed is the type of the genus *Ovis*. Most domesticated breeds differ from wild sheep by the woolly nature of their coat; but since hairy tame sheep are met with in Africa and elsewhere, this point of difference is of comparatively little importance. More weight has been attached to the length of the tail, which may be longer than in the arui; but in some breeds like that of Soa, and also in the Himalayan Barwal and Hunia sheep, this appendage is comparatively short, and its length in other breeds is probably due to a kind of degeneration. The ancestry of domesticated breeds may therefore be looked for among the mouflons or urial or some allied extinct form, since the horns of most breeds approximate to the mouflon-type. In many breeds—Dorsetshire, for example—the females are horned; and four, or even five, horns occur in the males of certain breeds. Some eastern sheep, like the Wallachian, have departed from the mouflon-type by the development of upright corkscrew-horns comparable in form with those of the markhor, but with the twist of the spiral in the opposite direction.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
45½	9	15	Scotland . . .	J. A. H. Drought.
41	10	21	Do.	J. C. Lyell.
39½	8¾	21	?	H. E. Surtees.
37	8¼	20	Loch Awe, N.B. . .	H. Murray.
35½	8	16¾	?	Sir Victor Brooke's Collection.
35½	8½	24	Dorset	Hon. Walter Rothschild.
33	11	22¼	Yarkand	British Museum (Hume Collection).
23¼	7½	32½	W. Kan-su	H. F. Wallace.

OWNER'S MEASUREMENTS.

43½	10	14¾	Scotland	R. Shoolbred.
42½	8½	15	?	J. C. Phillips.
37	9¼	14	Scotland	Sir Edmund G. Loder, Bart.

Many-horned Breeds.

Length on outside curves.	Circumference.	Tip to Tip.	Number of Horns.	Owner.
23 ...20 $\frac{1}{2}$	6 $\frac{1}{2}$...4 $\frac{1}{4}$	29	Six	J. G. Millais.
21 $\frac{1}{4}$...17 $\frac{1}{2}$	7 $\frac{1}{2}$...5	35	Four	Capt. H. H. Banner.
21...20	6 $\frac{3}{4}$...4 $\frac{1}{4}$	25 $\frac{1}{4}$	Do.	D. McDouall.
20 $\frac{1}{4}$...16	6...4 $\frac{3}{4}$	15 $\frac{1}{2}$	Do.	The late Sir H. B. Meux, Bart.
19 $\frac{3}{4}$...14	6 $\frac{1}{2}$...4 $\frac{1}{2}$	21...16	Do.	P. C. Millbank.
19 $\frac{1}{2}$...14 $\frac{1}{4}$	8...5 $\frac{1}{4}$	27...9 $\frac{1}{4}$	Do.	British Museum.
19 $\frac{1}{2}$...19	7...4 $\frac{3}{4}$	9 $\frac{3}{4}$...22	...	R. J. Cuninghame.
19 ...18 $\frac{1}{2}$	9...6	31 $\frac{1}{2}$...5 $\frac{3}{4}$	Four	Sir Basil S. Brooke, Bart.

The following belong to the Wallachian breed :—

Length on the curve.	Length in a straight line.	Girth.	Tip to Tip.	Owner.
34 $\frac{3}{4}$	24 $\frac{3}{4}$	8	40 $\frac{1}{2}$	British Museum.
33	17 $\frac{1}{2}$	7 $\frac{1}{2}$	19 $\frac{1}{2}$	H. R. H. the Duc d'Orléans.
32	24	7 $\frac{1}{4}$	38	Do.
28	19 $\frac{1}{4}$	7 $\frac{1}{2}$	38 $\frac{3}{4}$	Hon. Walter Rothschild.
23 $\frac{1}{2}$	21	8 $\frac{1}{4}$	33 $\frac{1}{2}$	Sir Edmund G. Loder, Bart.
♀ 12 $\frac{3}{8}$	10 $\frac{1}{2}$	4 $\frac{1}{4}$	17 $\frac{1}{4}$	British Museum.

Unicorn Sheep.— An artificial product from the Himalayan Barwal breed :—

Length on curve.	Girth.	Locality.	Owner.
19 $\frac{3}{4}$	14	Nepal	Duke of Bedford.



Horns of Limpopo Buffalo from the Sabi Valley.
(In American National Collection ; shot by Mr. F. H. Barber.)

The AFRICAN BUFFALO (*Bos* [*Bubalus*] *caffer*).

Gamus, Sudani.

Gädärs, Galla.

Inyati, Swazi and Zulu.

Mboa and *Nyati*, Chilala and Chibisa.

Mbogo and *Nyati*, Swahili.

Nadi, in Barotsi and Ngami.

Nari, Basuto.

Beva, Hausa.

All African buffaloes may be regarded as referable to a single species, of which the extreme forms are represented by the great black Cape buffalo and the small red buffalo of the Congo ; *B. c. cottoni* of the Semliki Forest, in which only adult bulls are black, being one of the intermediate types. The number of races that have been named is so large that they cannot be quoted here.

A.—SOUTHERN RACES (*B. caffer typicus*, etc.).

Among the distinctive features of the typical race may be noted the enormous helmet-like mass formed by the closely approximated bases of the horns in old bulls, the backward inclination and comparatively slight angulation of the horns themselves, the shortness of the face, and the great width and size of the heavily fringed and flapping ears. In colour, both the skin and the sparse hairs with which it is clothed are for the most part jetty black ; the hairs themselves being directed uniformly backwards from the nape to the rump. Height at shoulder, about 5 feet.

Distribution.—Southern and Eastern Africa. Except on the Zambesi, Chobi, and some neighbouring rivers, buffaloes have now become very scarce in South Africa ; but between Umtali and the east coast at Beira, and also from the latter station to the mouth of

the Zambesi, they are to be met with in vast herds, and a few years ago existed in countless numbers. Here they are much protected by the unhealthy nature of the country, which is deadly to Europeans, except between the end of May and November. Except a few protected herds in the Addo bush, the Knysna and Zitzikamma forests, and thickets of the Fish and Sunday rivers, the species has long since been exterminated in the Cape. The Ankoli buffalo has been described as *B. c. radcliffei*, and is characterised by the flattened and less rugged horns; while the name *B. c. neumanni* has been given to the buffalo of northern Uganda, and *B. c. athiensis* to the B.E. African race. The Kivu *B. c. matheresi* of the Albert Edward Nyanza district is a smaller horned animal, with a white tail-tip, related to the Sudani race.



Ankoli Buffalo. Shot by F. A. Knowles in Uganda.

Greatest width.		Length on front curve.	Tip to Tip.	Width of palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.					
52½	48¾	...	47	11¾	Uganda . .	Her Majesty Queen Alexandra. (Shot by F. A. Knowles.)
51¼	47	...	39½	11	East Africa .	S. J. Pearson.
50¾	46¼	...	43¼	10	Do. . .	G. N. Crisford.
50	45½	...	37	11½	Do. . .	Col. Max. C. Fleischmann.
50	45½	...	40¼	11	Bechuanaland	Sir Edmund G. Loder, Bart.
49¾	47	...	45¼	11	East Africa .	H. A. Penton.
49¾	44½	...	32½	10¾	Do. . .	Major H. W. Stevens.
49¾	45¼	...	40½	9¾	Do. . .	Maharaja of Datia.
49¾	47½	...	48½	10½	Do. . .	R. Holmes.
49¼	44¾	...	35¾	11¼	N.W. Rhodesia	Major P. J. Bailey.

RECORDS OF BIG GAME

Greatest width.		Length on front curve.	Tip to Tip.	Width of palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.					
49	45 $\frac{3}{4}$	...	46 $\frac{1}{4}$	9 $\frac{1}{4}$	East Africa	R. G. C. Napier.
49	46 $\frac{1}{4}$	...	47	10 $\frac{3}{4}$	Lomagundi's Country.	E. T. Palmer.
49	44 $\frac{1}{2}$	..	40 $\frac{1}{2}$	11 $\frac{1}{4}$	Limpopo	Sir Richard Glyn, Bart.
48 $\frac{3}{4}$	43	41	32	10 $\frac{1}{2}$	East Africa	E. C. Gepp.
48 $\frac{3}{8}$	44	...	35 $\frac{1}{2}$	9 $\frac{3}{4}$	Chiromo, B.C.A.	Hon. Walter Rothschild.
48	43	...	36	12	East Africa	E. B. Horne.
48	44 $\frac{3}{4}$	...	39	9	Rhodesia	C. Grey.
47 $\frac{3}{4}$	42 $\frac{1}{2}$	...	31 $\frac{1}{2}$	11 $\frac{1}{2}$	East Africa	S. S. Bagge.
47 $\frac{3}{4}$	43 $\frac{3}{4}$	...	42	9 $\frac{1}{2}$	Do.	F. Santos Saurez.
47 $\frac{3}{4}$	44 $\frac{1}{4}$	...	40 $\frac{1}{2}$	10 $\frac{3}{4}$	Do.	Sir J. Hume Campbell, Bart.
47 $\frac{1}{2}$	43 $\frac{1}{2}$	34 $\frac{1}{4}$	39 $\frac{1}{2}$	10	Do.	H. R. H. Prince William of Sweden.
47 $\frac{1}{2}$	42	...	37 $\frac{1}{4}$	11 $\frac{1}{2}$	Ngamiland	Mervyn G. Williams.
47 $\frac{1}{2}$	42 $\frac{3}{4}$	...	36 $\frac{1}{2}$	12 $\frac{1}{4}$	Natal	Capt. J. C. Phillips.
47 $\frac{1}{4}$	42 $\frac{3}{4}$	...	42	10	East Africa	Capt. H. A. Case.
47	40 $\frac{7}{8}$	...	...	12 $\frac{1}{4}$	Do.	Sir F. J. Jackson.
47	42 $\frac{1}{2}$	...	35 $\frac{1}{2}$	11 $\frac{1}{2}$	Do.	H. G. Barclay.
47	42 $\frac{1}{2}$	...	38	10 $\frac{1}{4}$	Do.	Duke of Alba.
46 $\frac{3}{4}$	42 $\frac{1}{2}$	...	31 $\frac{3}{4}$	9 $\frac{1}{4}$	Do.	Capt. W. H. Wilkin.
46 $\frac{3}{4}$	41 $\frac{3}{4}$	...	36 $\frac{1}{2}$	11	Do.	Duchess d'Aosta.
46 $\frac{3}{4}$	41 $\frac{1}{2}$	...	35	7 $\frac{1}{2}$	Do.	Col. G. Gimlette.
46 $\frac{1}{2}$	42 $\frac{1}{2}$	...	38 $\frac{1}{2}$	9 $\frac{1}{4}$	Do.	A. F. C. Hartley.
46 $\frac{1}{2}$	42 $\frac{1}{2}$	...	31 $\frac{1}{2}$	10 $\frac{3}{4}$	Do.	Marquis de la Scala.
46 $\frac{1}{2}$	41 $\frac{1}{2}$	...	33 $\frac{1}{4}$	8 $\frac{1}{2}$	Do.	Hon. Mrs. Blyth.
46 $\frac{1}{2}$	42 $\frac{3}{4}$	...	41 $\frac{1}{4}$	10	Do.	I. N. Dracopoli.
46 $\frac{1}{4}$	43	...	42 $\frac{1}{2}$	10 $\frac{1}{4}$	Do.	Baron M. de Rothschild.
46 $\frac{1}{4}$	42 $\frac{1}{2}$	...	39 $\frac{1}{4}$	10 $\frac{1}{2}$	Do.	S. E. Milsom.
46	40 $\frac{1}{2}$	...	36	10	Do.	Lord Hindlip.
45 $\frac{3}{4}$	41	...	27 $\frac{3}{4}$	8	Pungwe	Sir Abe Bailey.
45 $\frac{3}{4}$	41 $\frac{1}{4}$	...	37 $\frac{1}{8}$	...	South Africa	British Museum.
45 $\frac{3}{4}$	42 $\frac{1}{2}$	...	44 $\frac{1}{4}$	9 $\frac{3}{4}$	East Africa	F. C. Stern.
45 $\frac{3}{4}$	40 $\frac{1}{4}$	...	31 $\frac{3}{4}$	11	Do.	Capt. F. W. Barrett.
45 $\frac{1}{2}$	41 $\frac{1}{2}$	...	32 $\frac{1}{4}$	10 $\frac{3}{4}$	Do.	H. S. L. Scott.
45 $\frac{1}{2}$	40	...	27 $\frac{3}{4}$	11	Do.	Capt. D. H. Macdonell.
45 $\frac{1}{2}$	41	...	34 $\frac{1}{4}$	10	Nyasaland	Capt. R. Meinertzhagen.
45 $\frac{1}{2}$	40 $\frac{1}{4}$	...	31 $\frac{3}{4}$	11	N.W. Rhodesia	Hon. Guy Wilson.
45 $\frac{1}{2}$	40	...	29 $\frac{1}{2}$	9	East Africa	Capt. T. H. Rivers Bulkeley.
45 $\frac{1}{2}$	42 $\frac{3}{4}$	...	43 $\frac{3}{4}$	9 $\frac{1}{4}$	Do.	H. Sampson.
45 $\frac{1}{4}$	41 $\frac{1}{2}$	...	37 $\frac{1}{4}$	10	Do.	Major S. Belfield.
45 $\frac{1}{4}$	41	...	30 $\frac{1}{4}$	9 $\frac{3}{4}$	Do.	M. Seth-Smith.
45 $\frac{1}{4}$	40 $\frac{3}{4}$	...	32 $\frac{3}{4}$	9	Tana Valley	Major H. De Prée.
45 $\frac{1}{4}$	41 $\frac{1}{4}$	...	37 $\frac{1}{8}$	...	...	British Museum.
45	39 $\frac{1}{2}$	...	33	10	East Africa	Capt. G. Wynne Finch.
45	...	...	44	10	Do.	H. S. Keating.
45	41 $\frac{1}{4}$	...	34 $\frac{3}{4}$	10 $\frac{1}{4}$	?	H. de la Pasture.
45	...	...	44	10 $\frac{1}{2}$	East Africa	H. H. Williams.
45	41	...	32	9 $\frac{1}{2}$	N.W. Rhodesia	Lieut.-Col. Frank Lee.
45	39 $\frac{1}{2}$	...	29	11 $\frac{1}{4}$	East Africa	Capt. R. Clemm.
45	39 $\frac{1}{2}$	...	26	11 $\frac{3}{4}$	Do.	L. L. Biddle.
45	40 $\frac{3}{4}$	...	31 $\frac{1}{2}$	10	Do.	P. F. Hadow.

Greatest width.		Length on front curve.	Tip to Tip.	Width of palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.					
44 $\frac{3}{4}$	40 $\frac{1}{4}$	...	36 $\frac{3}{4}$	9	East Africa .	Capt. P. Chapman.
44 $\frac{3}{4}$	39 $\frac{3}{4}$	...	27 $\frac{1}{2}$	8 $\frac{1}{2}$	Uganda .	G. Blaine.
44 $\frac{3}{4}$	39 $\frac{5}{8}$	...	27 $\frac{1}{2}$	11 $\frac{1}{4}$	East Africa .	Sir Robert Harvey, Bart.
44 $\frac{3}{4}$	41 $\frac{1}{2}$	...	39 $\frac{1}{4}$	11 $\frac{1}{2}$	N.W. Rhodesia	G. de P. Colville.
44 $\frac{3}{4}$	39 $\frac{1}{4}$	...	24 $\frac{1}{2}$	9 $\frac{3}{4}$	Do.	O. C. Bevan.
44 $\frac{3}{4}$	40 $\frac{1}{4}$	...	36 $\frac{1}{2}$	11 $\frac{1}{2}$	Ngamiland .	F. T. Garbutt.
44 $\frac{1}{2}$	39 $\frac{1}{4}$	...	29	12	Pungwe .	F. S. Staples.
44 $\frac{1}{2}$	38 $\frac{3}{4}$	...	29	9 $\frac{1}{4}$	East Africa .	H.R.H. the Duke of Connaught.
44 $\frac{1}{2}$	39 $\frac{1}{4}$	...	29	15	Chobi Valley .	F. C. Selous.
44 $\frac{1}{2}$	40	...	38	10 $\frac{1}{4}$	East Africa .	D. Davies.
44 $\frac{1}{2}$	39 $\frac{1}{4}$	...	33 $\frac{3}{4}$	10 $\frac{1}{2}$	N.W. Rhodesia	J. H. Leche.
44 $\frac{1}{2}$	...	...	37 $\frac{1}{2}$	12	East Africa .	F. Charrington.
44 $\frac{1}{2}$	40	...	39 $\frac{1}{4}$	11	Do.	Dr. A. E. Herz.
44 $\frac{1}{2}$	41	...	38 $\frac{1}{2}$	10	N.W. Rhodesia	R. Beaumont.
44	39	...	27 $\frac{3}{4}$	11	Do.	Capt. H. E. Hambro.
44	39 $\frac{1}{2}$	...	36	9 $\frac{1}{2}$	N.E. Rhodesia	W. A. Conduitt.
44	41	...	39 $\frac{1}{2}$	10 $\frac{1}{2}$	B.C. Africa .	Dr. J. O. Shircore.
♀ 43 $\frac{1}{2}$	40 $\frac{1}{2}$	...	29	6 $\frac{1}{4}$	East Africa .	N. C. Cockburn.
♀ 42 $\frac{1}{2}$	38 $\frac{1}{4}$	...	32	5	N.E. Rhodesia	J. Turner.

OWNER'S MEASUREMENTS.

54 $\frac{3}{8}$	...	...	...	16 $\frac{1}{2}$	German E. Africa	E. von Sick.
51	47	...	40	11	Uganda .	Major H. W. A. Christie.
51	47	...	39	14 $\frac{1}{4}$	East Africa .	H. B. Kittermaster.
48 $\frac{5}{8}$	...	...	35 $\frac{3}{8}$	...	Upper Zambesi	F. W. Walker.
48 $\frac{1}{4}$	43	...	30 $\frac{1}{2}$	11 $\frac{1}{4}$	Sabi Valley .	American National Collection. (See illustration, p. 418.)
48	...	...	44 $\frac{1}{2}$	11 $\frac{1}{2}$	East Africa .	R. O. Roberts.
47	...	...	31	12	Zitzi Forest, S. Africa.	Capt. E. H. Study.
46 $\frac{1}{4}$	40 $\frac{1}{2}$	...	39	12	N.E. Rhodesia	O. Letcher.
46	...	...	35	...	N.W. Rhodesia	C. S. Mann.

As will be seen from the illustrations, the greatest width scarcely conveys a correct idea of all specimens.



Horns of Bechuana Buffalo. Sir Edmund G. Loder's Specimen.



Skull and Horns of Sudani Buffalo.

B.—NORTHERN RACES (*B. caffer æquinoctialis*, etc.).

The Sudani race is a smaller animal than the Cape buffalo (height at shoulder, about 4 feet), with the general colour blackish or tawny brown, tinged locally with rufous, and tending to greyish on the legs. Horns smaller, much more flattened at the bases, where they are more widely separated, and in some, although not all, cases retreating less markedly behind the plane of the eyes. The Sudani race was originally described on the evidence of a skull from East Central Africa, but also occurs on the White Nile. The name *B. c. asracensis* has been applied to the buffalo of the Bahr-el-Azrek, a tributary of the Blue Nile, on the southern frontier of Abyssinia. Its horns are described as being more like those of the Cape race.

Greatest width. Outside.	Inside.	Tip to Tip.	Width of palm.	Locality.	Owner.
44	42½	43	8½	White Nile . . .	P. Niedieck.
41¼	37¼	34¾	8½	Mongala . . .	E. M. Sinauer.
40	39	39	10	White Nile . . .	Lieut.-Col. J. W. Yardley.
40	37½	38¾	8¼	Kordofan . . .	Capt. C. C. Maud.
40	37	32	11½	Abyssinia . . .	E. Lort-Phillips.
39¾	35½	27½	9	Sudan . . .	Capt. F. L. Livingstone-Learmonth.
39½	35¾	34	8½	White Nile . . .	Capt. A. H. Vivian.

Greatest width. Outside.	Greatest width. Inside.	Tip to Tip.	Width of palm.	Locality.	Owner.
39	36	33 $\frac{3}{4}$	10	White Nile	W. F. Wailes-Fairbairn.
38 $\frac{5}{8}$	33	25 $\frac{1}{4}$	12	Do.	Douglas McDouall.
38 $\frac{1}{2}$	35 $\frac{1}{4}$	30 $\frac{1}{4}$	8 $\frac{1}{2}$	Do.	H. R. H. the Duke of Connaught.
38 $\frac{1}{2}$	34 $\frac{1}{2}$	32 $\frac{3}{4}$	7	Do.	Major P. M. Dove.
38 $\frac{1}{4}$	34 $\frac{3}{8}$	32 $\frac{1}{4}$	8 $\frac{3}{4}$	Do.	R. McD. Hawker.
38 $\frac{1}{4}$	34	23 $\frac{1}{2}$	10	Do.	Capt. R. F. Balfour.
38	34	33	...	Do.	F. W. Greswolde-Williams.
38	34 $\frac{1}{2}$	28 $\frac{3}{4}$	7 $\frac{3}{4}$	Do.	G. H. Cheetham.
38	34	29	8	Do.	Major H. D. Pearson.
37 $\frac{3}{4}$	33 $\frac{1}{2}$	26 $\frac{1}{4}$	10	Do.	Capt. C. E. Hills.
37 $\frac{1}{4}$	34 $\frac{1}{8}$	33 $\frac{1}{4}$	8 $\frac{5}{8}$	Lado	Major P. H. G. Powell-Cotton.
37 $\frac{1}{4}$	34	33 $\frac{1}{4}$	9 $\frac{1}{2}$	White Nile	P. Santos Saurez.
37 $\frac{1}{4}$	33	28 $\frac{1}{4}$	9	Do.	Capt. W. E. Reymes-Cole.
37	34 $\frac{1}{2}$	35 $\frac{1}{4}$	10 $\frac{1}{2}$	Bahr-el-Ghazal	G. Blaine.
37	32 $\frac{1}{4}$	23 $\frac{3}{4}$	9 $\frac{1}{4}$	White Nile	Lord Desborough.
36 $\frac{5}{8}$	32 $\frac{1}{2}$	26	8 $\frac{1}{4}$	Sudan	Capt. A. Craufurd.
36 $\frac{1}{2}$	32 $\frac{1}{4}$	26 $\frac{1}{2}$	8	Do.	P. M. Tottenham.
36 $\frac{1}{2}$	33	30 $\frac{1}{2}$	9 $\frac{1}{2}$	Do.	Col. A. Colville.
36 $\frac{1}{2}$	31 $\frac{3}{4}$	29	9	Do.	Capt. the Hon. M. P. Macnaghten.
36 $\frac{1}{4}$	32 $\frac{3}{4}$	32 $\frac{1}{2}$	7 $\frac{1}{2}$	Do.	Countess of Sefton.
36 $\frac{1}{4}$	32	29 $\frac{1}{4}$	9	Do.	C. C. Tower.
36 $\frac{1}{4}$	32	22 $\frac{5}{8}$	8 $\frac{1}{2}$	White Nile	H. E. Allen.
36	32 $\frac{1}{2}$	29	9 $\frac{1}{2}$	Do.	J. V. Colby.
36	33 $\frac{1}{2}$	32	9 $\frac{1}{2}$	?	British Museum.
35 $\frac{3}{4}$	32	30 $\frac{1}{2}$	9	Sudan	R. A. Colvin.
35 $\frac{3}{4}$	33 $\frac{1}{2}$	35	7 $\frac{1}{2}$	Do.	G. C. Whitaker.
35 $\frac{1}{2}$	31 $\frac{3}{4}$	28 $\frac{1}{4}$	8 $\frac{1}{4}$	White Nile	E. N. Buxton.
35 $\frac{1}{2}$	32	28 $\frac{3}{4}$	8	Lado	Major P. H. G. Powell-Cotton.
35 $\frac{1}{2}$	32 $\frac{1}{2}$	31 $\frac{1}{4}$	7 $\frac{3}{4}$	White Nile	S. H. Whitbread.
♀ 35 $\frac{1}{2}$	32	25 $\frac{1}{4}$	5	Dinder Valley	C. D. Eyre.
35 $\frac{1}{4}$	31 $\frac{3}{4}$	29 $\frac{3}{4}$	8 $\frac{1}{4}$	Blue Nile	Capt. N. A. Orr-Ewing.
35 $\frac{1}{4}$	30 $\frac{5}{8}$	21 $\frac{3}{4}$	9 $\frac{3}{8}$	Do.	Capt. H. R. Headlam.
35 $\frac{1}{4}$	30	18 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Lieut.-Col. J. Ponsonby.
35	32	31 $\frac{1}{2}$	8 $\frac{3}{4}$	Do.	Norman B. Smith.

OWNER'S MEASUREMENTS.

43 $\frac{3}{4}$	37 $\frac{1}{2}$	28 $\frac{1}{4}$	11	Nimuli	F. A. Knowles.
39 $\frac{3}{4}$	34 $\frac{1}{2}$	30 $\frac{1}{2}$	8 $\frac{3}{4}$	Sobat	E. M. Tabor.
38 $\frac{3}{4}$	35 $\frac{1}{2}$	35 $\frac{1}{3}$	9 $\frac{1}{4}$	White Nile	Sir W. Garstin.



Skull and Horns of Congo (?) Dwarf Buffalo.

**C.—SHORT-HORNED RACES (*B. caffer brachyceros*, *B. c. planiceros*,
B. c. nanus, etc.).**

Bona, Hausa.

Despite the differences in size, colour, and the form of the horns between the dwarf red buffalo of the Congo (*B. c. nanus*) and its gigantic black cousin of the Cape, such a gradual transition can be traced from the one type to the other, that both are evidently nothing more than local modifications of one variable species. In the dwarf buffalo of the Congo the colour of the hair is red or yellow, the ears are fringed with very long hair, and the horns are much flattened at the base, with long smooth tips directed upwards. This type may be traced, with some modifications, to the Gabun. In Ashanti it is replaced by the red *B. c. beddingtoni*. In Gambia and Senegambia there is a larger brownish buffalo, with more laterally expanded and recurved horns known as *B. c. planiceros*. In the south Nigerian *B. c. hunti* cows and young bulls are dun. In the Kwilu district of the Congo occurs a dark-coloured race (*B. c. simpsoni*), typified by a female head in the British Museum. Another type is the Lake Chad buffalo (*B. c. brachyceros*), first discovered by the early explorers Denham and Clapperton. In height the Congo dwarf buffalo only reaches some 42 inches at the shoulder. Weight, 579 lbs. clean.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
28	20	20	Senegambia . .	Hon. Walter Rothschild.
27½	20½	12¾	Gold Coast . .	Capt. C. H. Armitage.
26½	19	18	N. Nigeria . .	Capt. J. C. Parker.
26½	19¼	7	Do. . .	Capt. H. V. Venables Kyrke.
26	18¾	22¾	Do. . .	G. C. W. King.
26	22½	20	French Congo . .	C. S. Mann.
25¾	17¼	17½	S. Nigeria . .	W. D. Downes.
25½	18¾	15	N. Nigeria . .	F. Cogan.
25½	20½	12	S. Nigeria . .	Lieut. A. W. Hunt, R.N.
25	17½	...	Portuguese Guinea . .	M. V. Hay.
24¾	19	7½	Sierra Leone . .	Capt. W. B. Stanley.
24¾	23½	14¼	N. Nigeria . .	Capt. O. M. Harris.
24¾	21¾	26	Do. . .	H. de C. Mathews.
24½	18½	15	Do. . .	J. C. Sciortino.
24	15½	7	Do. . .	Capt. L. M. Bucknill.
24	19¼	17	Do. . .	Capt. G. C. Kelly.
24	18¾	13½	Nepoko Valley, Congo	R. de la Huerta.
23½	23½	12	Do. . .	Duke of Peneranda.
23½	15	10	Gold Coast . .	Major G. S. C. Jenkinson.
23½	20	16¼	Do. . .	Capt. G. W. Dawes.
23	19	20½	N. Nigeria . .	R. M. Blackwood.
23	16½	8¼	Nigeria . .	Sir Abe Bailey.
22¾	16½	12	Ashanti . .	C. Beddington.
22¾	17¾	20¼	N. Nigeria . .	H. S. Berkeley.
22½	17	14	Gold Coast . .	Capt. T. W. C. Carthew.
22½	16½	18¼	Nigeria . .	Major-Gen. P. S. Wilkinson.
22¼	21	12¾	N. Nigeria . .	C. S. Burnett.
22	14	15	Congo . .	Capt. H. M. Stephenson.
22	19¼	9¼	Do. . .	J. Seally Bell.
21½	17½	9½	Near Kumasi . .	The late Dr. W. H. Langley.
21½	15	8	Gold Coast . .	Capt. G. H. Hastings.
21½	12¾	2¼	West Africa . .	British Museum.
21	17¾	14¼	Portuguese Guinea . .	C. S. Burnett.
21	15	9¼	Nigeria . .	A. Ohlsson.
21	17½	16¼	Do. . .	Major J. F. Loder-Symonds.
♀ 21	11	16	N. Nigeria . .	G. J. Letham.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
♀ 20½	11	6¾	Nigeria . . .	W. D. Barker.
20½	17	17¾	Senegambia . . .	G. Fenwick-Owen.
20½	16½	10	Nigeria . . .	Major D. F. MacCarthy Morrogh.
♀ 20½	13¼	14¼	Do. . . .	R. M. Blackwood.
20½	15	11	Benue Valley . . .	Capt. E. J. Wolseley.
20½	14½	6½	N. Nigeria . . .	A. B. Harcourt.
20½	20	11½	S. Nigeria . . .	C. Bowyer-Smijth.
20¼	18¾	12	Do. . . .	Capt. R. M. Heron.
20¼	17½	16	Sierra Leone . . .	Capt. J. F. Bill.
20	18	12½	S. Nigeria . . .	Capt. W. V. Nugent.
19¾	14	13	Sierra Leone . . .	Capt. E. J. Carter.
19	10	...	Lake Chad . . .	Hon. Walter Rothschild.
18¾	11½	3½	Nigeria . . .	W. H. Broun.
18¾	16	8¼	?	A. W. Boddy.
18½	12	6¾	Gambia . . .	H. C. Goddard.
18½	17	15	N. Nigeria . . .	Major J. B. Cockburn.
18½	17	8½	Do. . . .	J. F. Pett.
18½	11½	13¾	Senegambia . . .	Hon. Walter Rothschild.
♀ 18½	10½	11½	Do. . . .	G. Fenwick-Owen.
18½	17¼	4¾	Congo . . .	Col. J. J. Harrison.
♀ 18¼	10¾	5½	Lake Chad District .	British Museum (Capt. Denham, R.N., and Col. Clapperton).

OWNER'S MEASUREMENTS.

26¾	21½	26¾	N. Nigeria . . .	H. G. Glenay.
22¾	17	14¼	Sierra Leone . . .	Capt. H. A. Carter.

The following specimens from the French Congo may belong to *B. caffer brachyceros*:—

Shot by the late Prince P. Demidoff.

Length.	Girth.	Tip to Tip.
28	24¼	13¾
26	21½	18½
25½	25	21½
♀ 22½	16	16½



Head of Indian Buffalo. Shot by the late Maharaja of Cooch Behar.

The INDIAN BUFFALO or ARNA (*Bos* [*Bubalus*] *bubalis*).

No one is the least likely to confuse this animal with the African species. Both belong, indeed, to the same group of the genus *Bos*, and have the same rounded upper portion of the head and angulated horns. In the Indian species, however, the head is much longer, the ears are narrower and less heavily haired, and the horns of the male are widely separated on the forehead and totally different in form. Two types of horns may be recognised—one very massive, and curving regularly up from each side of the head in a subcircular manner; the other more slender, directed for the greater part of their length almost straight out from the head, and always with a wider spread. The first is the typical race (*B. bubalis typicus*), while the second, or Assam, race (probably now extinct) is *B. bubalis macroceros*. A third race from Assam has been named *B. b. fulvus*, and is distinguished by the concave profile of the skull and its dun colour. Height at shoulder, about 6 feet 2 inches; girth behind shoulder, 10 feet 8 inches. In a bull shot by the late Maharaja of Cooch Behar the length from the nose to the tip of the tail was 14 feet 2 inches, and to the base of the tail 11 feet; the maximum girth being 10 feet 8 inches, and the weight of the head, when cut off, 158 lbs.

Distribution.—Typically India, where the range includes the plains of the Bramaputra and Ganges from the eastern end of Assam to Tirhut, and the Terai as far west as Rohilcund, the plains near the coast in Midnapore and Orissa, and also the plains in the Eastern Central Provinces as far south as the Godaveri and Pranhita rivers. Buffaloes also occur in Ceylon, as well as in the Malay and Indo-Chinese countries; but whether any of the latter are truly wild is uncertain. In a domesticated state, South Europe, Egypt, etc. Native name of male, *arna*; of female, *arni*.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
77 $\frac{3}{8}$	17 $\frac{7}{8}$	...	...	...	?	British Museum (Sloane Collection).
70	18 $\frac{1}{2}$	60	67 $\frac{3}{4}$	72	Near Dubri, Assam	J. H. Whitehouse.
65 $\frac{3}{4}$	20 $\frac{1}{4}$	...	...	...	Do.	British Museum (Col. J. Mathie).
62	17	101	...	...	Do.	Hon. Walter Rothschild.
♀ 61 $\frac{3}{4}$	15 $\frac{3}{4}$	22 $\frac{1}{8}$	45 $\frac{1}{4}$	...	Cooch Behar . . .	H.H. the Maharaja of Cooch Behar.
♀ 61 $\frac{1}{2}$	16	22	48	...	Assam . . .	Hon. Walter Rothschild.
60	22	...	64	72	Central Provinces .	Major B. Vincent.
60	20	40	52	...	?	Sir Edmund G. Loder, Bart.
♀ 60	13 $\frac{1}{2}$	57 $\frac{1}{2}$	62 $\frac{3}{4}$	67 $\frac{5}{8}$	Assam . . .	Capt. L. P. Haviland.
♀ 59 $\frac{3}{4}$	16	48	57	63 $\frac{1}{4}$	Do. . . .	J. C. Phillips.
59	23	34	49	56 $\frac{3}{4}$	Do. . . .	T. H. Monteath.
57 $\frac{3}{4}$	17 $\frac{1}{2}$	55 $\frac{1}{2}$	65	71 $\frac{1}{4}$	Central Provinces .	J. May.
57	18 $\frac{1}{2}$	41 $\frac{1}{2}$	60	...	Do. . . .	Col. G. D. F. Sullivan.
57	15	49	52	...	Assam . . .	A. H. Straker.
♀ 57	14 $\frac{1}{2}$	53	61	...	?	Sir Edmund G. Loder, Bart.
56 $\frac{1}{4}$	21 $\frac{1}{2}$	40	52 $\frac{3}{4}$	...	Assam . . .	British Museum (Hume Collection).
♀ 56	19 $\frac{1}{4}$	33 $\frac{7}{8}$	50 $\frac{1}{4}$	...	Cooch Behar . . .	H.H. the Maharaja of Cooch Behar.
56	17 $\frac{1}{2}$	62	61 $\frac{1}{2}$	64 $\frac{1}{2}$	Bengal . . .	G. Monteath.
56	18 $\frac{1}{4}$	108	...	...	Assam . . .	H. R. H. the Duc d'Orléans.
55 $\frac{1}{2}$	18 $\frac{1}{2}$	29	44	...	?	J. Carr Saunders.
55	22	55 $\frac{1}{2}$	62	66	Central Provinces .	L. T. Harris.
54 $\frac{1}{2}$	18 $\frac{1}{8}$	38 $\frac{1}{4}$	48 $\frac{7}{8}$	...	?	British Museum (Hume Collection).
♀ 54 $\frac{1}{2}$	12 $\frac{3}{4}$	69 $\frac{3}{4}$	70	...	Assam . . .	Do.
54 $\frac{1}{2}$	19 $\frac{1}{2}$	24 $\frac{1}{2}$	40 $\frac{1}{2}$	49	?	Stockholm Museum.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
54½	19	50	59	64	?	Viscount Powerscourt.
54	18½	34	47½	54¾	Cambodia . . .	H.R.H. the Duc de Montpensier.
¹ 53½	23 (6 ft. 2½ ins. at shoulder)	30	42½	...	Cooch Behar . . .	H.H. the Maharaja of Cooch Behar.
53	19	36½	48¾	56	?	Col. H. Lysons.
52	20	21¼	41½	49¼	Central Provinces .	Earl of Sefton.
51¾	18½	22	38¼	...	Assam	Sir Peter Walker, Bart.
51½	18	38	50	56	Central Provinces .	Hon. J. Best.
51½	19	43	52¾	60½	Do.	Capt. A. McB. Woodside.
51¾	19¾	45¾	50	...	Do.	Major P. H. G. Powell-Cotton.
50¾	22	34½	44½	50½	Cooch Behar . . .	The late Sir Henry D. Tichborne, Bart.
50¾	18¾	54½	60¼	65	Patna	Brig.-Gen. F. H. Whitby.
50¾	19½	34½	46¾	54	Central Provinces .	H. Tyler.
50½	19¼	23¾	42½	49½	Do.	H. H. Cripps.
50	20	34¼	47	53½	Cochin China . .	D. Dickson.
50	18½	48½	60	...	Central Provinces .	Major C. F. Pinney.
50	13¼	33	38½	...	Assam	Noel Fenwick.
50	17	31¾	50	...	Do.	Col. D. M. Lumsden.
50	19½	36½	46	52½	Do.	A. Ezra.
49¾	19¼	33¾	48	55¼	Central Provinces .	Countess of Sefton.

OWNER'S MEASUREMENTS.

71	21½	34¾	60	...	Near Dubri, Assam	Measured by the late A. O. Hume; shot by A. Forbes.
♀ 70½	18	...	64	78	Do.	The late Sir A. Campbell-Orde.
67½	...	...	...	...	Do.	Major H. Gidney.
♀ 64½	18	42½	60	96	Do.	J. Campbell of Kilberry.
59½	18½	...	54	61½	Eastern Bengal .	R.E. Mess, Roorkee.
59½	15	...	53	59	?	Sir Savile Crossley, Bart.
♀ 57½	15¾	95½	...	96½	Cooch Behar . . .	H.H. the Maharaja of Cooch Behar.
57	18	...	...	...	Central Provinces .	J. D. Inverarity.
56	18	29½	...	57½	?	J. Whitaker.

¹ Measured round outside curves across skull, 9 ft. 11¾ ins. Another pair, 10 ft. 5 ins.; circumference of horn at base, 21 inches.

The following specimens are, with one exception, from Ceylon :—

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
40	15½	24	35¼	42	Ceylon . . .	F. T. Wright.
♀ 37¼	9¾	42¼	47	50½	Do.	M. J. Alderson.
35	13¾	18	30¾	37½	Do.	Marquis of Stafford.
34¼	15¼	25¾	35	...	Do.	Earl Cairns.
♀ 33¼	9	31½	37	...	Do.	Do.
33¼	13	32¼	38	43	Do.	Major F. H. N. Pym.
31¾	16	28	...	38½	Do.	Marquis Camden.
31½	15½	27	34	38	Do.	P. Niedeck.
31½	16	...	47¼	...	South Australia (introduced)	H. L. Heber Percy.
29	13½	28½	33¼	37	Ceylon . . .	K. J. F. Bickersteth.

OWNER'S MEASUREMENTS.

35	14½	39¼	42	47½	Ceylon . . .	H. R. H. Prince George of Bavaria.
♀ 28	9¾	18¼	26	31½	Do.	H. M. von Archer.
♀ 27¼	9½	15	25	29¼	Do.	H. R. H. Prince Pedro d'Orléans and Braganza.



Head of Anoa.

The ANOA (*Bos* [*Bubalus*] *depressicornis*).

The smallest wild member of the ox tribe, characterised by its straight, upright horns, and the frequent presence of white spots on the sides of the head or elsewhere. Although so different in the form of the head and horns from the adult Indian buffalo, the anoa is in these respects much more like the young of the latter; and the two are connected to a considerable extent by the tamarau, or Philippine buffalo (*Bos mindorensis*) of the island of Mindoro. As in all the Oriental buffaloes, the hair of the fore-part of the back is directed forwards in the anoa. Height at shoulder, about 3 feet 3 inches. Two races are recognised.

Distribution.—The island of Celebes.

Length on front curve.	Circumference.	Tip to Tip.	Owner.
12 $\frac{2}{8}$	6	6 $\frac{1}{2}$	British Museum.
12 $\frac{1}{8}$	6	5 $\frac{1}{4}$	G. A. Wright.
10 $\frac{1}{2}$	6 $\frac{1}{4}$	7	Carl Hagenbeck.
10	6	5 $\frac{1}{2}$	Sir Edmund G. Loder, Bart.
10	5 $\frac{7}{8}$	5 $\frac{3}{8}$	Sir Victor Brooke's Collection.

OWNER'S MEASUREMENTS.

15 $\frac{2}{8}$	7 $\frac{1}{8}$	7 $\frac{1}{2}$	Paris Museum.
¹ 13 $\frac{1}{2}$	9 $\frac{1}{4}$	5	Jesuit College, Manila.
9 $\frac{3}{4}$	5 $\frac{3}{8}$	7 $\frac{1}{8}$	Dr. Albert von Stephani.
9 $\frac{1}{2}$	8 $\frac{1}{2}$	8 $\frac{1}{2}$	Dublin Museum.

¹ Measured by the late Rear-Admiral R. A. J. Montgomerie.



Head of European Bison. Shot by H.H. the Prince of Monaco.

The BISON (*Bos* [*Bison*] *bonasus*).

The great elevation of the fore-quarters, the mass of long hair clothing the head, shoulders, and fore part of the body, together with the peculiar form of the head and horns, the latter of which are cylindrical, serve at once to distinguish bison from the other members of the ox tribe. There is also a difference in the number of ribs between the bison and the more typical oxen, the number in the former being 14 pairs, against 13 in the latter. In the European species the mass of hair on the fore-quarters is not so long as in its American cousin, the form of the skull is different, and the hind-quarters do not fall away nearly to the same extent. Some differences may be noted between Caucasian and Lithuanian specimens, which are now referred to separate races. Height at shoulder, 6 feet 1 or 2 inches. In a Caucasian bull killed by Mr. Littledale, the length from the nose to the root of the tail measured 10 feet 1 inch, the height at the shoulder, 5 feet 11 inches, and the approximate girth of the body, 8 feet 4 inches. Weight (Mr. W. Winans), 2001 lbs.

Distribution.—At the present day restricted to the Caucasus and the forest of Bielowitzka in Lithuania; the herds in the latter district existing in a protected state. The name aurochs, commonly misapplied to the bison, belongs to the extinct wild ox of Europe. The Caucasian race is named *B. b. caucasius*.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
20	12	20	...	Pilawin Game Park	W. Winans.
18 $\frac{1}{4}$	12 $\frac{1}{8}$	13 $\frac{3}{4}$	19 $\frac{1}{4}$	Lithuania . .	British Museum (H.I.M. the Tzar Alexander).
18	12 $\frac{1}{8}$	16	20	Caucasus . .	St. George Littledale.
17 $\frac{1}{2}$	10	18 $\frac{1}{2}$	...	Lithuania . .	Major Algernon Heber-Percy.
17 $\frac{1}{4}$	13 $\frac{1}{2}$	17	...	Do. . .	Prince of Monaco.
16 $\frac{3}{4}$	12 $\frac{1}{4}$	21 $\frac{7}{8}$	24 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
16 $\frac{3}{4}$	11 $\frac{1}{4}$	18 $\frac{3}{4}$	21 $\frac{1}{2}$	Woburn . .	G. L. Harrison.
♀ 16	8 $\frac{1}{4}$	12	...	Do. . .	Royal Scottish Museum.
♀ 15 $\frac{1}{4}$	8	6	...	Lithuania . .	Major Algernon Heber-Percy.
14	14	26 $\frac{1}{4}$	...	Woburn . .	Royal Scottish Museum.
♀ 13	8 $\frac{1}{4}$	9 $\frac{3}{4}$	14	Caucasus . .	St. George Littledale.

OWNER'S MEASUREMENTS.

18 $\frac{1}{8}$	10 $\frac{1}{8}$	17 $\frac{1}{2}$	20 $\frac{1}{2}$	Lithuania . .	The late Prince Henry of Liechtenstein.
17 $\frac{2}{5}$	13 $\frac{3}{10}$	13 $\frac{2}{5}$	20 $\frac{1}{10}$	Do. . .	Do.
15 $\frac{3}{4}$	12 $\frac{2}{5}$	21 $\frac{1}{4}$	...	Do. . .	Imperial Museum, Vienna.



Skull and Horns of Record American Bison. Shot by Lord Rendlesham.

The AMERICAN BISON (*Bos* [*Bison*] *bison*).

Some of the points distinguishing this species from the European bison have been mentioned under the head of the latter, but it may be added that in the typical race of the former the horns are shorter, thicker, blunter, and more sharply curved. In the skull of the American animal the sockets of the eyes have a more tubular form. Height at shoulder, about 5 feet 9 inches; weight, from 15 to 20 cwt.; an adult bull weighed by W. T. Hornaday scaled 2100 lbs.

Distribution.—The greater portion of Western North America, ascending to the Great Slave Lake, and descending to New Mexico and Texas; now nearly exterminated. American writers recognise two races—the prairie-bison (*B. bison typicus*), and the larger wood-bison (*B. bison athabascæ*) of the forest highlands of the North-West.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside spread.	Locality.	Owner.
20 $\frac{7}{8}$	15	...	30 $\frac{1}{2}$	Wyoming . . .	Lord Rendlesham.
17 $\frac{3}{4}$	12 $\frac{3}{8}$	15 $\frac{1}{8}$	...	?	H.R.H. the Duke of Saxe-Coburg and Gotha.
17 $\frac{1}{2}$	12	...	25 $\frac{1}{2}$	Wyoming . . .	H.R.H. the Duc d'Orléans.
17 $\frac{1}{2}$	13 $\frac{1}{2}$	21	...	?	Viscount Powerscourt.
17 $\frac{1}{8}$	11 $\frac{3}{8}$	10 $\frac{3}{8}$	17 $\frac{1}{8}$	?	British Museum.
16 $\frac{3}{8}$	14 $\frac{1}{4}$	24	...	Bighorn Mts., Wyoming	Earl of Lonsdale.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside spread.	Locality.	Owner.
¹ 16½	12½	19¾	...	Colorado . . .	Sir Edmund G. Loder, Bart.
16¼	13½	14¼	...	?	Duke of Portland.
16¼	13	22¾	...	Wyoming . . .	Prince Nicolas Ghika.
² 16⅔	15⅞	25¾	...	Colorado . . .	Sir Edmund G. Loder, Bart.
15¾	14	27¾	...	N. W. Territory . . .	E. G. Jenkins.
15½	14¾	...	19¾	Wyoming . . .	St. George Littledale.
15½	10¾	15½	...	Do. . . .	Abel Chapman.
14	13	21½	...	Do. . . .	G. L. Harrison.

OWNER'S MEASUREMENTS.

20¼	16⅔	33½	...	?	W. H. Root.
19	12½	...	...	W. Montana . . .	P. Liebinger.
¹ 18¾	15	27½	...	?	American National Collection.
18½	15	25	...	Wyoming . . .	P. N. Graham.
18	14	...	...	Montana . . .	F. Sauter.
17½	12½	...	...	S. W. Montana . . .	Theodore Roosevelt.
17	14	17½	...	Yellowstone, Montana	Count E. Hoyos.
16⅞	12¼	20⅞	...	Wyoming . . .	Dr. Albert von Stephani.
16¾	13	19½	...	Nebraska . . .	Imperial Museum, Vienna.

¹ Wood Bison.

² Prairie.



Skull and Horns of Wild Yak. From a specimen in the British Museum, presented by the late Mr. A. O. Hume.

The YAK (*Bos* [*Poëphagus*] *grunniens*).

The plateau of Tibet is remarkable for the number of its peculiar mammals, among which is the yak. Apparently its nearest relatives are the bisons, but the yak has not the great elevation of the withers in comparison with the hind-quarters so distinctive of the latter, and the long hair forms a fringe on each side of the flanks, shoulders, and thighs, as well as a tuft on the chest, while the tail is clothed with a huge mass of similar long hair, forming, when cut off and mounted, the well-known "chowries." Yak-horns are much larger than those of living bison, and have a totally different curvature; while there are also important differences in the skull. Height at shoulder, from about 4 feet 10 inches to at least $5\frac{1}{2}$ feet; girth behind shoulder, 9 feet $1\frac{1}{2}$ inches; length from between horns to base of tail, 8 feet $\frac{1}{2}$ inch;

tail, 3 feet $2\frac{1}{2}$ inches; from between horns to nose, 1 foot $3\frac{1}{2}$ inches (Lieut.-Col. H. M. Biddulph). Weight, about 1140 lbs. Wild yak are uniformly blackish brown in colour, any trace of white indicating domestication, and probably cross-breeding.

Distribution.—The plateau of Tibet, part of the Kan-su province of China and North-eastern Ladak, at elevations between about 14,000 and 20,000 feet. The grunting cry from which the animal takes its name is peculiar to the domesticated breeds.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$38\frac{1}{4}$	17	19	Kuenlun Mts. . . .	British Museum (Hume Collection).
$35\frac{1}{2}$	15	16	?	E. L. Phelps.
$35\frac{1}{4}$	$14\frac{1}{2}$	17	Tibet	St. George Littledale.
34	12	$30\frac{1}{2}$	Ladak	Hon. Walter Rothschild.
$32\frac{1}{2}$	$14\frac{1}{2}$	$17\frac{1}{4}$	Tibet	P. F. Hadow.
$32\frac{1}{2}$	16	25	Do. . . .	Sir Edmund G. Loder, Bart.
$32\frac{1}{2}$	14	$14\frac{1}{4}$	Do. . . .	Capt. R. Longstaff.
32	$13\frac{7}{8}$	$15\frac{1}{4}$	Do. . . .	H. C. V. Hunter.
32	$14\frac{1}{2}$	9	Do. . . .	I. Morse.
32	16	17	Do. . . .	P. Church.
32	$15\frac{3}{4}$	$21\frac{3}{4}$	Do. . . .	Capt. D. L. R. Lorimer.
$31\frac{3}{4}$	$15\frac{1}{4}$	$15\frac{3}{4}$	Do. . . .	G. L. Harrison.
$31\frac{1}{2}$	$15\frac{1}{2}$	$17\frac{1}{4}$	Chinese Tibet . . .	Capt. J. A. Stewart Balmain.
$31\frac{1}{4}$	$15\frac{1}{2}$	13	Do. . . .	Lieut.-Col. H. W. Codrington.
$31\frac{1}{4}$	$14\frac{1}{2}$	$16\frac{3}{4}$	Do. . . .	Major Sir E. F. Coates.
$31\frac{1}{4}$	$15\frac{1}{2}$	$18\frac{1}{4}$	Do. . . .	Lieut.-Col. H. M. Biddulph.
31	14	...	Do. . . .	Col. F. C. Lister-Kay.
31	$13\frac{1}{2}$	14	Ladak	Arnold Pike.
31	$16\frac{1}{4}$	$17\frac{3}{4}$	Kumaon	E. R. Neave.
31	$14\frac{1}{2}$	$16\frac{1}{4}$	Tibet	Hon. J. D. Boyle.
$30\frac{3}{4}$	15	20	Do. . . .	R. S. H. Walford.
$30\frac{3}{4}$	16	$22\frac{1}{4}$	Do. . . .	C. F. M. Pike.
$30\frac{3}{4}$	$13\frac{1}{2}$	$10\frac{1}{2}$	Ladak	Sir Robert Harvey, Bart.
♀ $30\frac{3}{4}$	13	20	Do. . . .	Major L. Oldfield.
♀ 30	$11\frac{1}{4}$	$45\frac{1}{2}$	Tibet	Duke of Bedford.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
30	$14\frac{1}{4}$	$19\frac{3}{4}$	?	Major Sir W. R. Codrington.
30	$14\frac{3}{4}$	30	?	J. C. Phillips.

OWNER'S MEASUREMENTS.

40	18	...	Kuenlun Mts. . . .	A. D. Carey.
39	..	...	?	Lucknow Museum.
$38\frac{1}{4}$	$18\frac{1}{2}$	$26\frac{1}{4}$	Kuenlun Mts. . . .	British Museum. (Hume Collection; shot by late A. Dalgleish.)
33	16	18	N.W. Tibet	Capt. S. H. Charrington.
$32\frac{7}{8}$	$13\frac{1}{2}$	19	Tibet	Capt. B. H. Shaw-Stewart.
$32\frac{3}{4}$	14	$17\frac{1}{8}$	Chang Chenmo	Major P. H. G. Powell-Cotton.
$31\frac{7}{8}$	$14\frac{1}{4}$	$18\frac{1}{4}$	Do. . . .	Do.



Head of Indian Gaur.

The GAUR or INDIAN BISON (*Bos [Bibos] gaurus*).

This splendid wild ox, the so-called bison of Anglo-Indian sportsmen, is the typical representative of a group of Oriental species nearly related to the domesticated ox, but presenting certain well-marked points of difference. Among these may be noted the shorter head and tail, the frequently elliptical section of the horns, and, above all, the presence of a more or less distinct ridge running from the withers to the middle of the back, where it terminates in a sudden step. In the gaur this ridge is strongly developed, and in the typical race the summit of the forehead forms a high arch between the horns, which bends forward to form a concave profile. With the exception of the white "stockings" common to all the members of the group, the colour of the gaur is uniform; but the much-flattened horns are of a peculiar yellowish-green tint at the base. The height of adult bulls at the shoulder usually varies from about 6 feet to 6 feet 4 inches, though

specimens of more than 5 feet 5 or 6 inches are not often killed ; it is, however, stated that a Nilgiri bull stood 6 feet 10 inches, while Kachar and Burmese bulls have been asserted to reach 7 feet at the withers.

Distribution.—The forest hill-tracts of Peninsular India, Assam, Burma, Siam, and the Malay Peninsula, as well as the forests along the outer Himalaya as far west as Nepal. South of the Ganges, where it has not been exterminated, the gaur inhabits suitable districts in Chutia Nagpur, Orissa, the Northern Circars, Central Provinces, Hyderabad territories, and all the Western Ghats. The Burmese race, or pyun (*B. g. readei*), is nearly black, with a throat-tuft ; and in the Malay race, or saladang (*B. g. hubbaki*), the arch on the crown of the skull is less developed, and may be absent.

A.—WILD RACES.

Widest outside.	Circumference at base.	Tip to Tip.	Widest inside.	Length on outside curve of longer horn.	Locality.	Owner.
44 $\frac{1}{4}$	20	42	41 $\frac{1}{4}$	23 $\frac{1}{2}$	Eastern Bengal	Capt. L. P. Haviland.
44 $\frac{1}{4}$	21	29 $\frac{1}{2}$	38 $\frac{1}{4}$	33 $\frac{1}{2}$	Burma . . .	J. McF. Petters.
43 $\frac{3}{4}$	17 $\frac{1}{2}$	34	39	30 $\frac{3}{4}$	Parambikolam .	G. Elliot Browning.
43	20	31	38	32	Cooch Behar . .	H. H. the Maharaja of Cooch Behar.
43	17	32 $\frac{1}{2}$	...	29 $\frac{1}{2}$	Coimbatore, S. India	P. Church.
42 $\frac{1}{2}$	18 $\frac{1}{2}$	25	33 $\frac{1}{4}$	33 $\frac{1}{2}$	Travancore . .	Capt. T. W. Greenfield.
42 $\frac{1}{2}$	19 $\frac{1}{2}$	31	35 $\frac{3}{4}$	31 $\frac{1}{4}$	Madras . . .	Col. T. J. R. Lucas.
42	18	34 $\frac{1}{2}$	37 $\frac{3}{4}$	29 $\frac{1}{2}$	Central Provinces	Hon. H. G. O. Bridgeman.
41 $\frac{1}{2}$	16	30	...	29	Assam . . .	A. J. Walter.
41 $\frac{1}{2}$	19 $\frac{3}{4}$	26 $\frac{1}{2}$	36	31	Mysore . . .	Capt. C. P. Graham.
41 $\frac{1}{4}$	20	32 $\frac{1}{2}$	36 $\frac{1}{4}$	30	?	J. F. Bryant.
41	18	24	...	33 $\frac{3}{4}$	Madura District	Bethnal Green Museum (J. D. Goldingham).
41	17 $\frac{1}{2}$	28 $\frac{1}{2}$	35	31 $\frac{3}{4}$	Central Provinces	W. J. Considine.
41	20	34 $\frac{1}{2}$	36 $\frac{1}{2}$	27	Siam . . .	J. H. Thurston.
41	19 $\frac{3}{4}$	37	...	27 $\frac{3}{4}$	Kalkerry, S. India	Col. W. E. Fairholme.
40 $\frac{1}{2}$	20	25	...	34 $\frac{3}{4}$	Vardi Mullay .	Baron von Massow.
40	19 $\frac{1}{2}$	28 $\frac{3}{4}$	34 $\frac{1}{2}$	31	Travancore . .	A. Lampard.
40	19 $\frac{1}{4}$	26	34 $\frac{1}{2}$	32	Burma . . .	A. E. English.
40	17	31 $\frac{1}{4}$	34	27 $\frac{1}{2}$	E. Madras . .	W. O. Horne.
40	15	33 $\frac{1}{4}$	...	26	Central Provinces	C. F. Egerton.
39 $\frac{3}{4}$	18 $\frac{1}{2}$	34 $\frac{1}{4}$	35 $\frac{1}{4}$	26 $\frac{1}{4}$	?	R. McD. Hawker.

Widest outside.	Circumference at base.	Tip to Tip.	Widest inside.	Length on outside curve of longer horn.	Locality.	Owner.
39½	20	25¼	33½	31	Anamalais	C. W. Wood.
39½	17	30¼	34½	28¼	?	Major F. C. Samborne-Palmer.
39½	20¼	31	33½	27½	?	Capt. E. W. Thompson.
39½	18½	22	32½	33½	?	A. M. Leake.
38¾	17½	25¾	32¾	30	?	A. H. Sharp.
38¼	17¾	28½	33½	27¾	Cooch Behar	H. R. Beaumont.
38	18	22½	33	31¾	Madras	S. Cox.
38	18	23¼	32	29	Burma	H. E. Beamish.
38	19	18	31	34½	?	Sir Edmund G. Loder, Bart.
38	19½	24	31½	31	?	Rev. H. C. B. Stone.
37¾	17¼	30¾	32	24¼	?	Capt. A. C. H. Trevor.
37½	20¾	33	33¼	25	Burma	Capt. T. A. Headlam.
37½	17¼	27½	32¾	25¾	?	G. Sandeman.
37½	18	19	32¼	31	?	Colonel Baillie.
37¼	18½	26½	31¾	28	Central Provinces	J. C. T. Fairweather.
37¼	20	25	31¼	29	Chutia Nagpur District	Lieut.-Col. J. W. Yardley.
37	17¼	31½	33	24	?	Duke of Sutherland.
36½	21½	22¼	29¾	28	Pahang	J. Scott Mason.
36½	17½	17	...	28	Mysore	Col. G. H. Evans.
36½	16	18	31	31¾	?	W. Evetts.
36½	18¼	26¾	...	26½	?	Lieut.-Col. R. H. Fraser.
36¼	18½	20¾	29¾	29½	Marutha	J. G. Heyder.
36¼	18¾	24½	30¾	27¾	Malay States	G. Hemmant.
36	17¼	23¼	29½	28	S. India	Capt. C. S. Timins.
36	...	21¼	31¼	24½	Malay States	H. E. Stewart.
♀ 31	14¾	20¾	26¼	24¾	?	Capt. E. H. Wildblood.
♀ 27	13¼	13	22	24	N. Travancore	British Museum (Hume Collection).

OWNER'S MEASUREMENTS.

...	20	...	...	40½	Belgaum	H. Murray.
46	20½	33	40	...	Malay States	H. Da. Prah.
45½	17½	36	39¾	33½	N. Travancore	G. E. Bewley.
44	20½	23	...	40	Wynaad	F. Ditmas.
43¾	18	33	38	31	Burma	G. H. Bell.
43½	17¾	28¾	...	...	Travancore	H.H. the Maharaja of Travancore.

RECORDS OF BIG GAME

Widest outside.	Circumference at base.	Tip to Tip.	Widest inside.	Length on outside curve of longer horn.	Locality.	Owner.
43	20 $\frac{1}{4}$	18 $\frac{3}{4}$	...	39 $\frac{1}{4}$	Salwin, Burma	Bombay Natural History Society's Museum.
43	17	30 $\frac{5}{8}$	...	29 $\frac{3}{4}$	?	K. J. K. Juntke.
42 $\frac{1}{8}$	18 $\frac{1}{4}$	...	34 $\frac{1}{4}$	30 $\frac{1}{4}$	Pegu, Burma	Capt. W. F. Brayne.
42 $\frac{1}{4}$	16 $\frac{3}{4}$	32 $\frac{3}{4}$	...	...	?	W. B. Drury.
42	22	29 $\frac{1}{2}$	...	...	Madras	C. W. G. Morris.
41 $\frac{1}{2}$	17	...	...	33	Burma	S. E. F. Jenkins.
39 $\frac{1}{2}$	20 $\frac{1}{2}$	28	...	27 $\frac{1}{2}$	Duars	E. T. Partridge.
38 $\frac{1}{2}$	20	23 $\frac{3}{4}$	32	...	S. Madras	Capt. S. H. Charrington.

N.B.—In the following specimens the maximum width is *inside* measurement.

Widest inside.	Circumference at base.	Tip to Tip.	Length on outside curve of longer horn.	Locality.	Owner.
39	17 $\frac{3}{4}$	28 $\frac{1}{2}$	29 $\frac{1}{2}$	Siam	A. Waley.
37 $\frac{1}{4}$	18 $\frac{1}{2}$	22	30 $\frac{1}{4}$	Travancore	A. T. Mackenzie.
36	17	26 $\frac{1}{4}$	27 $\frac{1}{2}$	Assam	L. Truninger.
36	15	26 $\frac{1}{4}$	26	Central Provinces	Major John Fuller.
35	17 $\frac{1}{4}$	20 $\frac{1}{4}$	27 $\frac{1}{2}$	Tezapore, Assam	A. Y. Thomson.
35	18	23	26	Burma	Capt. S. L. Robinson.
34 $\frac{3}{4}$	18	22 $\frac{1}{2}$	28	Assam	Hon. S. Tollemache.
34 $\frac{1}{2}$	18	23 $\frac{1}{2}$	33 $\frac{1}{8}$	Cooch Behar	H. H. the Maharaja of Cooch Behar.
34	18 $\frac{1}{4}$	20 $\frac{1}{4}$	27 $\frac{1}{2}$	Travancore	Lieut.-Col. the Hon. E. Baring.
34	15 $\frac{3}{4}$	24 $\frac{5}{8}$	24 $\frac{1}{2}$	?	Major H. De Prée.
34	19	27	24	Burma	W. F. Loftus-Tottenham.
33 $\frac{3}{4}$	18	23 $\frac{3}{4}$	25	Kanara	Lieut.-Col. G. J. Fitzgerald.
33 $\frac{1}{2}$	18	15 $\frac{3}{4}$	28 $\frac{1}{2}$	Travancore	Capt. H. L. Cottingham.
33 $\frac{1}{2}$	15	22	23	Assam	Col. E. T. Paul.
32 $\frac{3}{4}$	17 $\frac{1}{8}$	32 $\frac{1}{4}$	27 $\frac{7}{8}$	Central Provinces	Major C. S. Cumberland.
32 $\frac{3}{4}$	18 $\frac{1}{2}$	23 $\frac{3}{8}$	26	Do.	Major G. de H. Smith.
32 $\frac{1}{2}$	19	16 $\frac{1}{2}$	26	Do.	Major C. F. Pinney.
32 $\frac{1}{2}$	17 $\frac{1}{8}$	21 $\frac{3}{8}$	31 $\frac{3}{4}$	Travancore	British Museum (Hume Collection).
♀ 22	10 $\frac{1}{2}$	14 $\frac{5}{8}$	22	?	Major H. De Prée.

MEASUREMENTS OF ENTIRE SPECIMENS FURNISHED BY H. H. THE LATE MAHARAJA OF COOCH BEHAR.

SEX.	One horn round outer curves.	Horns, Tip to Tip, round outer curves.	Base of horn.	Between tips.	Widest splay.	Height at shoulder.	Height at the hump.	Total length of animal between sticks.	Length of body between sticks.	Girth just behind shoulder.	REMARKS.
			hds. ins.	hds. ins.	hds. ins.	ft. ins.	ft. ins.	ins.			
Bull	...	84	21	31 $\frac{1}{4}$	43	18 2 $\frac{1}{2}$	19 3	12 3	9 5	118	Record head shot Cooch Behar.
"	32 $\frac{1}{2}$	81 $\frac{3}{4}$	18 $\frac{1}{4}$	23 $\frac{1}{2}$	40 $\frac{3}{4}$	18 3 $\frac{1}{2}$	20 3	12 3 $\frac{1}{4}$	9 4 $\frac{3}{4}$	120	
"	30 $\frac{3}{4}$	78 $\frac{1}{2}$	19 $\frac{3}{8}$	23 $\frac{1}{2}$	39	18 3	19 3 $\frac{1}{2}$	12 2	9 5 $\frac{1}{2}$	120	
"	30 $\frac{1}{2}$	76 $\frac{1}{2}$	20 $\frac{1}{2}$	26 $\frac{1}{4}$	39	18 3 $\frac{3}{8}$	20 0 $\frac{1}{4}$	12 3 $\frac{3}{8}$	9 6 $\frac{1}{2}$	124	Record bull as regards bulk and height.
Cow	...	73 $\frac{1}{4}$	...	...	..	17 1 $\frac{1}{2}$	17 3	...	...	90	Record cow's head—looked like a bull a little way off.



Skull and Horns of Gayal. From a specimen bequeathed to the British Museum by the late Mr. A. O. Hume.

B.—DOMESTICATED BREED or GAYAL.

The gayal is a rather smaller animal than the wild gaur, nearly black in colour, with a large dewlap, and a straight line between the bases of the massive horns, which are but little divergent, curved upwards, nearly cylindrical in section, and of dark colour. The head is short, with the forehead broad and flat. It is a domesticated breed of the gaur, probably derived from the Malay and Tenasserim race of the latter.

Distribution.—Kept in a semi-domesticated condition by many of the hill-tribes of Assam, Chittagong, etc.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
17 $\frac{1}{4}$	17	41	?	British Museum.
15	11 $\frac{1}{2}$	26 $\frac{3}{8}$	?	Do.
14 $\frac{1}{2}$	13 $\frac{1}{2}$	28	Tenasserim . .	British Museum (Hume Collection). See illustration.

OWNER'S MEASUREMENTS.

22 $\frac{3}{4}$	12	42	Assam . . .	E. C. Stuart Baker.
16	14 $\frac{1}{2}$	30 $\frac{1}{2}$	Mishmi . . .	Bombay Natural History Society.
14	14	...	?	Indian Museum.



Head of Tsaine or Burmese Bantin. From a specimen shot by
Maj.-Gen. H. D'U. Keary.

The BANTIN or TSAINE (*Bos* [*Bibos*] *sondaicus*).

This member of the gaur group departs somewhat less widely from the normal type of cattle than does the gaur, the ridge on the withers being less developed, and the horns almost cylindrical. The cows are always reddish coloured, although the bulls may be black, and in the latter sex at least there is typically a large white patch on the rump. Very distinctive of the species is the presence of a horny shield on the crown of the head connecting the bases of the horns. Height at shoulder, about 5 feet 9 inches. The humped cattle of India are probably domesticated derivatives of the bantin.

Distribution.—Burma, the Malay Peninsula, Siam, Borneo, Java, Bali, and perhaps Sumatra. Several distinct races of the bantin are distinguishable. First, the true bantin, or Java ox (*B. sondaicus typicus*), from Java, and perhaps some of the other Malay islands and the Peninsula. In this race the old bulls become of a deep blackish-brown colour. The same tint is characteristic of the adult male Bornean bantin (*B. sondaicus lowi*), but the horns are directed more uprightly. A third race is the tsaine (*B. sondaicus birmanicus*), which inhabits Burma, and may extend northwards to Manipur. Old bulls generally retain the fawn-colour of the cows

throughout life, showing more or less of grey on the head, but it is stated that very old individuals are occasionally nearly black. The Siamese tsaine, which, in at least some individuals, is profusely speckled with white, has been named *B. s. porteri*. Another race is represented by the Cochin China tsaine, of which the general colour is orange.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
34½	11⅞	21	32½	36⅜	Cochin China . .	H. R. H. the Duc de Montpensier.
31½	16½	21½	31¼	36¼	Upper Burma . .	H. W. James.
30	16¼	24½	32	...	Do. . .	Capt. H. W. Marsden.
29	13	24¾	33¾	37¾	Do. . .	Capt. W. R. Savage.
29	16	28	34¾	...	Burma . . .	H. L. P. Walsh.
28½	17¾	28½	34	...	Do. . .	W. O. Hannyngton.
28½	16¾	40¾	40¾	...	Do. . .	Capt. T. A. Headlam.
28	15	19¾	29½	35	Do. . .	Capt. L. E. Burne.
27¾	14¾	19½	30½	35	Do. . .	Capt. J. M. Stewart.
27¼	15	34¼	38¾	42⅝	Do. . .	Maj.-Gen. H. D'U. Keary. (See illustration, p. 445).
27	14½	20¼	28½	...	Upper Burma . .	British Museum (R. McD. Hawker).
27	17¾	24¾	32¾	...	Do. . .	J. McF. Petters.
27	16¾	23¾	29¾	34¼	Do. . .	P. Grace.
26½	16½	21½	28	...	Java . . .	Sir Edmund G. Loder, Bart.
26½	14¼	24½	32	...	Lower Burma . .	S. F. Hopwood.
26½	16	22	30½	35½	Do. . .	T. Norman.
26	16¾	32	35	39¾	Burma . . .	Major C. P. Gunter.
25¾	16⅝	20⅞	26¾	...	Siam . . .	H. C. V. Hunter.
25¾	17⅝	13	24	...	Burma . . .	Major C. S. Cumberland.
25	15	22¾	28	32¾	Java . . .	Hon. Walter Rothschild.
24½	16	21½	28½	33	Do. . .	Capt. L. P. Haviland.
24¼	14¾	22	28	32¼	Do. . .	M. Maxwell.
24	16	25	30	33½	?	E. V. Ellis.
23¾	14	21½	11	26½	Java . . .	British Museum.
23	16¾	30	29¾	...	Do. . .	C. W. A. Buma.
♀ 23	12½	16¼	25	...	Upper Burma . .	R. McD. Hawker.
♀ 22½	13½	15½	23	...	Java . . .	C. W. A. Buma.
22	14¼	11½	20¼	24½	Borneo . . .	H. P. Perry.

OWNER'S MEASUREMENTS.

33½	17	26⅞	35	...	Upper Burma . .	Lieut.-Col. H. S. Wood.
30½	15¾	27¾	36	...	Do. . .	S. E. F. Jenkins.
30	17	...	...	...	Java . . .	Indian Museum.
30	15½	20	38½	...	Burma . . .	Bombay Natural History Society.
29	15½	24	33	...	Do. . .	J. P. Cook.
28½	17½	30½	36	...	Do. . .	Lieut.-Col. G. H. Evans.
28½	15	26½	36¾	...	Do. . .	H. Van Son.
27½	18	29½	...	40½	Do. . .	J. E. F. Marshall.
27½	15	23½	32⅝	37¾	Do. . .	Capt. C. H. Elliot.
27¼	14¾	24¼	33¼	37¼⅝	Do. . .	Capt. W. F. Brayne.
24	16½	24	28¾	...	Borneo . . .	P. C. Brackenbury.



Skull and Horns of Lake Chad Ox. Presented to the British Museum by Capt. A. C. Aubin.

DOMESTICATED CATTLE (*Bos taurus* and *B. indicus*).

The ordinary domesticated cattle of Europe, such as the Spanish fighting bull, the Kerry, Pembroke, Highland, and Jersey breeds, are the descendants of the primitive wild ox, or aurochs (a name frequently misapplied to the bison) of Europe and North Africa (*Bos taurus primigenius*), now completely extinct in the wild state, although it survived in Poland till the sixteenth century. On the other hand, some of the large light-coloured cattle of Southern Europe, such as the draught-oxen of Northern Spain, and the cattle of Italy, Greece, and Hungary, appear to be derived from the zebu, although some have been crossed with North European cattle. Their horns are unlike those of the aurochs. The zebu or humped cattle of India and the Galla and other large-horned cattle of Africa evidently represent a distinct species (*Bos indicus*), probably descended from the bantian. To the same species belong the Ankoli cattle of Uganda and the ancient Egyptian long-horned breed, as well as the trek oxen of the Cape, in all of which the hump is obsolete.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
81½	18½	103½	...	Ngamiland	The late W. C. Oswell.
-?	17	100	124	Do.	A. Ohlsson.

- Owner's measurements.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
57	17	72	...	South Africa	W. A. Simpson Hinchliffe.
57	19½	82	...	Bechuanaland	Sir Edmund G. Loder, Bart.
56½	17½	76¼	...	South Africa.	R. A. Cooper.
56	...	101	...	Ngamiland	British Museum.
52½	25½	40	...	Bahr-el-Ghazal	British Museum (Capt. F. W. Woodward).
50	18	93	...	Natal	British Museum (Col. H. W. Feilden).
48¾	16¾	67	...	German E. Africa	Berlin Museum.
47	15⅝	21⅞	...	Gallaland	British Museum (Sir H. Salt).
42¾	23⅝	22⅞	...	Borneo (N. W. Africa).	British Museum (Capt. Clapper-ton, R.N., and Col. Denham).
41¾	14	52¼	...	Madagascar	Bethnal Green Museum.
41½	27	45½	...	N. Nigeria	British Museum (Capt. A. C. Aubin). (See illustration, page 447.)
41½	14½	...	...	Ankoli	British Museum.
40¼	12¼	60¾	...	Vienna (Polish Bull)	Do.
39¾	15	51¼	...	Uganda	C. Craig.
38¾	12⅝	53⅞	...	Hungary	Dr. Albert von Stephani.
38½	10½	54¾	...	Italy	Bethnal Green Museum.
37¾	12	60	...	Cape of Good Hope	British Museum.
31½	10¼	23¾	...	Gallaland	A. E. Butter.
31	18	32½	...	Nigeria	P. M. Dwyer.
30¾	12¾	35	...	Spain	British Museum.
29¾	11⅞	28⅞	...	Gambia	British Museum (13th Earl of Derby).
24½	8¾	15¼	...	Mysore	British Museum.
17½	10¾	30½	...	Buenos Aires (Niata Breed)	British Museum (G. Claraz).

— Owner's measurements.

The following specimens belong to British white park-cattle, which, although now half wild, are the descendants of domesticated breeds, probably nearly allied to the Pembroke :—

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
18½	9½	36½	...	Chartley Park	Hon. Walter Rothschild.
18½	7	34¾	...	Do.	Major James Grant.
18½	10¾	20	21⅞	Chillingham Park	British Museum (Earl of Tankerville).
♀ 18¼	7	10½	15¾	Do.	Do.
15¼	9⅝	17¾	18⅞	Do.	British Museum (Duke of Hamilton).
15	7½	20¾	...	Chartley Park	Capt. G. W. Hill, R.N.

The HIPPOPOTAMUS (*Hippopotamus amphibius*).

<i>Gumari</i> , Abyssinian.	<i>Robi</i> , Galla.	<i>Jir</i> , Somali.
<i>Ikubu</i> , Basuto.	<i>Dorina</i> , Hausa.	<i>Kiboko</i> , Swahili.
<i>Zee-koe</i> , Boer.	<i>Macow</i> , Masai.	<i>Imvubu</i> , Swazi.
<i>Mourvu</i> , Chilala.	<i>Tumunto</i> , M'Kua.	<i>Moubu</i> , Waganda.
<i>Dul</i> , Danakil.	<i>Girinti</i> , Sudanese.	<i>Chivhubwe</i> , Chila.

Such a familiar animal as the uncouth and unwieldy hippopotamus—the largest member of the swine group—requires but little in the way of description here. It is distinguished from the pigs and warts-hogs by the broad and rounded muzzle—so unlike the disc-shaped snout of the latter—and consequently typifies a family by itself. The tusks and molars are likewise of a totally different and distinctive type; while the feet have four sub-equal toes with symmetrical, rounded nails. In all its organisation the hippopotamus is beautifully adapted for a semi-aquatic life; the eyes and nostrils forming the highest points of the head, and thus allowing it to come up and breathe with the least possible exposure of its body. The weight of a full-grown bull hippo is at least three tons, and the total length about 14 ft. Height at shoulder, about 3 ft. 10 ins. Hippos are chiefly hunted for the sake of their hides, which are manufactured into sjamboks, or raw-hide whips. Their tusks also have a certain commercial value, although not so great as formerly, when they were employed for artificial teeth.

Distribution.—Formerly this animal frequented most of the rivers of Africa south of the Sahara, but it has long since been exterminated from the lower reaches of the Nile, and is daily becoming scarcer in the South African rivers. In the Zambesi, where it is less easily attacked than in the smaller rivers of Mashonaland, it is still abundant, as it also is in the Chobi and neighbouring rivers, as well as in Lake Ngami; and even in the lower reaches of the Orange River a few are still to be met with. North of the Zambesi these animals occur in great numbers.

Lower Curved Tusks, or Canines.

Length round outside curve.	Circum- ference.	Weight.	Locality.	Owner.
6½	7¼	...	E. Africa . . .	Sir F. J. Jackson.
¹ 5½	6¾	...	B.E. Africa . . .	Dr. G. A. Macdonald.

¹ Malformed.

RECORDS OF BIG GAME

Length round outside curve.	Circumference.	Weight.	Locality.	Owner.
41½	8¼	...	S.E. Africa . . .	Hon. Walter Rothschild.
¹ 41	8	...	Tana River, East Africa .	J. Benett Stanford.
² 37½	8¼	...	Shiré River . . .	Capt. A. T. Hunt, R.N.
35	9	8 lbs. } 7¾ ,, }	Sudan . . .	Capt. J. A. Pollock.
34¾	9¼			
33	9½	...	N.W. Rhodesia . . .	K. C. North.
32	9½	...	Lualaba, Central Africa .	S. L. Hinde.
31¾	6¾	...	B.C. Africa . . .	F. W. Bowman.
31¾	10¾	...	?	The late Sir Clement Hill.
31¾	9¾	...	?	Sir Edmund G. Loder, Bart.
31¼	9	...	?	E. L. Fletcher.
31	10	...	N.E. Rhodesia . . .	G. M. E. Leyer.
30¾	9¼	...	Abyssinia . . .	D. P. MacGillivray.
30½	7¾	...	Sierra Leone . . .	Major G. S. McLaughlin.
30	9	...	Shiré River . . .	Surgeon J. Dowson, R.N.
30	9	...	Zambesia . . .	E. W. Tompson.
30	9	...	British Central Africa .	R. M. Irwin.
28¾	8¼	...	Gold Coast . . .	H. J. Hobbs.
² 22	9½	...	N. Nigeria . . .	F. B. Shafto.

OWNER'S MEASUREMENTS.

¹ 51	9	...	S.E. Africa . . .	J. Lamont.
² 38	...	...	Nyasaland . . .	Major P. W. Forbes.
30½	8	...	Lower Zambesi . . .	H. M. von Archer.
29½	...	...	N. Nigeria . . .	Capt. C. F. Watson.

Lower Straight Tusks, or Incisors.

21½	7¾	...	Abyssinia . . .	D. P. MacGillivray.
20¾	6¾	...	Lower Zambesi . . .	Sir Edmund G. Loder, Bart.
19½	7½	3¾ lbs. } 3½ ,, }	Sudan . . .	Capt. J. A. Pollock.
19	7½			
18½	6½	...	Nigeria . . .	Major J. A. Burdon.
18¼	7¼	...	N.W. Rhodesia . . .	K. C. North.

¹ Malformed.² Malformed and protruding from jaw.³ Protruding from gum.



Young Pigmy Hippopotamus.

PIGMY HIPPOPOTAMUS (*Hippopotamus* [*Chœropotamus*] *liberiensis*).

The pigmy hippopotamus of Liberia and the adjacent parts of the West Coast, measures only about 6 feet in length, and has habits approaching those of a pig. It also differs from the typical species by having, as a rule, only one pair of incisor teeth between the tusks, in place of two pairs, as well as in the relative size of the head and the conformation of the limbs.

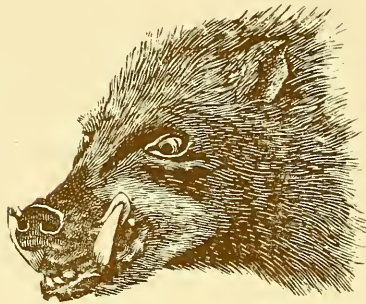
Measurements of a specimen shot near Salon, on the Mauwa River, about 2 miles from the Liberian frontier :—

Length from nose to tip of tail	. . . . .	78½ ins.
Height at withers	. . . . .	37 ins.
Girth behind shoulders	. . . . .	56 ins.
Weight about	. . . . .	600 lbs.
Curved tusks measured	3½ and 3¾ ins. (projecting from skull); girth	. . . . . 3¾ ins.

Skull measurements of a Liberian specimen in the Tring Museum :—

Length	. . . . .	13⅛ ins.
Width	. . . . .	7¾ ins.
Weight	. . . . .	5 lbs.

Tusks. Total length.	Girth.	Locality.	Owner.
8	2⅝	{ Skarcies River, Karene District, Sierra Leone }	Capt. E. J. Carter.
8	2¾		



Head of Wild Boar.

The WILD BOAR (*Sus scrofa*).

The European wild boar is a large coarse-haired species usually with an under-coat of woolly fur, no warts on the face, and standing from about 33 to 36 inches at the shoulder. It often lacks the crest or mane of long black bristles running from the nape down the back in its Indian cousin. Hungarian and Russian wild swine represent a race (*S. scrofa attila*) distinguished by its large size; and several other local races have been named.

A Spanish boar killed by H.R.H. the Duc d'Orléans weighed 302 lbs.

Distribution.—Europe, North Africa, and South-Western and Central Asia.

Tusks.

Length on outside curve.		Length of tusk out of gum.	Locality.	Owner.
Right.	Left.			
13	Albania	Lord Brackley.
12	Do.	Lord Carnegie.
9 $\frac{3}{8}$	Andalucia	H.R.H. the Duc de Montpensier.
9 $\frac{3}{4}$	Asia Minor	Admiral Sir Michael Culme-Seymour, Bart.
¹ 9 $\frac{5}{8}$	Caucasus	Prince E. Demidoff.
9 $\frac{1}{2}$	Do.	Do.
9	Albania	Sir Reginald Cathcart, Bart.
8	2 $\frac{1}{2}$	...	Russia	Count J. Potocki.

OWNER'S MEASUREMENTS.

13	...	...	New Zealand (introduced) .	G. W. Campbell.
11 $\frac{1}{2}$	...	...	Caucasus	Col. Veernhof.

¹ Weight, 372 lbs.

Length on outside curve.		Length of tusk out of gum.	Locality.	Owner.
Right.	Left.			
11 $\frac{1}{4}$	Caucasus	Major Robert Finnie.
11	New Zealand (introduced) .	H. J. Mussen.
8 $\frac{3}{4}$	Hungary	Count G. Andrassy.
8 $\frac{5}{8}$	Algeria	Sir Edmund G. Loder, Bart.
¹ 8 $\frac{1}{2}$	8 $\frac{1}{8}$	3	Near Bona, Algeria	Viscount Edmond de Poncins.
8 $\frac{1}{8}$	Algeria	Lieut.-Col. J. Marriott.

¹ Weight, 275 lbs. clean.

INDIAN WILD BOAR (*Sus cristatus*).

This species is allied to the typical wild boar, from which it is distinguished by the strong development of the dorsal crest and the rather more complex character of the last lower molar tooth. Other and more distinct species, such as *S. vittatus*, *S. verrucosus*, and the long-snouted *S. barbatus*, inhabit the Malay countries.

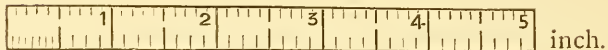
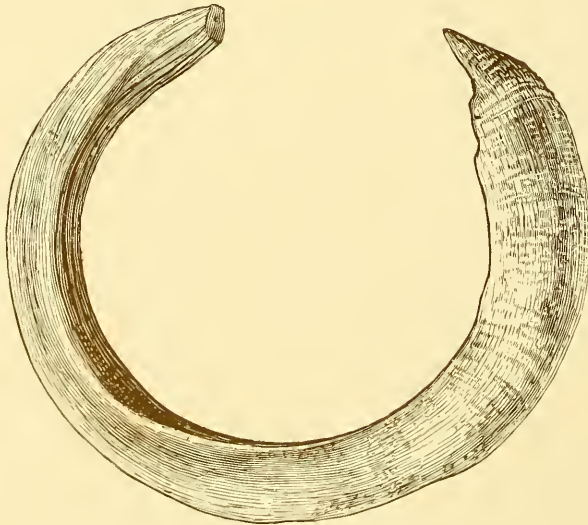
Length on outside curve.	Weight.	Locality.	Owner.
12 $\frac{5}{8}$...	Gosrama	V. N. Hickley.
12 $\frac{1}{2}$...	Upper Assam	J. D. Berrington.
11 $\frac{1}{8}$...	?	C. F. Knyvett.
10 $\frac{5}{8}$...	Kotri Dun	T. H. Carlisle.
10 $\frac{3}{8}$...	Assam	N. Williamson.
10 $\frac{1}{4}$...	Meerut	A. F. Brooke.
9 $\frac{3}{4}$...	?	Dr. Travers.
9 $\frac{1}{2}$...	Burma	Langford Whitehouse.
9 $\frac{1}{2}$ } 9 }	...	?	Major C. Gough.
9 $\frac{3}{8}$...	North Kanara	Lieut.-Col. L. L. Fenton.
9 $\frac{3}{8}$...	Central Provinces	Lieut.-Col. J. S. Ashby.
9 $\frac{1}{8}$...	Ceylon	Major F. H. N. Pym.
9	182 lbs.	Jhelam	Capt. W. F. Brayne.
8 $\frac{3}{4}$...	Oudh	J. C. Faunthorpe.
8 $\frac{3}{4}$...	Roorkee	C. Bovill.
8 $\frac{5}{8}$...	Meerut	Capt. S. H. Charrington.

OWNER'S MEASUREMENTS.

Length on outside curve.	Weight.	Locality.	Owner.
14 ³ / ₄	...	Behar, Purneah	Capt. L. Cheape.
14 ³ / ₄ (malformed)	...	Purneah	H. R. P. Carter, recorded in <i>Field</i> , 19th January 1895. (See illus- tration.)
14 ³ / ₈	...	Hills above Jamu	Col. Sir Neville Chamberlain.
10 ⁵ / ₈	...	North Kanara	Bombay Natural History Society.
10 ¹ / ₂	...	Burma	Mrs. O. F. Wheeler-Cuffe.
10 ¹ / ₂	...	?	Meerut Tent Club.
10	...	Ceylon	H. Storey.
9 ³ / ₄	...	?	Meerut Tent Club.

The following specimen belongs to one of the above-mentioned Malay species.

Length on outside curve.	Weight.	Locality.	Owner.
11	...	North Borneo	C. P. Brook.



Abnormal Lower Tusk of Wild Boar.

The BUSH-PIG (*Potamochoerus chæropotamus*).

Bosch-vark, Cape Dutch.

Ingulubi, Swazi and Zulu.

The bush-pigs, or river-hogs, of Africa and Madagascar form a peculiar group of swine characterised by having only 42, in place of 44, teeth, small tusks, and the presence in old boars of two pairs of ridge-like prominences on the sides of the face, the lower one being on the sheath of the tusk. The ears are surmounted with tufts of long hair. The various species are best distinguished by the characters of their skulls, colour forming an uncertain guide. The Cape bush-pig, or *bosch-vark*, in which the upper prominences on the skulls of old boars are convex and raised above the line of the nose, is generally grey, although scarcely any two specimens exhibit the same colours, some being brownish black variegated with white, and others almost entirely light reddish brown or rufous, without any white markings. In British Central Africa they are invariably reddish, and form a distinct race, *P. c. nyasæ*. Height at shoulder, about 31 inches; weight, 35 lbs. Lower tusks average 6 to 7 inches long.

Distribution.—South and South-East Africa.

Length.		Exposed from gum.	Locality.	Owner.
Upper.	Lower.			
3½	6½	...	N.E. Rhodesia . . .	Hon. Walter Rothschild.
...	...	4¾	P.E. Africa . . .	F. Vaughan Kirby.
Height at shoulder.		Weight.		
-2¾		35 lbs.	Shiré River, British Central Africa	Dr. Percy Rendall.

- Owner's measurements.

The RED RIVER-HOG (*Potamochoerus porcus*).

In this species the prominences on the skulls of adult boars are flat-topped, and do not reach above the line of the nose; the colour is always some shade of rufous, either shining brownish red with a tinge of yellow, or dark reddish yellow with black on the forehead, ears, and limbs, and the mane of the back, part of the margins of the ears, the tips of the long tufts of hairs with which they are surmounted, and streaks above and below the eyes white. Weight, 250-260 lbs., Nigeria (Major J. B. Cockburn).

Distribution.—West Africa.



Head of Forest-Hog. Shot by Lieut.-Col. J. W. Yardley.

The FOREST-HOG (*Hylochoerus meinertzhageni*).

A huge black pig serving in some respects to connect the bush-pigs with the wart-hogs, although markedly distinct from both. The boars have a large fungus-like warty growth below each eye. Height at shoulder, 30 ins.; weight, 265 lbs. clean (Capt. F. L. Archer-Houblon).

Distribution.—Kenia, the Nandi Forest, and Abyssinia; represented by a local race in the Eastern Cameruns, and a third in the Ituri Forest.

Upper Tusks.

Total Length.	Protruding from gumi.	Circumference.	Locality.	Owner.
12 $\frac{1}{8}$	...	4 $\frac{5}{8}$	Kenia	G. St. J. Orde Browne.
...	10 $\frac{7}{8}$	5 $\frac{1}{4}$	Mount Kenia	R. Kenyon-Slaney.
10 $\frac{1}{4}$	}	4 $\frac{5}{8}$	Nandi Forest	Hon. Walter Rothschild.
9 $\frac{3}{4}$				
...	8 $\frac{1}{2}$	4 $\frac{3}{4}$	Mount Kenia	Lieut.-Col. J. W. Yardley.
...	8 $\frac{1}{4}$	5 $\frac{1}{4}$	Do.	British Museum.
...	7 $\frac{1}{2}$	4 $\frac{1}{4}$	Do.	E. B. Horne.
...	7 $\frac{1}{2}$	5 $\frac{1}{4}$	Do.	G. C. Slacke.

Lower Tusks.

9 $\frac{7}{8}$	...	2 $\frac{5}{8}$	Kenia	G. St. J. Orde Browne.
9	}	3 $\frac{1}{2}$	Nandi Forest	Hon. Walter Rothschild.
8 $\frac{1}{2}$				
...	6 $\frac{3}{4}$	3 $\frac{1}{2}$	Do.	British Museum.
...	4 $\frac{3}{4}$	3	Mount Kenia	G. C. Slacke.
...	5 $\frac{3}{4}$	3	Do.	Lieut.-Col. J. W. Yardley.
...	5 $\frac{1}{8}$	2 $\frac{3}{4}$	Do.	R. Kenyon-Slaney.
...	3 $\frac{3}{4}$	2 $\frac{1}{4}$	Do.	E. B. Horne.



Tusks of Wart-Hog in American National Collection.

The WART-HOG (*Phacochoerus æthiopicus*).

Bango or *Nguruwi*, Swahili.

Hallūf, Sudani.

Ikulubi, Basuto.

Indaigazana, Swazi and Zulu.

Karkari, Somali.

Ngolobwi, Barotsi and Ngami.

Njiri or *Injiri*, Chilala and Chibisa.

Vlak-vark, Boer.

Gado and *Darunga*, Hausa.

Ngron, M'Kua.

Shaukoli, Chila.

For downright ugliness the African wart-hog is hard to beat, and as it is well armed and possesses a bad temper, it is in all respects an undesirable acquaintance. The name is derived from the presence of two pairs of wart-like protuberances on the sides of the face between the eyes and the tusks; the head itself being characterised by the disproportionate length and flatness of the face. Unlike typical pigs, the stout upper tusks are longer than the lower pair; the inferior surfaces of their basal halves being worn to smooth facets by the points of the latter. Another peculiarity of the upper tusks is that they have no enamel, except at the extreme tips, which are soon worn off by use. The last molar teeth of each jaw, which, together with the tusks, are often the only teeth remaining in very old animals, are large and tall-crowned, consisting of a number of closely-packed cylindrical columns of enamel, which, when worn, present a characteristic pattern.

This type of tooth is quite unlike that of ordinary pigs, in which the last molars are low-crowned and simple. Except along the neck and back, where it carries a mane of bristly hair, the skin is nearly naked; and the young differ from those of ordinary pigs in being neither striped nor spotted. Height at shoulder, 30 inches. Weight (Capt. R. Meinertzhagen), 210 lbs.

Distribution.—The wart-hog is typically an inhabitant of South and South-East Africa. Pigs of the same genus extend, however, right through East and Central Africa to Abyssinia; those from the latter country forming a local race (*P. æthiopicus africanus*). Wart-hogs, possibly from their habit of going to ground when pursued, are but seldom hunted with the spear; “pig-sticking” being, in fact, a sport practically unknown in Africa. The lower tusks seldom exceed 6 inches on the front curve.

Upper Tusks.

Outside spread.	Length on outside curve.	Length exposed from gum.	Locality.	Owner.
...	22 $\frac{1}{8}$	21	Uganda . . .	Rev. A. B. Fisher.
...	22	...	?	J. N. Coute.
...	...	16	South Africa . . .	W. A. Simpson Hinchliffe.
34	...	15 $\frac{5}{8}$	Do. . . .	Sir Edmund G. Loder, Bart.
...	...	15 $\frac{1}{2}$	British Central Africa .	A. J. Swann.
...	...	14 $\frac{1}{2}$	N.E. Rhodesia . . .	H. Cookson.
...	17 $\frac{3}{8}$	15 $\frac{1}{2}$	East Africa . . .	R. S. Meikle.
...	17 $\frac{1}{4}$	...	Portuguese Nyasa . . .	C. F. Tristram.
...	16 $\frac{1}{2}$	12 $\frac{1}{2}$	East Africa . . .	Capt. the Hon. O. H. Stanley.
...	16 $\frac{1}{2}$	...	Do. . . .	Capt. V. C. de Crespigny.
...	15 $\frac{1}{2}$	15 $\frac{5}{8}$	N. Nigeria . . .	Capt. C. F. Watson.
...	15 $\frac{3}{8}$	15	East Africa . . .	A. J. A. Douglas.
...	15 $\frac{1}{4}$	13	Somaliland . . .	Major K. L. W. Mackenzie.
...	15 $\frac{3}{8}$	...	N.E. Rhodesia . . .	F. H. Melland.
...	...	13 $\frac{3}{4}$	S. Rhodesia . . .	C. W. Adams.
...	...	13 $\frac{5}{8}$	East Africa . . .	Mrs. J. E. R. Oldfield.
...	15	13 $\frac{1}{2}$	British Central Africa .	R. H. Storey.
...	14 $\frac{3}{4}$	...	Do. . . .	John Yule.
...	...	12 $\frac{3}{8}$	Do. . . .	Capt. C. J. Murray.
...	14 $\frac{3}{8}$	12	Do. . . .	Dr. J. E. S. Old.
...	...	12 $\frac{1}{4}$	Sudan	Lord Desborough.
...	14	11 $\frac{1}{4}$	Do. . . .	Capt. A. C. Jeffcoat.
...	13 $\frac{7}{8}$	11 $\frac{5}{8}$	N. Nigeria . . .	Capt. W. H. Wilkin.
...	13 $\frac{1}{4}$	...	Somaliland . . .	Major B. R. M. Glossop.
...	...	13 $\frac{1}{8}$	East Africa . . .	Walter Jones.
...	...	13	South-East Africa . . .	F. C. Selous.
...	...	12 $\frac{1}{2}$	East Africa . . .	Major H. W. Stevens.
...	...	12 $\frac{1}{4}$	Do. . . .	Percy C. Madeira.
...	...	12	N.W. Rhodesia . . .	J. Ripley.
...	...	12	East Africa . . .	C. W. Turner.
...	...	11 $\frac{5}{8}$	?	J. Kingdon.
...	...	11 $\frac{1}{2}$	N.E. Rhodesia . . .	P. M. Stewart.

Outside spread.	Length on outside curve.	Length exposed from gum.	Locality.	Owner.
...	...	11½	East Africa . . .	Gorham Brooks.
...	...	11¼	Do.	B. Dominick.
...	...	11	N.E. Rhodesia . . .	Sir Philip Brocklehurst, Bart.
...	...	11	?	R. B. Loder.
...	...	11	East Africa . . .	F. Santos Saurez.
...	...	10¾	Do.	Major H. B. Dalgety.

OWNER'S MEASUREMENTS.

37⅞	20	16½	South Africa . . .	American National Collection. (See illustration, p. 457.)
...	27 } 26 }	...	Annesley Bay . . .	Capt. Ralph Berners, R.N.
...	25	...	British East Africa . . .	C. S. Mann.
...	...	16½	S. Nigeria	E. A. Martin.
...	...	11½	Angola	W. C. Neilson.

Lower Tusks.

...	11½	...	Somaliland	Major K. L. W. Mackenzie.
...	9½	...	Do.	J. D. Inverarity.

- Owner's measurements.



Modelled in the Rowland Ward Studios.

Head of Wart-Hog.



Head of Babirusa.

The BABIRUSA (*Babirusa celebensis*).

Pig-deer (to translate the Malay name) are not the least notable of several remarkable animals restricted to Celebes and Boru; the peculiar form and position of the upper tusks of the boars rendering them almost comparable to horns. Unlike those of other pigs, in which they curve upwards from the sides of the lips, the upper tusks pierce the skin of the upper part of the snout, and, as they are not worn by the lower pair, attain extraordinary dimensions. Both pairs are quite devoid of enamel, the lower ones growing from the sides of the jaw in the ordinary manner. The cheek-teeth are somewhat less numerous than in ordinary pigs. In other parts of their organisation babirusas are, however, very like the latter, although the nearly naked skin of *B. celebensis* is of a coarse and rugged nature, being almost comparable to the bark of a tree. The height at the middle of the back, the highest point of the animal, is about 42 inches. Unlike the rest of its tribe, the female babirusa produces only a pair of young at a birth, which are of the same uniformly slaty hue as their parent. Babirusas are confined to the islands of Celebes and Boru, where they afford good sport to the natives, who drive them into nets and then spear them. The Boru species (*B. alfurus*) is clothed with greyish hair, and also differ in the character of the skull and tusks from the Celebes *B. celebensis*.

Dr. Guillemard, in the *Cruise of the "Marchesa,"* recorded the following weights and dimensions:—

Weight, male, 128 lbs. ; female, 85 lbs.

Height at shoulder, $27\frac{1}{2}$ ins. ; female, $25\frac{1}{2}$ ins.

Tusks.

Upper.	Length.	Lower.	Owner.
	$16\frac{3}{4}$	$13\frac{1}{2}$	Rowland Ward.
	$14\frac{3}{4}$	12	M. Maxwell.

OWNER'S MEASUREMENTS.

17	...	H. Van Son.
$14\frac{1}{2}$	...	Dr. F. H. H. Guillemard.
$13\frac{1}{4}$	15	Imperial Museum, Vienna.
11	$8\frac{3}{4}$	Dr. Albert von Stephani.



Record Horn of Great Indian Rhinoceros. Shot by the late T. Briscoe.

The GREAT INDIAN RHINOCEROS (*Rhinoceros unicornis*).

In addition to being the giant among its Asiatic kindred and possessing only a single horn, this species is specially characterised by the form of the folds in its hide, and the large tubercles on the fore- and hind-quarters, which look as though the skin had been fastened to the body by means of rivets. Folds before and behind the shoulder mark off one large triangular shield on each side, while another fold before each thigh separates a large rump-shield; the saddle-shaped body-shield being defined by the fold behind the shoulder and the one in front of the thigh, both of which extend across the back. Very characteristic, too, are the great folds which form heavy rings of skin round the neck. Although the tubercles are largest on the fore- and hind-quarters, they also occur on other parts of the body. Height at shoulder, from 5 feet 8 inches to over 6 feet; girth behind shoulder, 105 inches. Weight of living animal, 1010 lbs. (*New York Zool. Soc.*).

Distribution.—The Assam plain and the Tarailand of Nepal and some of the adjacent territories. Formerly this rhinoceros was found over the greater part of the Indian peninsula, as attested by fossil remains. There is evidence of the occurrence of a more or less nearly related rhinoceros, apparently with two horns, in the Singpu district of Upper Burma.

Length on front curve.	Circumference.	Weight.	Locality.	Owner.
24	24 $\frac{3}{4}$	...	Assam . . .	British Museum (the late T. Briscoe).
19 $\frac{1}{8}$	22 $\frac{2}{3}$	...	Assam (?) . . .	Ipswich Museum.
18 $\frac{2}{3}$	23 $\frac{1}{4}$	4 lbs. 9 oz.	Assam . . .	D. H. Felce.
♀ 18	16	...	Do. . . .	The late M. H. Logan.
16 $\frac{2}{3}$	...	...	Belsire, Assam . . .	W. C. Sherwill.
♀ 16 $\frac{1}{4}$	...	...	Cooch Behar . . .	H.H. the Maharaja of Cooch Behar.
♀ 16	...	3 $\frac{1}{2}$ lbs.	Nowgong, Assam . . .	L. Fabre Tonnerre.
15	22 $\frac{2}{3}$	...	Nepal . . .	Dr. T. G. Longstaff.
14 $\frac{1}{4}$	21	...	Assam . . .	Dr. W. P. Y. Bainbrigge.
♀ 14	22 $\frac{7}{8}$	4 $\frac{1}{2}$ lbs.	Nowgong, Assam . . .	L. Fabre Tonnerre.
13 $\frac{1}{2}$	22	...	Nepal . . .	His Majesty The King.
13	20	...	Do. . . .	Capt. M. L. Pears.
13	20 $\frac{1}{2}$	...	Assam . . .	G. A. Dolby.
13	20 $\frac{2}{4}$	...	Do. . . .	W. A. Doxat.
12 $\frac{2}{4}$	23	...	Do. . . .	H. B. Firman.
12 $\frac{1}{2}$	21 $\frac{5}{8}$	...	Do. . . .	H. C. Holland.
12 $\frac{1}{2}$	21	...	?	J. W. Grieve.
12	21 $\frac{1}{2}$	...	Cooch Behar . . .	A. Ezra.
12	21 $\frac{3}{4}$	...	Nepal . . .	Major Lord Charles M. Nairne.
11 $\frac{2}{4}$	19 $\frac{2}{4}$	...	Do. . . .	H.S.H. the Duke of Teck.

OWNER'S MEASUREMENTS.

21 $\frac{1}{2}$	24 $\frac{3}{4}$	...	Nepal . . .	Lord Curzon of Kedleston.
13 $\frac{7}{8}$	...	...	Cooch Behar . . .	H.H. the Maharaja of Cooch Behar.
¹ 13	...	...	Do. . . .	Do.
13	...	...	?	Indian Museum, Calcutta.
12 $\frac{1}{2}$	15 $\frac{1}{2}$	...	Cooch Behar . . .	Col. J. J. Harrison.

¹ Height at shoulder, 6 ft. 6 ins.



Javan Rhinoceros. Shot by Mr. M. Maxwell.

The JAVAN RHINOCEROS (*Rhinoceros sondaicus*).

A less gigantic and smaller-headed species than the last, with the skin marked by a kind of mosaic pattern, and the fold in front of the shoulder continued right across the body like the two hindmost folds. The neck also lacks the large ring-like masses of folded skin. Horn never very large, and generally almost or completely wanting in the female. A female has been measured which stood $5\frac{1}{2}$ feet at the shoulder, and it is probable that the male is not much inferior in height to the Indian species, although of lighter build.

Distribution.—The Sanderbans and other parts of Eastern Bengal, to the Tarai, Sikhim, Assam, and thence through Burma and the Malay Peninsula to Sumatra, Java, and Borneo.

Length on front curve.	Circumference.	Locality.	Owner.
$10\frac{3}{4}$	20	Java	M. Maxwell. (See illustration).
$10\frac{5}{8}$	$19\frac{5}{8}$	Do.	British Museum.
$10\frac{5}{8}$	$19\frac{1}{2}$	Do.	H. Van Son.
$8\frac{1}{4}$	20	Do.	A. S. Campbell.



Front Horn of Sumatran Rhinoceros. Shot by Mr. G. F. W. Curtis.

The SUMATRAN RHINOCEROS (*Rhinoceros* [*Ceratorhinus*]¹ *sumatrensis*).

The smallest of the Asiatic rhinoceroses, and the only one with two horns; differing, however, from the African members of the genus by the presence of folds in the skin and of teeth in the front of the jaws. Only the fold behind the shoulders is continued across the back, and the brown or black skin is rough, granular, and more or less hairy. Height at shoulder, from about 4 feet to 4½ feet; weight, about 2000 lbs.

Distribution.—From Assam (where the species is very rare) to Siam, the Malay Peninsula, Sumatra, and Borneo. The Assam animal is a distinct local race (*R. sumatrensis lasiotis*).

Length on outside curve.		Circumference.		Locality.	Owner.
Front.	Rear.	Front.	Rear.		
32½	...	17¾	...	?	British Museum.
27½	...	17⅞	...	?	Do.
15	7½	17½	17	Malay Peninsula	C. B. Smales.
11	3½	15¼	11¼	?	Sir T. S. Tancred, Bart.
7	2½	14	10	?	Capt. P. Hudson.
5	2⅝	13	11	Burma	Capt. W. F. Brayne.

¹ An earlier name is *Dicerorhinus*, but this is too like *Diceros*, the subgeneric (or generic) name of the African rhinoceroses.



Mr. S. L. Hinde's Horns of Black Rhinoceros.

The **BLACK RHINOCEROS** (*Rhinoceros* [*Diceros*] *bicornis*).

<i>Aurarissi</i> , Abyssinian.	<i>Megi</i> , M'Kua.
<i>Abu Gesn-Khartyl</i> , Sudani.	<i>Sipejana</i> , Swazi and Matonga.
<i>Chipamberi</i> , Lower Zambesi.	<i>Upejana</i> , Matabili and Zulu.
<i>Chipémbéri</i> , Chilala.	<i>Upelepi</i> , Basuto.
<i>Fava</i> , Swahili.	<i>Wärtses</i> , Galla.
<i>Gurhu</i> , Danakil.	<i>Wil</i> , Somali.
<i>Muin</i> , Masai.	<i>Zwart Rhinaster</i> , Boer.
<i>Kifuvi</i> or <i>Marili</i> , Hausa.	<i>Shempola</i> , Chila.

The African rhinoceroses are two-horned animals, distinguished from their Asiatic relatives by the absence or slight development of the folds of skin which form such a characteristic feature of the latter, and also by the lack of front teeth in both the upper and lower jaws. The hide, too, is almost completely naked, although there are some bristly hairs on the margins of the ears and the tip of the tail.

Perhaps the most distinctive external feature of the black rhinoceros, as the present species is commonly called, is to be found in the prehensile tip to the upper lip, which is rounded and not very wide in front. Other points of distinction are, however, shown by the form of the horns and ears and the position of the eyes; while in bodily size

this animal is also considerably inferior to the next. The black rhinoceros is likewise well characterised by the comparative shortness of its skull, and the form and structure of the cheek-teeth, which are adapted for a diet of twigs and leaves. Average height at shoulder, 5 feet. Weight (Capt. R. Meinertzhagen), 1 ton 1 cwt. 1 qr. 8 lbs.

Black rhinoceroses sometimes have more than the usual two horns. Gordon Cumming, for instance, records having killed a three-horned



Head of Black Rhinoceros.

specimen; and several others have been recorded from East Africa, including a five-horned specimen.

Distribution.—From Abyssinia and Somaliland through East and Central Africa, in suitable localities, to the Cape. Now rare to the south of the Zambesi, but probably more abundant in the districts between the interior of Somaliland and Lake Rudolf than anywhere else. Although more alert and active than the white rhinoceros, and thus a more dangerous animal, this species is by no means difficult to kill with modern weapons; and in the old days hunters frequently shot half-a-dozen in a single evening as they

came to drink at a pool. Of the local races at present named, the E. African *R. bicornis holmwoodi* is distinguished by the long and compressed front horn; while the Somali *R. b. somaliensis* is a relatively small form characterised by the proportions of the skull.

♂ Living animal, 602 lbs. (*New York Zool. Soc.*).

♀ " " 1080 " " "

Length on outside curve.		Circumference.		Locality.	Owner.
Front horn.	Rear horn.	Front horn.	Rear horn.		
53½	...	18¼	...	East Africa . . .	Dr. C. H. Orman.
47	22¼	22	20	Do. . . .	S. L. Hinde.
44	...	...	...	Do. . . .	The late F. Holmwood.
¹ 43½	...	21¾	...	Congo-Uganda Boundary ?	Hon. Walter Rothschild.
43	...	21½	...		The late A. Beit.
41½	10	20½	16½	Zululand . . .	The late Lieut.-Col. the Hon. W. Coke.
40	14¾	18½	20¼	Mt. Kenia, British East Africa	The late A. H. Neumann.
39	19¾	19¾	17	East Africa . . .	E. B. Horne.
38¾	...	21	...	?	Hon. Walter Rothschild.
38½	...	19	...	Masailand . . .	Sir John Kirk.
♀ 35¾	...	17¼	...	Do. . . .	Capt. G. H. Riddell.
35	11¼	21	20	East Africa . . .	Capt. L. W. Sadler-Jackson.
33¾	16	20	19½	Do. . . .	T. P. Kempson.
♀ 33½	...	17½	...	Matabililand . . .	W. Van Ness.
33	22	19½	20½	East Africa . . .	A. J. A. Douglas.
32½	16	22	19	Do. . . .	Capt. R. Meinertzhagen.
31¼	12	16½	16	Do. . . .	G. St. J. Orde Browne.
31	...	18	...	Do. . . .	R. P. Carroll.
♀ 31	13½	18¼	18	Do. . . .	W. Neilson.
31	19½	16	16½	Do. . . .	H. C. V. Hunter.
30½	16¾	21¾	20½	Do. . . .	R. W. McKergow.
² 30	21½	22½	23½	Do. . . .	Lieut.-Col. the Hon. A. Greville.
30	7¾	21	19½	Do. . . .	K. V. Painter.
29½	14½	...	...	Somaliland . . .	A. H. Straker.

¹ Determination provisional.

² Weight front horn, 13¾ lbs. Weight rear horn, 15 lbs.

Length on outside curve.		Circumference.		Locality.	Owner.
Front horn.	Rear horn.	Front horn.	Rear horn.		
29	29½	17¼	18	South Africa	R. B. Keeling.
29	...	19	...	East Africa	S. H. Christy.
28½	11¾	20¼	20½	S. E. Africa	Dr. Sauer.
28¼	8¾	18½	...	South Africa	F. C. Selous.
28	...	23¼	...	East Africa	F. Baden-Powell.
28	7½	17¾	18½	Do.	F. C. Selous.
♀ 27¾	22	19¾	20¼	Do.	The Master of Belhaven.
27¼	10	21	17	Masailand	The late Rear-Admiral R. A. J. Montgomerie, R.N.
27	12½	24¾	20	East Africa	Abel Chapman.
27	...	20½	...	Do.	E. Gedge.
27	16½	17¾	17½	Do.	Sir Robert Harvey, Bart.
27	12	...	...	Do.	Sir John Willoughby, Bart.
26¾	20½	21¾	19	Do.	W. N. McMillan.
26½	10½	19½	15	Do.	Henry Charrington.
26½	25½	18½	19	Do.	H. Sampson.
26½	11	24	20	Do.	Col. A. Colville.
26	13	20¼	23½	Do.	C. Craig.
26	9	18	17	Do.	Lieut.-Col. M. Tighe.
26	10	20½	19	Do.	F. W. Belt.
26	13½	18½	17	Do.	Stephenson R. Clarke.
26	12¾	17½	17¾	Do.	H. S. L. Scott.
26	16¾	20½	21	N. E. Rhodesia	P. M. Stewart.
26	19½	11¾	22	N. Nigeria	Capt. N. K. Street.
26	11¾	23¾	22	East Africa	H. C. Allfrey.
25¾	10½	20¾	16½	Nigeria	Major J. G. Browne.
22½	14½	17	16½	Somaliland	Sir Abe Bailey.
22¼	10	22¾	19	Do.	The late Sir H. D. Tichborne, Bart.
22	6¾	17¼	16	Do.	Col. H. D. Olivier.
21¾	17	14	16	Abyssinia	British Museum.
20¼	...	19¼	...	Lake Chad	Capt. G. W. Moran.
19½	9¾	18	14	Nigeria	Capt. H. V. Venables Kyrke.

RECORDS OF BIG GAME

Length on outside curve.		Circumference.		Locality.	Owner.
Front horn.	Rear horn.	Front horn.	Rear horn.		
17 $\frac{3}{4}$	8	16 $\frac{3}{4}$	15 $\frac{3}{4}$	Nigeria . . .	Major J. B. Cockburn.
16	9 $\frac{3}{4}$	17	15 $\frac{3}{4}$	Do. . . .	P. E. Bradney.
14 $\frac{3}{4}$	9	17 $\frac{1}{4}$	14	Benue, Nigeria . . .	Capt. E. J. Wolseley.
13	6 $\frac{3}{4}$	17 $\frac{1}{4}$	16 $\frac{1}{2}$	Abyssinia	O. Neumann.

OWNER'S MEASUREMENTS.

44 $\frac{1}{2}$	...	...	...	East Africa . . .	Imperial Museum, Vienna.
41 $\frac{1}{4}$	...	22 $\frac{1}{2}$	...	Orange River Colony .	Major - Gen. Sir William Crossman.
41	...	...	...	?	Carl Hagenbeck.
40	...	22	...	East Africa . . .	Berlin Museum.
39 $\frac{1}{2}$	...	21 $\frac{1}{2}$	...	South Africa . . .	J. Lamont.
38	11	24	21 $\frac{3}{4}$	Do. . . .	Earl of Dartmouth.
37	12 $\frac{1}{2}$	20 $\frac{1}{2}$	17 $\frac{1}{2}$	Uganda	Sir Edmund G. Loder, Bart.
36	...	..	...	East Africa . . .	Sir Bartle Frere, Bart.
35 $\frac{1}{2}$	...	18	...	?	H. Murray.



Head of Northern White Rhinoceros.



Skull and horns of White Rhinoceros from Lado in the possession of Sir Edmund G. Loder, Bart.



Front Horns of Female White Rhinoceros.

From specimens in the Collection of the late Roualeyn Gordon Cumming,
in the possession of Col. W. Gordon Cumming.

The **WHITE** or **BURCHELL'S RHINOCEROS** (*Rhinoceros [Diceros] simus*).

Um Girin, Sudani.

Vit Rhinaster, Cape Dutch.

Next to the Indian elephant this is the largest existing land mammal. Its huge bulk, the bluntly truncate muzzle, which has no prehensile tip, the great length of the skull, and the enormous front horn, with its expanded base and flat front surface, form the most striking external characteristics of this species. The cheek-teeth are of a different type of structure from those of the preceding species, being, in fact, adapted for chewing grass. In walking, the animal carries its head low, so that in examples in which the front horn bends forward, its tip becomes worn by being pushed along the ground. It is stated that the colour of the skin is rather lighter than that of the black species.

Distribution.—South and South-East Africa, in suitable localities, as far north as the Zambesi; and again in Equatorial Africa at Lado, just north of the equator. Exterminated early in the last century to the south of the Orange River, and now represented in South Africa at the most by a few survivors in North-East Mashonaland, and possibly by others in the reedy swamps at the junction of the Black and White Umvolosi rivers. Between the Zambesi and Orange rivers the species was abundant about half a century ago; Andersson alone having killed sixty in the course of a few months. Its existence in Central Equatorial Africa was indicated by Sir Samuel Baker on the evidence of horns, and subsequently made certain in the neighbourhood of Lado by Major Gibbons. The northern race (*R. s. cottoni*) is distinguished by the proportions of the skull, and apparently by the sculpture of the skin.

A.—SOUTHERN or TYPICAL RACE.

Length on outside curve.		Circumference.		Locality.	Owner.
Front horn.	Rear horn.	Front horn.	Rear horn.		
56½	...	23½ about	...	South Africa . .	British Museum.
50¾	10	25	22	Do. . .	W. N. McMillan.
46½	...	27	...	Do. . .	Carl Hagenbeck.
44	...	20	...	Do. . .	British Museum.
43¾	...	23¾	...	Do. . .	The late A. Beit.
42¾	...	25⅝	...	Limpopo . .	The late W. C. Oswell.
40¾	...	29¾	...	South Africa . .	Sir Edmund G. Loder, Bart.
40½	...	20¾	...	Do. . .	Hon. Walter Rothschild.
40½	...	22½	...	Do. . .	Sir Edmund G. Loder, Bart.

Length on outside curve.		Circumference.		Locality.	Owner.
Front horn.	Rear horn.	Front horn.	Rear horn.		
39 $\frac{1}{8}$	...	23	...	? East Africa . .	Lord Delamere.
♀ 38 $\frac{5}{8}$	...	24 $\frac{1}{2}$	...	South Africa . .	The late W. C. Oswell.
38 $\frac{1}{4}$	...	22 $\frac{1}{4}$	...	Do. . .	J. B. Taylor.
37 $\frac{3}{8}$	17 $\frac{7}{8}$	27 $\frac{1}{8}$	...	Mashonaland . .	F. C. Selous.
36	...	28 $\frac{1}{2}$	...	Do. . .	C. D. Rudd.
¹ 35 $\frac{1}{2}$	7 $\frac{5}{8}$	26	21	Mount Domo, Ma- shonaland ?	South African Museum (late Cecil Rhodes). Sir Abe Bailey.
33 $\frac{1}{2}$	...	23	...		
33	13 $\frac{1}{8}$	23 $\frac{1}{4}$	...	Mashonaland . .	F. C. Selous.
31 $\frac{1}{4}$	8 $\frac{1}{4}$	26 $\frac{3}{4}$	26	Zululand . .	J. C. Phillips.
31	...	22	...	Mashonaland . .	J. G. Griffiths.
¹ ♀ 29 $\frac{3}{4}$	5 $\frac{1}{2}$	23	20 $\frac{1}{2}$	Zululand . .	Pretoria Museum (Julius Jeppe).
¹ 22 $\frac{1}{2}$	7 $\frac{1}{2}$	26 $\frac{1}{4}$	...	Mashonaland . .	Hon. Walter Rothschild.
¹ 20 $\frac{3}{4}$	7	28 $\frac{3}{4}$	...	Do. . .	British Museum.
¹ 20	6	25 $\frac{1}{2}$	18 $\frac{1}{2}$	Zululand . .	H. R. H. the Duc d'Orléans.

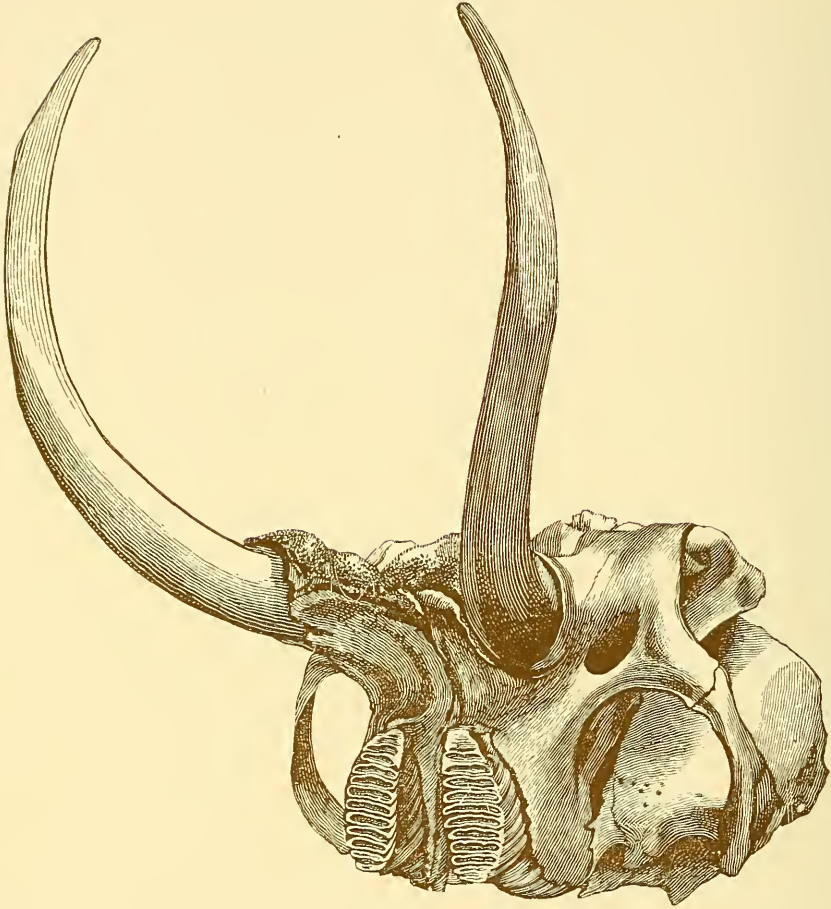
OWNER'S MEASUREMENTS.

59	...	22 $\frac{1}{2}$	...	South Africa . .	Col. W. Gordon Cumming.
52 $\frac{1}{2}$	...	21 $\frac{1}{2}$	...	Do. . .	Do.
41	...	...	...	Do. . .	J. W. Fitzherbert.

B.—NORTHERN RACE (*R. simus cottoni*).

41	11	26	22 $\frac{1}{4}$	Mongalla . .	Major P. M. Dove.
40 $\frac{1}{4}$	...	25	...	Bahr-el-Ghazal .	Major F. G. Poole.
39	11	26 $\frac{1}{4}$	25 $\frac{3}{4}$	Do. . .	Capt. C. Graham.
36 $\frac{1}{4}$	...	19 $\frac{3}{4}$	...	S. Sudan . .	Lieut.-Gen. Sir B. T. Mahon.
36 $\frac{1}{4}$	14	27	18 $\frac{1}{2}$	Lado . .	The late G. G. Longden.
35	13 $\frac{1}{2}$	21 $\frac{1}{2}$	20 $\frac{1}{2}$	Do. . .	H. Twyford.
♀ 35	10 $\frac{3}{4}$	22 $\frac{1}{4}$	20 $\frac{3}{8}$	Do. . .	Major P. H. G. Powell-Cotton.
33 $\frac{3}{4}$	12	25 $\frac{1}{2}$	20	S. Sudan . .	The late Prince Paul Demidoff.
32 $\frac{1}{2}$	12 $\frac{1}{2}$	21 $\frac{1}{2}$	19	Near Lado . .	Col. J. J. Harrison.
32	13	27 $\frac{1}{4}$	25 $\frac{1}{2}$	Do. . .	Capt. the Hon. M. P. Macnaghten.
32	7	21	16 $\frac{3}{4}$	Do. . .	Douglas McDouall.
31 $\frac{1}{4}$	13 $\frac{1}{4}$	25 $\frac{1}{4}$	24	Lado . .	C. Mathews.
31	12	27	27	Do. . .	British Museum (Major P. H. G. Powell-Cotton).
30 $\frac{3}{4}$	...	25 $\frac{3}{4}$	...	White Nile . .	Lieut.-Col. C. J. Hawker.
29	10	25	23	Do. . .	Major R. M. Sanders.
27 $\frac{3}{4}$	...	28 $\frac{3}{4}$	...	S. Sudan . .	Hon. Walter Rothschild.
27	9	25 $\frac{1}{4}$	22 $\frac{1}{2}$	Do. . .	A. A. R. Boyce.
27	9	22 $\frac{3}{4}$	21 $\frac{1}{4}$	Do. . .	Capt. F. W. Woodward.
26	15 $\frac{1}{2}$	26	19 $\frac{1}{4}$	Do. . .	Sir Kenneth Crossley.

¹ Mounted specimens.



Under Surface of Skull of Indian Elephant.

The ASIATIC or INDIAN ELEPHANT (*Elephas maximus*).

In general a decidedly smaller animal, the Indian elephant differs from its African relative not only in external form, but also in the structure of its molar teeth, which are composed of a greater number of much thinner vertical plates. The females, as a rule, have only very small tusks, not projecting beyond the jaw; and in some cases those of the males are equally poorly developed. Five nails are usually present on the fore-feet, and four on the hind pair. Externally, the most characteristic distinction is the comparatively small size of the ears; next to which comes the presence of a finger-like process on the front edge only of the tip of the trunk; the African species having one in front and a second behind. The skin is nearly smooth; and the

bristles on the tail are confined to the front and back edges for some distance above the tip. Other noticeable points are the comparative flatness of the forehead, and the regular convex form of the back, as well as the perfect flexibility of the trunk, which may be compared in structure to an india-rubber tube. In the African elephant the trunk may be compared to a telescope consisting of segments of different calibre. Although males do not generally exceed 9, and females 8 feet in height, specimens have been killed measuring over 10 feet, while one is stated to have reached 11 feet, and a skeleton in the Indian Museum, Calcutta, indicates a still larger individual.

Distribution.—The forest-districts of India, Ceylon, Assam, Burma, Malay Peninsula, Siam, Cochin China, Sumatra, and Borneo. There is some doubt as to which is the typical form of the species. It has been considered that the Ceylon elephant holds this position, but the specimens originally named were probably tuskers introduced from the mainland. The Indian race may therefore be taken as the type. In the Ceylon race (*E. maximus zeylanicus*) the males have very small tusks, and the females are tuskless. The Sumatran race (*E. m. sumatrensis*) is characterised by the coarser structure of the molar teeth, and the Malay *E. m. hirsutus* by the shape of the ear.

♂ Indian elephant, living, 6800 lbs. (*New York Zool. Soc.*).
 ♀ " " " " 4500 " " "

Height (Owner's Measurements).

At shoulder.		Locality.	Owner.
ft.	ins.		
10	6	Burma	H. Shaw Dunn.
10	5	Coorg	Capt. S. H. Charrington.
10	4	Burma	A. E. S. Minett.
10	4	Garhwal, United Provinces	Col. J. E. Campbell.
10	1	Ceylon	Col. J. J. Harrison.
10	1	India	Major-General A. A. A. Kinloch.
9	8	Southern India	F. Gompertz.

Tusks.

Length out-side curve.		Greatest circumference.	Weight.	Locality.	Owner.
ft.	ins.				
-9	10½	15½	... } ... }	?	Royal Siamese Museum, Bangkok.
-9	0	15¾	... }		

- Owner's measurements.

RECORDS OF BIG GAME

Length out- side curve.		Greatest cir- cumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
-8	9 R	17 $\frac{1}{4}$	81	Assam	The late Earl of Lytton.
-8	2 L	...	80 $\frac{1}{2}$		
-8	9)	...	...	Burma	Government House, Rangoon.
-8	6)				
8	0	16 $\frac{7}{8}$	90	S. India	Sir Victor Brooke's Collection.
¹ 7	9	17	...	Burma	Royal Palace, Mandalay.
-7	6	15 $\frac{1}{2}$	...	Sumatra	G. F. W. Curtis.
-7	0	14 $\frac{1}{2}$			
-7	4 $\frac{1}{4}$	18 $\frac{1}{4}$	85	Assam	T. H. Monteath.
² 7	3 $\frac{3}{8}$	17 $\frac{1}{2}$	102	Burma	Marquis of Waterford.
7	3 $\frac{1}{4}$	17 $\frac{3}{8}$	97 $\frac{1}{2}$		
6	11	15 $\frac{1}{2}$	106	Do.	R. Gordon Smith.
6	6	15 $\frac{1}{2}$			
6	10	17 $\frac{1}{2}$	65 $\frac{3}{8}$	India	Bethnal Green Museum (J. D. Goldingham).
-6	8	18 $\frac{3}{4}$	84	Burma	H. Shaw Dunn.
-6	5	18 $\frac{3}{4}$	83		
6	7 $\frac{1}{2}$	14 $\frac{3}{8}$	52 $\frac{1}{2}$	Mysore	Viscount Powerscourt.
-6	7	12 $\frac{1}{2}$	46 $\frac{1}{2}$	Yala, S. Provinces, Ceylon	Lieut.-Col. R. J. Marker.
3	11 $\frac{3}{4}$	12 $\frac{1}{4}$	29 $\frac{3}{4}$		
-6	6	...	73 $\frac{1}{2}$	Burma	A. E. S. Minett.
-6	4	...	71 $\frac{1}{2}$		
-6	4	...	...	Assam	G. H. Moore.
-6	3 $\frac{1}{2}$	...	73 $\frac{1}{4}$	Madura District .	British Museum.
6	2	16 $\frac{1}{8}$	58	North Coimbatore .	Rev. H. C. B. Stone.
5	11 $\frac{1}{4}$	16 $\frac{1}{2}$	56 $\frac{1}{2}$		
-6	1	17 $\frac{3}{4}$	56 $\frac{1}{2}$	Assam	Noel Williamson.
-5	11 $\frac{3}{4}$	17 $\frac{1}{2}$	53 $\frac{1}{2}$		
6	1	16 $\frac{1}{2}$	48 $\frac{1}{2}$	Burma	E. M. Alexander.
5	10	16 $\frac{1}{4}$	42		

- Owner's measurements.

¹ Exposed from gum.² The tusks of the sacred white elephant from King Thebaw's Palace, Mandalay.

Length out-side curve.		Greatest cir-cumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
6	0½	}	109	S. India . . .	F. Gompertz.
5	8				
6	0	...	50	Madras . . .	J. Fortune.
5	11	16	45	} Bengal . . .	H. K. Robinson.
5	10	16	46½		
-5	10	...	...	Borneo . . .	C. M. D. Stewart.
-5	3	15	42	Ceylon . . .	W. S. Murray.
4	10¾	13½	28	} Malaya . . .	J. Scott Mason.
4	7½	13½	27		

- Owner's measurements.

Feet (after preservation).

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
63½	}	Pegu, Burma . . .	Capt. W. F. Brayne.
62½			
62½	...	South Arcot District .	J. Fortune.
61	20	Travancore . . .	Col. D. M. Lumsden.
60	18	Mysore . . .	Viscount Powerscourt.
59	19	?	Lieut. R. Home, R.N.
58½	18	Travancore . . .	Capt. H. L. Cottingham.
58½	18	Assam . . .	A. H. Cuming.
58	19	Do. . . .	Major F. B. Stapleton-Bretherton.
58	18	Travancore . . .	Hon. E. Stonor.
57¾	19	Assam . . .	H. C. Holland.
57¾	18	?	L. V. Bagshawe.
57½	18½	Assam . . .	D. D. F. Hosack.
56	17	Do. . . .	G. M. Norrie.
56	17¼	?	Capt. G. P. Evans.
¹ 55	17	Garhwal . . .	B. B. Osmaston.
² 55	20¾	?	Lieut. R. Home, R.N.

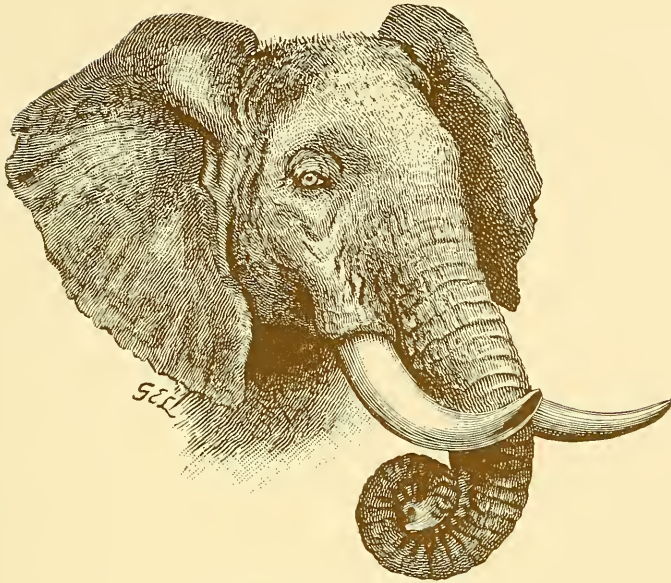
¹ Measured, 59½ when shot.

² Hind foot.

OWNER'S MEASUREMENTS.

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
67½	...	?	From living elephant, by Major-Gen. G. W. Hanson.
63½	...	N. Burma . . .	H. Shaw Dunn.
61½	...	Coorg . . .	Capt. S. H. Charrington.
60½	...	?	Major-Gen. A. A. A. Kinloch.
¹ 57½	17	Ceylon . . .	R. Gordon Smith.
57½	...	S. India . . .	Col. E. T. Taylor.
56	...	Ceylon . . .	E. J. Brooke.
56	18	Do. . . .	Sir Peter Walker, Bart.

¹ Measurements, 54 ins. × 17 ins. when dried.



Head of African Elephant.

The **AFRICAN ELEPHANT** (*Elephas* [*Loxodon*] *africanus*).

Ärb, Galla.

Dakana, Danakil.

Fyl, Sudani.

Giwa, Hausa.

Marodi, Somali.

Muzovu, Chila.

Njovu, Chilala and Chibisa.

Njovu, Waganda.

Temba, Swahili.

Tepo, M'Kua.

Thlo, Ngami.

Tlo, Barotsi.

Zahon, Abyssinian.

Some of the distinctive features of the African elephant are indicated under the heading of the Indian species.

The African elephant, although still abundant in many regions of Central Africa, in the southern part of the continent is rapidly approaching extinction. A remarkable exception to this process of extermination is, however, to be found in the south and east of Cape Colony, where, since the year 1830, wild elephants have been systematically preserved by Government. Strong troops of these protected elephants still roam the dense and impenetrable jungles of the Addo Bush and the Knysna and Zitzikamma forests. Farther inland the ivory-hunters have for a generation past been so actively employed that, despite the vast numbers of these great mammals which forty or fifty years ago thronged the interior from the Orange

River northwards, but few herds are now left south of the Zambesi. The species has been divided into a number of local races, mainly distinguished by the form and size of the ears and tusks.

BODILY SIZE.—OWNER'S MEASUREMENTS.

Height at shoulder in straight line.	Total length (trunk to end of tail).	Girth of fore-foot.	Locality.	Owner.
ft. ins.	ft. ins.	ft. ins.		
11 8½	Abyssinia	H. Weld-Blundell.
¹ 11 6½	15 5	5 5¼	Near Wadelai	Major P. H. G. Powell-Cotton.
11 6	...	4 10	Do.	E. S. Grogan and Major G. A. S. Cape.
11 4	Kavirondo Hills	E. B. Bronson.
11 4	Sudan	Earl of Sefton.
11 3	East Africa	The late A. H. Neumann.
11 3	Do.	H. B. Tate.
11 2½	Blue Nile	Capt. J. A. Pollock.
11 1	17 3	4 11	Mozambique	Col. J. J. Harrison.
11 1	...	5 4	Toro, E.C.A.	E. S. Grogan.
11 1	East Africa	Abel Chapman.
11 0	Do.	G. F. Archer.
11 0	Uganda	G. M. Norrie.
10 10½	Sudan	G. C. Whitaker.
10 10½	Sierra Leone	Capt. W. P. Pearse.
10 10	N.W. Rhodesia	Dr. A. H. B. Kirkwood.
10 10	White Nile	Major R. M. Sanders.
10 9	² 12 8	5 0	Lake Rudolf	The late A. H. Neumann.
10 8	Uganda	M. Mitchell.
10 8	...	4 10	Tana Valley	Major H. De Prée.
10 7	"Jumbo"	...	?	Barnum and Bailey.
10 6	...	4 8	Tana Valley	Capt. C. Hankey.
10 6	S.E. Africa	F. C. Selous.
10 4	N.E. Rhodesia	R. D. Waterhouse.
10 3	21 0	5 1	Nyasaland	Sir John Kirk.
9 7¼	...	4 6¾ (dried)	Somaliland	Viscount Edmond de Poncins.

¹ Length of humerus, 3 ft. 8 ins.² Length from root of tail to eye, in straight line.

With reference to the height of elephants, the late Mr. A. H. Neumann, in *Elephant Hunting in East Equatorial Africa*, stated that "I am an unbeliever in 14 ft. elephants or anything like it. Possibly (though I doubt even that) there may be a 12 ft. one in existence, but I have had some experience (and probably more opportunities of judging than most of those who pose as authorities), and I have never killed one that could be absolutely guaranteed to be over 11 ft. 3 ins. in height (to be quite on the safe side, for as a fact I made it an inch more). I have killed two of that height in my time, and not another within several inches of this."



African Elephant Tusk in the American National Collection.

Tusks.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
11	5½	18½	293	East Africa	American National Collection. (See illustration.)
11	0	18½			
10	4	18¾	126	Mongalla	H. R. H. the Duc de Montpensier.
9	7	19	123½		
10	2½	24¼	226½	East Africa	British Museum.
10	2	...	159	Marsabit	F. J. Watson Taylor.
9	10	19¼	247	Do.	Charles Pulley.
9	5	19			

RECORDS OF BIG GAME

Length (outside curve). ft. ins.	Greatest circumference. ins.	Weight. lbs.	Locality.	Owner.
9 5½	18¾	120	Tana Valley . .	Major H. De Prée.
9 0	18¼	117		
9 5	22½	184	?	Sir Edmund G. Loder, Bart.
9 4	20½	160	East Africa . .	Sir John Kirk.
9 4	18	110	Do. . .	Duke of Westminster.
(tip broken) -9 4	...	151	Elgayu, E. Africa .	Sir F. J. Jackson.
9 4	22	156½	Uganda . . .	R. Grauer.
9 1	22¾	168½		
9 3¼	18¾	...	Tana Valley . .	Sir Robert Harvey, Bart.
-9 3	...	129	East Africa . .	Sir F. J. Jackson.
9 2¾	20	...	Tana Valley . .	Sir Robert Harvey, Bart.
9 2	24	340	Uganda . . .	Capt. H. S. Burrough.
8 5				
9 1½	24	176	Do. . . .	Capt. E. B. Place.
8 9½	24⅝	179¾		
9 1	19½	114	East Africa . .	Col. A. Eric Smith.
8 10½	19½	108		
1 9 0	21⅝	161	Tana Valley . .	His Majesty The King.
8 11	22½	167		
2 9 0	21½	139	Uganda . . .	Frankfort Museum. Shot by the late G. G. Longden.
8 6	21½	141		
9 0	25	198	Central Africa . .	Major P. H. G. Powell-Cotton.
8 11	23½	174		
9 0	21	130	East Africa . .	J. Elkington.
8 10	21	124		
8 11	20	130	Do. . . .	N. C. Cockburn.
8 8½	19¾	124½		
-8 11	18½	110	Mt. Elgon, E. Africa	Lieut.-Col. J. D. Ferguson.
-8 9	18½	108		
8 10	18	105	East Africa . .	Lord Delamere.
-8 9½	...	102	Tana Valley . .	Major H. De Prée and Capt. C. Hankey.
-8 0	...	91		

- Owner's measurements.

1 Presented by H.H. the Aga Khan.

2 Presented by Rudolf de Goldschmidt.

AFRICAN ELEPHANT

483

Length (outside curve). ft. ins.	Greatest circumference. ins.	Weight. lbs.	Locality.	Owner.
8 9½	17	90	East Africa . . .	Sutton Timmis.
7 11½	17½	92		
8 9	19½	104	Do. . . .	G. M. Norrie.
8 3½	19½	100		
8 7½	22¾	165	Do. . . .	His Majesty The King.
8 6	17¾	78½	Congo	Duke of Peneranda.
8 6	17	78½		
8 5½	17½	80½	Do	Sir A. Sharpe.
8 0	17½	79		
8 5	23¾	175	Uganda	Graham Pownall.
8 5	19¾	139½	Bahr-el-Gebel . . .	Major R. M. Sanders.
8 1¾	19¾	137		
8 4½	19¼	99½	Sudan	Capt. E. C. Hamilton.
7 6	19	96½		
8 4½	18	97½	B.E. Africa . . .	Capt. W. H. Wilkin.
7 0	18½	91		
8 4	17½	88¼	East Africa . . .	W. Neilson.
8 4	...	76	M'bogo	E. S. Grogan.
8 4	21½	150	Near Wadelai . . .	W. Y. Wyndham.
8 3	21	147		
8 3	18¾	81½	East Africa . . .	Capt. T. W. Greenfield.
8 2	18¾	80		
8 3	22	135½	Sudan	Sir W. Garstin.
7 11	23¼	159½		
8 2	20¾	145	Gondokoro . . .	His Majesty The King.
7 8½	20½	121		
8 1	17¾	86	?	Major G. G. P. Humphreys.
8 1	16	...	East Africa . . .	Capt. C. J. Murray.
7 2	16	...		
8 1	20¼	110	Abyssinian Sudan .	W. N. McMillan.
8 0	20	108		
8 0	20	118	Uganda	Capt. C. H. Stigand.
7 8½	19½	106½		

RECORDS OF BIG GAME

Length (outside curve). ft. ins.	Greatest circumference. ins.	Weight. lbs.	Locality.	Owner.
17 11	19 $\frac{3}{4}$	98	Sierra Leone . . .	Major C. E. Palmer.
7 8 $\frac{3}{4}$	20 $\frac{1}{4}$	138		
7 11	17 $\frac{5}{8}$	90	White Nile . . .	Capt. E. R. Wishaw.
7 0	17	80		
7 10 $\frac{1}{2}$	20	113	Upper Nile . . .	Douglas McDouall.
7 5 $\frac{1}{2}$	20 $\frac{1}{2}$	108		
7 10	17 $\frac{1}{2}$	85	East Africa . . .	C. Bower Ismay.
7 6 $\frac{1}{2}$	17	81		
7 10	16 $\frac{1}{2}$	63	Do. . . .	R. Holmes.
7 8 $\frac{1}{2}$	16 $\frac{1}{2}$	68 $\frac{1}{2}$		
7 9	17 $\frac{1}{2}$	95 $\frac{1}{2}$	Do. . . .	P. Niedieck.
-7 9	22	119	N.E. Rhodesia . . .	F. H. Melland.
-7 8 $\frac{1}{4}$	20 $\frac{1}{2}$	110		
7 9	22 $\frac{1}{2}$	268	Lake Rudolf . . .	A. E. Butter.
7 7	21 $\frac{1}{2}$			
7 7	16 $\frac{3}{4}$			
7 6	16 $\frac{3}{4}$	...	Lake Naivasha . . .	T. W. Brooke.
7 6 $\frac{5}{8}$	19 $\frac{3}{8}$	101	S. Abyssinia . . .	J. R. Luchsinger.
6 9 $\frac{1}{2}$	19	91		
7 6 $\frac{1}{2}$	17 $\frac{1}{2}$	78 $\frac{1}{4}$	Congo	R. de la Huerta.
7 2	...	75 $\frac{3}{4}$		
7 6	20	103	East Africa . . .	Col. Max C. Fleischmann.
6 9	19 $\frac{3}{4}$	93		
7 6	17 $\frac{1}{4}$	76	Uganda	H. Leney.
6 11 $\frac{1}{2}$	18	81		
7 5 $\frac{1}{2}$	18	85	Sudan	Major A. W. Jennings Bramly.
7 5	18 $\frac{1}{4}$	80		
7 5	19 $\frac{1}{4}$	84	Do. . . .	Major H. D. Pearson.
7 5	22 $\frac{1}{2}$	114	Lado	Capt. R. S. Hart.
7 2	23	112		
7 4 $\frac{1}{2}$	20	92 $\frac{1}{2}$	Uganda	J. Jay White.
7 4 $\frac{1}{2}$	19 $\frac{1}{2}$	91 $\frac{1}{2}$		

- Owner's measurements.

¹ In Hon. Walter Rothschild's Museum at Tring.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
7	2½	18¼	87	Abyssinian Sudan	C. Bulpett.
6	7	18¼	85		
7	2	19½	88	Uganda	G. M. Norrie.
6	10	19	77		
7	2	17½	81½	Sudan	Countess of Sefton.
6	7½	17½	80¾		
7	0	21¾	93	Uganda	G. Blaine.
7	0	21¾	91		
6	10½	17½	65	N. Nigeria	Capt. G. C. Kelly.
6	0	17½	59½		
6	10	22	112	Uganda	G. M. Norrie.
6	4	22	103		
6	7	16¾	...	South-East Africa	F. C. Selous.
6	7	17¼	73	N.E. Rhodesia	Hon. M. W. Elphinstone.
6	0½	17¼	72½		
6	6	18½	57	S.E. Africa	P. Neergaard.
6	4½	18½	63½		
6	6	15½	...	B.C. Africa	R. H. Storey.
6	4				
♀ 6	5½	12½	...	N. of Lake Rudolf	The late A. H. Neumann.
6	2½	18½	...	Lomagundi's Country	Duke of Westminster.
5	7½	18¾	...		
- ♀ 5	11½	...	40	Uganda	Capt. E. B. Place.
- ♀ 5	10¾	...	39		
5	0	14¾	49	Abyssinia	A. E. Butter.
4	8	14¾	47		
4	11	15	26	Somaliland	A. H. Straker.
4	9½	14¾	33½	Do.	Major E. W. S. Brooke.
4	8¼	13½	...	Do.	Sir Edmund G. Loder, Bart.
4	5	12½	...	Do.	Lord Delamere.
4	4	13¾	26	Do.	Lieut.-Col. J. McCall Maxwell.

The following specimens probably belong to the Dwarf Congo race (*E. africanus pumilio*):—

Length (outside curve). ft. ins.	Greatest circumference. ins.	Weight. lbs.	Locality.	Owner.
5 6	13 $\frac{1}{4}$	27 $\frac{1}{2}$	Semliki	G. Blaine.
5 4	13 $\frac{1}{4}$	27 $\frac{1}{2}$		
3 8	12	17	Umfumbro, E. Congo . .	Major J. Webb Bowen.
3 7 $\frac{1}{2}$	12 $\frac{1}{4}$	17		
♀ 2 11	8 $\frac{1}{4}$	7 $\frac{3}{4}$		
♀ 2 11	8 $\frac{1}{2}$	8		

Feet (after preservation).

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
66 $\frac{1}{2}$	22	East Africa	G. F. Archer.
65 $\frac{1}{4}$	20 $\frac{1}{2}$	Near Albert Nyanza . .	H. S. Keating.
65 $\frac{1}{4}$	...	Near Wadelai	Major P. H. G. Powell-Cotton.
-65	...	Central Africa	Arnold Mathews.
64	...	Uganda	G. M. Norrie.
64	20 $\frac{1}{2}$	Toro	E. S. Grogan.
63 $\frac{1}{2}$	20	White Nile	Sir W. Garstin.
63 $\frac{1}{2}$	21 $\frac{1}{2}$	Uganda	The late G. G. Longden.
63	20	White Nile	Major C. J. Hawker.
-63	...	Blue Nile	Capt. J. A. Pollock.
62 $\frac{1}{2}$	21	Sudan	Earl of Sefton.
62 $\frac{1}{2}$	...	Do.	M. C. Radford.
62	20	East Africa	C. Craig.
61	...	N. Nigeria	Capt. G. C. Kelly.
-61	..	East Africa	Marquis Pizzardi.
-60 $\frac{3}{4}$	...	Somaliland	Capt. M. S. Wellby.
60 $\frac{1}{2}$	...	White Nile	Sir Edmund G. Loder, Bart.
60 $\frac{1}{2}$	20	Sudan	G. C. Whitaker.
60	19	Wadelai	Lieut.-Col. M. L. Carleton.

MAMMOTH or EXTINCT SIBERIAN ELEPHANT (*Elephas primigenius*).

Nearly allied to the Indian elephant, but the plates of the teeth still narrower and more numerous, the tusks spirally twisted, the ears smaller, and the skin clothed in woolly fur with long bristles intermixed. The height is generally inferior to that of the Indian species.

Remains of this species occur in the superficial deposits of Europe and Northern Asia. In the frozen soil of Siberia the skin, flesh, and hair are frequently preserved, and the ivory is often suitable for the purposes of the turner.

Length (out- side curve).		Greatest circum- ference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
12	10½	31½	...	?	Stuttgart Museum.
12	8	...	...	Siberia	Hon. Walter Rothschild.
12	6	23	...	?	British Museum.
12	0	19	...	?	Hon. Walter Rothschild.
11	9	35	330 (estimated)	?	Milan Museum.
11	5	17¾	...	?	Hon. Walter Rothschild.
11	0	20½	173	Siberia	Sir Edmund G. Loder, Bart.



Modelled in the Rowland Ward Studios.

African Lion (fore part).

The LION (*Felis leo*).

<i>Ambassa</i> , Abyssinian.	<i>Leeuw</i> , Cape Dutch.
<i>Asad</i> , Arabic.	<i>Libbaka</i> , Danakil.
<i>Imbubi</i> , <i>Ibubesi</i> , <i>Inyonyama</i> , <i>Matonga</i> , and <i>Marhanganga</i> ,	<i>Nkango</i> or <i>Nkalamo</i> , Chilala and Chibisa.
Swazi and Zulu.	<i>Shumba</i> , Chila.
<i>Karamo</i> , M'Kua.	<i>Simba</i> , Swahili.
<i>Lendjandnĕk</i> , Galla.	<i>Tau</i> , Basuto and Bechuana.
<i>Libba</i> , Somali.	<i>Tauw</i> , Barotsi and Ngami.
	<i>Zaki</i> , Hausa.

Any description of such a familiar animal as the lion (the only cat in which the male is furnished with a mane on the head and shoulders, and a tuft of long hair to the tip of the tail) would obviously be superfluous here. One of the points of interest attaching to the species is its wide distribution. Several local races are now recognised. Somali lions are smaller and greyer than those from either the Cape or Algeria, although their manes are often very fine, and the East African

(*F. l. masaiicus*) is distinguished by the persistence in the adult, especially the female, of the chocolate spots of the cubs. The Indian lion (*F. leo gujratensis*), distinguished by its small, straight, and tawny mane and pale tawny colour, is another race. Heights of 3 feet $3\frac{1}{2}$ and 3 feet 8 inches at the shoulder have been recorded in African specimens (the larger measurement by Mr. Selous), and 3 feet 6 inches in an Indian example (by Gen. W. Rice). Mr. Selous killed an African lion weighing 500 lbs.; and between 400 and 500 lbs. may be taken as the average weight. Wild lions seldom develop such enormous manes as menagerie examples.

A lion's skull may be easily recognised when placed beside that of a tiger by the fact that in the former the terminations of the sutures dividing the frontal from the nasal and maxillary (jaw) bones are situated nearly in the same transverse line, while in the latter the nasal bones extend much farther back than the maxillary. Moreover, the lower jaw of a lion will stand much flatter on a table than that of a tiger.

Distribution.—In modern times Africa from Algeria to the Cape, Mesopotamia on the west flanks of the Zagros range, Persia south of Shiraz, and India in the districts of Kathiawar, Sind, the Central Provinces, and Bundelcund. Now rare in India, where it is confined to the Gir Forest in Kathiawar.

OWNER'S MEASUREMENTS.

Total length before skinning.	Length from nose to root of tail.	Skin measurement from tip of nose to tip of tail.	Estimated height at shoulder.	Mane.	Locality.	Owner.
ft. ins.	ft. ins.	ft. ins.	ft. ins.			
10 5 (A)	...	10 10 $\frac{1}{2}$ (raw)	3 7	Black	S.E. Africa	F. Vaughan Kirby.
10 5	...	...	...	Fine	East Africa	Dr. W. S. Rainsford.
10 4	7 6	10 3 (dressed)	...	Fair	Gir Forest, India	Lord Lamington.
10 4	...	11 2	...	Good	East Africa	Capt. the Hon. G. H. Douglas-Pennant.
10 2 $\frac{1}{2}$	...	...	...	Fair	N.E. Rhodesia	R. D. Waterhouse.
10 2	...	10 2 $\frac{1}{2}$	...	Do.	N.W. Rhodesia	Major R. Gordon.
10 2	7 3	...	3 6	Do.	Blue Nile	Capt. C. C. Maud.
10 1	...	...	...	Fine	East Africa	Capt. E. Sartorius.

OWNER'S MEASUREMENTS—*continued.*

Total length before skinning.	Length from nose to root of tail.	Skin measure- ment from tip of nose to tip of tail.	Estimated height at shoulder.	Girth of forearm (upper arm)	Girth behind shoulder.	Weight.	Mane.	Locality.	Owner.
10 0	6 10	...	3 6	22	57	434	Fine	Edmund's Menagerie	W. Yellowby.
10 0	7 0	11 9	3 7½	...	...	...	Fair	East Africa	C. C. Branch.
10 0	7 5½	10 2	...	...	52½	...	...	Somaland	Count R. Coudenhove-Kalergi.
9 11½	...	...	3 9	...	...	...	...	East Africa	S. E. White.
9 11 (c)	...	11 9 (raw)	3 8	...	...	410	Fine	Hartley Hills, Mashonaland	F. C. Selous.
9 11	...	11 5½	3 7	16½	...	...	Do.	East Africa	Norman B. Smith.
9 10½ (D)	6 8	10 8 (dressed)	3 6	19½	51½	516	Do.	Do.	The late Rear-Admiral R. A. J. Montgomery, R.N.
9 10 (H)	...	12 1¼ (raw)	3 7	...	49½	...	Full black	Mushukulumbwe	Major A. St. H. Gibbons.
9 10 (L)	...	10 5	...	...	...	...	Good	East Africa	Capt. M. Kincaid Smith.
9 10	...	...	4 0	19	...	...	...	N.W. Rhodesia	J. Bracken.
9 10 (K)	...	11 6	...	...	...	...	Yellow and black	Somaland	A. E. Leatham.
9 8	6 6½	...	3 4½	15¼	...	...	Full yellow	Zomba	R. G. Beswick.
9 8	...	...	...	19	52	...	Fine black	East Africa	Major H. B. Dalgety.
9 8	...	...	3 9	...	...	...	None	Do.	Lieut.-Col. J. H. Patterson.
9 8	...	12 0	...	17	...	...	Fair	Do.	Sutton Timmis.
9 7	...	...	...	21½	45	...	Fine	P.E. Africa	Capt. M. McNeill.
9 7	...	...	...	...	...	...	Do.	Kathiawar	Lord Harris.
9 6	10 5	...	...	19	49	...	...	B.C. Africa	S. Robins.
♀ 9 6	...	...	...	...	...	...	...	East Africa	Sutton Timmis.
♀ 9 5	6 6	...	...	...	...	...	...	Kathiawar	Lieut.-Col. L. L. Fenton.
9 4	...	10 1½	3 7½	17½	44	...	...	N.W. Rhodesia	Capt. C. G. Leslie.
♀ 8 1½	...	...	2 10½	...	...	260	...	East Africa	Capt. R. Meinertzhagen.
...	...	10.2 (dressed)	...	...	...	...	...	Do.	H. R. H. the Duke of Connaught.

Skulls.

Length from back to front. ¹	Width across the zygomatic arches.	Weight cleaned.	Locality.	Owner.
16½ (A)	10	...	South-East Africa	F. Vaughan Kirby.
16 (end broken)	10¼	5 lbs.	East Africa .	E. Gedge.
15 ⁹ / ₁₆	10	6 lbs. 8 oz.	Do. .	Hon. C. G. Murray.
15½ (D)	10½	5 lbs. 3 oz.	Do. .	The late Rear-Admiral R. A. J. Montgomerie, R.N.
15½	9¼	...	Pungwe .	Hon. T. Thynne.
15½	9¼	...	S. Rhodesia .	C. W. Adams.
15 ³ / ₁₆	9¼	...	E. Africa .	H. H. Williams.
15	10	...	Mashonaland .	Basil H. Woodd.
15	9½	...	Somaliland .	H.R.H. the Duc d'Orléans.
15	10	...	Do. .	Gen. Sir Arthur Paget.
15 (C)	10	5 lbs. 8 oz.	South-East Africa	F. C. Selous.
15	10 ¹ / ₈	5 lbs. 6 oz.	East Africa .	Capt. A. E. F. Fawcus.
14 ⁷ / ₈	9	...	Do. .	G. L. Harrison.
14 ⁷ / ₈	9¼	5 lbs. 8 oz.	Do. .	Sir Thos. R. Dewar.
14 ⁷ / ₈	9 ⁷ / ₁₆	5 lbs.	N.W. Rhodesia .	J. H. Venning.
14 ³ / ₄	9 ⁵ / ₈	...	Do. .	J. Bracken.
14 ³ / ₄	9	...	South-East Africa	H. M. von Archer.
14 ³ / ₄	9	...	Matabililand .	Capt. Sir K. Fraser, Bart.
14 ¹ / ₆	10 ¹ / ₁₆	5 lbs.	East Africa .	C. C. Branch.
14 ¹ / ₆ (L)	9 ⁹ / ₁₆	5 lbs. 3 oz.	Do. .	Capt. M. Kincaid-Smith.
14 ³ / ₄	9 ⁷ / ₈	4 lbs. 8 oz.	S.E. Africa .	E. P. Frost.
14 ⁵ / ₈	...	...	Nigeria .	N. J. Dodd.
14 ⁹ / ₁₆	10 ¹ / ₁₆	4 lbs. 12 oz.	East Africa .	Major P. H. G. Powell-Cotton.
14½	9 ³ / ₄	4 lbs.	South Africa .	Sir Edmund G. Loder, Bart.
14½	9½	...	Do. .	Sir Abe Bailey.
14½	10	...	East Africa .	Norman B. Smith.
14½	10	5 lbs.	Do. .	H.R.H. the Duke of Connaught.
14 ³ / ₈	9 ³ / ₈	...	Rhodesia .	W. Robinson.
14¼	9¼	4 lb. 14 oz.	East Africa .	Hon. W. Guinness.
♀ 14¼	8¾	...	South-East Africa	F. Vaughan Kirby.

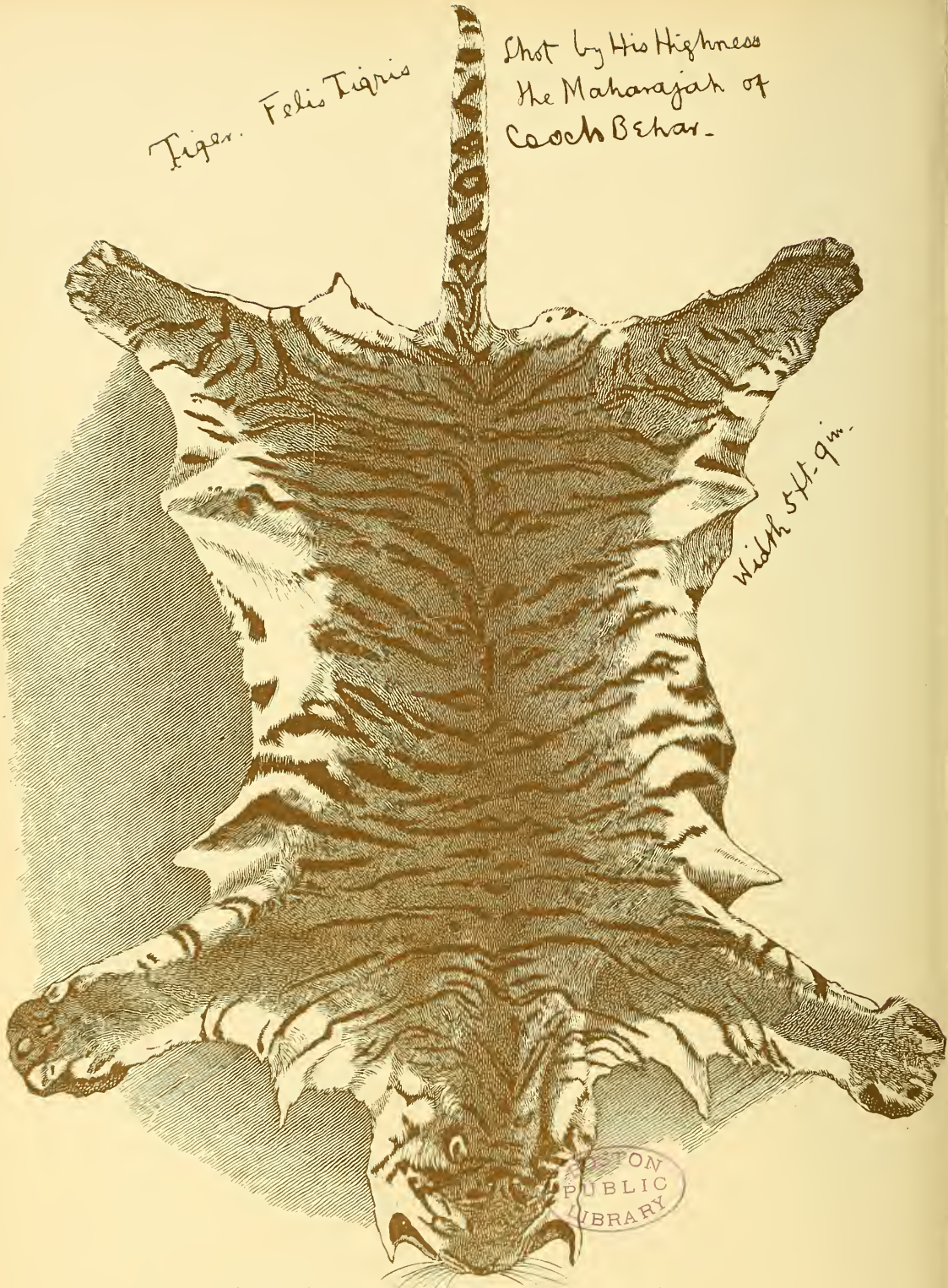
OWNER'S MEASUREMENTS.

17	11 ¹ / ₁₆	...	Delagoa Bay .	Berlin Museum.
16	10½	...	?	P. C. Keytel.
15 ⁷ / ₈	9 ³ / ₄	6 lbs.	South Africa .	J. Lamont.
15½ (H)	9 ³ / ₄	...	Mushukulumbwe .	Major A. St. H. Gibbons.
14¼ (K)	9¼	...	Somaliland .	A. E. Leatham.

¹ The measurements are taken from the summit of the occiput to the front of the upper jaw.

Tiger. *Felis Tigris*

Shot by His Highness
The Maharajah of
Cooch Behar.



width 5ft. 9in.

BOSTON
PUBLIC
LIBRARY

Length from nose to tip of Tail
before skinning
- dried skin

10ft 1/2 in
11 - 7 -

Indian Tiger-Skin.



Head of Tiger.

The TIGER (*Felis tigris*).

Sher or *Bagh*, Hindustani.

A much less noisy animal than the lion, the great striped cat of Asia is also a more variable species, of which several local races are recognised. First is the typical Bengal tiger, a large, long-limbed, lithe, and short-haired creature. A smaller and rougher-haired race (*F. tigris septentrionalis*, likewise known as *F. t. virgata*) inhabits the Caspian provinces of Persia, and also extends into the Caucasus. The Manchurian tiger (*F. t. mongolica*) is characterised by its large size, heavy build, short limbs, and the great length and thickness of the winter coat, which may be less fully striped than in Indian specimens. The Javan tiger (*F. t. sondaica*) differs, among other features, by the amount of white on the face. The Maharaja of Cooch Behar measured a tiger standing 3 ft. 10½ ins. at the shoulder.

Distribution.—From the Caucasus through Northern Persia, India, Assam, Burma, the Malay Peninsula, Sumatra, Java, and China, to Manchuria, Amurland, and Korea. In India ranging from an elevation of some 7000 feet in the Himalaya to Cape Comorin, but unknown in Ceylon.

OWNER'S MEASUREMENTS.

Length before skinned.		Length of body.		Length dressed.		Estimated girth of body.		Upper arm.		Girth.		Head.		Estimated height at shoulder.		Weight.		Locality.		Owner.		
ft.	ins.	ft.	ins.	ft.	ins.	ft.	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ft.	ins.	lbs.						
11	0	...	...	...	...	...	...	...	...	...	...	38	...	...	...	...	...	Seonda		H. H. the Maharaja of Datia.
10	7 (A)	7	0	12	1	56½	25	19½	36	3	4	491						Ramshai Há, Duars, Bengal ?		Col. Evans Gordon.		
10	5½	7	1½	19½				Lieut.-Gen. Sir R. Hart.	
10	5	6	11	12	10	51	26	18½	36	3	5	504						Cooch Behar		His Majesty The King.		
10	5				Sir Savile Crossley, Bart.	
10	4	7	1½	12	2½	52	...	21	39	3	6	...						Bijnor, United Provinces		The late A. M. Markham.		
10	4				E. W. Dixon.	
10	4 (D)				W. Holland.	
10	4 (F)				Major S. H. Pollen.	
10	3	7	1½	12	1	52	29	19½	36½	3	4½	487						Cooch Behar		H. H. the Maharaja of Cooch Behar.		
10	3 (C)	7	1	12	2	49	...	19½	32½	3	4	...						Patli Dun, United Provinces		The late A. M. Markham.		
10	3	7	2	...	...	58½	31	15	...	4	2	...						Seonda		H. H. the Maharaja of Datia.
10	2½	7	0	...	...	48½	26½	20	38½	3	3½	530						Cooch Behar		H. H. the Maharaja of Cooch Behar.
10	2	7	0	...	...	55½	26	20	...	3	3	546						Cooch Behar		H. H. the Maharaja of Cooch Behar.
10	2				H. H. the Maharaja of Alwar.	
10	2				H. H. the Maharaja of Alwar.	
10	2				Central Provinces	H. H. the Maharaja of Bikanir.
10	1¾	6	10	12	4	51½	28½	13¾	38	3	4½	462						Cooch Behar		H. H. the Maharaja of Cooch Behar.		
10	1½	7	1½	11	7	54	29	21	40½	3	8¾	600						Cooch Behar		H. H. the Maharaja of Cooch Behar.		
10	0½	12	6	66				Rewa, C.P.	H. Bliss.
10	0	6	11	...	...	52	26	21	36	3	4	540						Cooch Behar		H. H. the Maharaja of Cooch Behar.

10 0	...	11	6½	52	...	...	3	4	...	Piibhit	H. Rutledge.
10 0 (E)	...	12	2	...	...	...	...	...	...	Nepal Tarai	R. Nolan.
9 11½ (H)	6 10½	...	...	...	22	...	3	4	700	Central Provinces	Major M. D. Goring-Jones.
9 11	6 9	...	...	50½	28¾	20¼	37	3	3½	Cooch Behar	Count E. Hoyos.
9 10½	...	...	...	...	...	...	...	...	...	Mirzapur	P. B. Vander Byl.
9 10½	6 11	...	...	54	29	19½	39½	3	4	Cooch Behar	A. Ezra.
9 10½	6 10½	12	10	...	...	...	...	...	500	Do.	Major S. H. Pollen.
9 10½	6 10¼	...	...	55	...	...	...	...	...	Central India	Capt. A. R. B. Cossart.
9 10	6 6	...	...	...	...	...	...	...	...	Nepal Tarai	Col. B. B. Russell.
9 10	...	11	8	...	...	...	...	...	...	Hyderabad, Deccan	A. M. Rotheram.
9 10	...	...	...	...	...	...	...	...	...	Central Provinces	Prince A. Taxis.
9 8½	...	...	...	48	24½	17	34½	3	3¼	Hyderabad, Deccan	Major C. E. G. Norton and Capt. Sir K. Fraser, Bart.
9 8½	...	10	9	...	...	...	...	...	...	Central Provinces	Lieut.-Col. R. W. Mapleton.
9 8½	...	...	...	50	...	...	...	...	495	S. India	American National Collection.
9 8	...	...	...	45	...	...	...	...	...	Tarai	Lieut.-Col. B. D. Möller.
9 8 (B)	...	...	...	...	...	...	...	...	...	North Kanara	Lieut.-Col. L. L. Fenton.
♀ 9 5½	6 2½	...	...	42	20	15	35	...	...	Cooch Behar	Lord Villiers.
9 5½ (G)	...	...	...	...	...	17	43	...	...	Deccan	Major W. J. R. Wingfield.
9 8	6 4½	...	...	...	...	20	...	...	...	Nepal Tarai	Lieut.-Col. H. F. Dease.

Tigers have been recorded from time to time which are said to have measured up to 12 feet and over.



Manchurian Tiger-Skin.

Skulls.

Length from back to front. ¹	Breadth across the zygomatic arches.	Weight cleaned.	Locality.	Owner.
-15 $\frac{3}{4}$	...	...	Cooch Behar . . .	H.H. the Maharaja of Cooch Behar.
-15 $\frac{3}{4}$	11 $\frac{1}{8}$	...	?	Col. A. Pollock.
15 $\frac{1}{8}$	10 $\frac{1}{4}$	...	Cooch Behar . . .	Lord Stavordale.
-15 (A)	10 $\frac{3}{8}$	...	Bengal . . .	Col. Evans Gordon.
14 $\frac{7}{8}$ (F)	10	...	Duars . . .	Major S. H. Pollen.
14 $\frac{1}{2}$ (G)	10 $\frac{3}{8}$	...	Deccan . . .	Major W. J. R. Wingfield.
-14 $\frac{1}{2}$	10	...	Tarai . . .	Bombay Natural History Society.
14 $\frac{1}{2}$	10 $\frac{1}{8}$	...	Central Provinces .	Major W. H. Hunter.
-14 $\frac{1}{2}$ (C)	10 $\frac{1}{4}$	...	Bijnor District, United Provinces	The late A. M. Markham.
14 $\frac{1}{4}$	9 $\frac{5}{8}$	4 12	Duars . . .	Sir Edmund G. Loder, Bart.
14 $\frac{1}{4}$ (H)	10 $\frac{1}{2}$	5 2	Central Provinces .	Major M. D. Goring-Jones.
14 $\frac{1}{4}$	10 $\frac{3}{8}$	...	Do. . .	Lieut.-Col. E. A. D'Arcy Thomas.
14 $\frac{1}{4}$ (D)	9 $\frac{1}{2}$	...	Kanara Jungles .	W. Holland.
14 $\frac{1}{4}$ (E)	9 $\frac{1}{2}$	...	Tarai . . .	R. Nolan.
14 $\frac{1}{8}$	9 $\frac{3}{4}$	4 8	Rewah . . .	H.H. the Maharajah of Rewah.
13 $\frac{3}{4}$	9 $\frac{3}{8}$	4 10	N.E. Bengal . . .	A. M. Murdoch.
-13 $\frac{3}{4}$ (B)	9 $\frac{1}{4}$	...	North Kanara . .	Lieut.-Col. L. L. Fenton.
13 $\frac{3}{4}$	9 $\frac{3}{8}$	4 10	Mirzapur . . .	P. B. Vander Byl.
13 $\frac{3}{4}$	9 $\frac{1}{16}$	4 6	?	Col. H. W. Gordon.
13 $\frac{1}{2}$	10	5 0	Persia . . .	Lieut.-Col. R. L. Kennion.
♀ 13 $\frac{1}{4}$	9 $\frac{3}{16}$	...	Kalchi . . .	H. B. Learoyd.

- Owner's measurements.

A, B, C, D, E, F, G, H. For skins see pp. 494-495.

Skins.

Length of skin dressed.		Locality.	Owner.
ft.	ins.		
13	6	Mongolia . . .	A. Bignold.
12	4	Do.	H.H. the Sultan of Johore.
12	0	Do.	H.R.H. the Duc d'Orléans.
11	3 $\frac{1}{2}$	Do.	Col. W. Hall Walker.
10	8	Persia	Lieut.-Col. R. L. Kennion.

¹ See note on p. 491.

The LEOPARD (*Felis pardus*).

<i>Chita</i> , Hindustani.	<i>Nimr</i> , Sudani.
<i>Damissa</i> , Hausa.	<i>Ngo</i> , Waganda.
<i>Harvard</i> , M'Kua.	<i>Nyalugwi</i> , Manganza.
<i>Ingwi</i> , Zulu, Swazi, Matabili, and Matonga.	<i>Shabel</i> , Somali.
<i>Inkwi</i> , Bechuana and Basuto.	<i>Siveri</i> , Alomwi.
	<i>Tijger</i> , Cape Dutch.

The leopard has an even larger range than the lion, and is probably the most widely distributed of all the cats. Sportsmen in India recognise a larger "panther" and a smaller "leopard," although naturalists fail to distinguish them as separate forms. The typical representative of the species is the larger Indian leopard. African leopards often have the spots on the body of smaller size, and many of them without light centres, like those on the head. The West African race is *F. pardus leopardus*, and large-spotted East African leopards have been named *F. p. suahelica* and *F. p. ruwenzorii*. The Somali *F. p. nanopardus* is a very small light-coloured race. In Persia, Baluchistan, the mountains of Sind, and probably Kashmir, is found a race of the leopard (*F. p. panthera* or *tulliana*), characterised by its pale colour, long fur, and thick tail. The Malay leopard (*F. p. variegata*) is a large-spotted race; as is also the Korean and Chinese *F. p. orientalis*. Very distinct is the Amur and Manchurian *F. p. villosa*, an animal of heavy build, with a pale ground-colour to the fur, which is very long and thick, and the spots in the form of large complete rings. In the forest districts of Asia black leopards are not uncommon, and they also occasionally occur in Abyssinia, the home of the large *F. p. nimr*. Some Siamese leopards show small spots within the dark rosettes. Height at shoulder, from about 2 feet (India) to 2 feet 4 inches (Africa). A large leopard killed by Lieut.-Col. L. L. Fenton in the Gir Forest, Kathiawar, measured 7 feet $8\frac{1}{2}$ inches in length; the length of the tail being $35\frac{1}{2}$ inches, the girth of the neck $21\frac{1}{2}$ inches, of the forearm $11\frac{1}{2}$ inches, and of the body behind the shoulder $35\frac{1}{2}$ inches; weight, 160 lbs.

Distribution.—Africa, the Caucasus, Asia Minor, and Asia generally, with the exception of Northern Siberia, the Tibetan plateau, and Japan.

OWNER'S MEASUREMENTS—INDIAN SPECIMENS.

Length before skinned.		Total length dressed.		Weight.	Locality.	Owner.
ft.	ins.	ft.	ins.	lbs.		
8	6	...	...	...	Kashmir . . .	Major A. G. Arbuthnot.
8	4	...	...	...	S. India . . .	F. Gompertz.
8	4	...	...	...	Cooch Behar . . .	H.H. the Maharaja of Cooch Behar.
8	2 $\frac{1}{3}$	...	...	...	Do. . . .	Do.
8	1 $\frac{1}{2}$	...	...	...	Central Provinces . . .	Capt. G. W. Hemans.
8	0	...	...	154	Cooch Behar . . .	H.H. the Maharaja of Cooch Behar.
8	0	8	8 $\frac{1}{2}$	...	India	Count J. Potocki.
7	11	...	...	...	Mandla	O. Kauffmann.
7	10	8	4 $\frac{3}{4}$	...	Ganges Kadir . . .	See below. ¹
7	10	...	...	...	Mhow	Major F. W. H. Walshe.
7	10	...	...	...	Nepal	Lieut.-Gen. Kaiser Shumsher Jung, R.B.
7	9 $\frac{1}{2}$	8	6	...	Central Provinces . . .	Col. J. J. Harrison.
7	9	...	...	...	Nepal	C. H. H. B. Caldwell.
7	9	...	...	...	Oudh	Mrs. Innes.
7	8	...	...	...	Hyderabad, Deccan . . .	Major C. E. G. Norton and Capt. Sir K. Fraser, Bart.
7	8	...	...	...	Ganges Kadir . . .	Muttra Tent Club. ²
7	8	...	...	...	U. Burma	H. Shaw Dunn.
7	7	8	7 $\frac{1}{2}$	...	Siwaliks	E. H. E. Green.
7	7	8	10	...	Central Provinces . . .	Capt. R. D. Gardner.
♀	4	8	1	145	Bijnor District . . .	Major E. McK. Williams.

¹ Spared by Capt. H. Hoare (5th D.G.), Major J. G. Rotton (R.A.), and Major W. Gillman (R.H.A.).

² Spared by Major A. C. King and some officers of the 5th Lancers, when out with the Muttra Tent Club.

The following are the dimensions of two leopards shot in Ceylon by Count Scheibler:—

	Male.		Female.	
	ft.	ins.	ft.	ins.
Length from tip of nose to end of tail	7	0	6	4
„ „ root of tail	4	3 $\frac{1}{2}$	3	7
Height at shoulder (estimated)	2	2 $\frac{1}{2}$	1	9
Girth	2	7	2	1
Circumference of upper arm	0	13	0	10
„ forearm	0	10 $\frac{3}{4}$	0	8 $\frac{1}{2}$

The following specimen belongs to one of the Chinese or Manchurian races:—

Length before skinned.		Total length dressed.		Weight.	Locality.	Owner.
ft.	ins.	ft.	ins.	lbs.		
♂	5	11	...	65	Tai Kung Shan Moun- tains	Commander the Hon. R. O. B. Bridgeman, R.N.

OWNER'S MEASUREMENTS—AFRICAN SPECIMENS.

Length before skinned.		Height at shoulder.		Weight.		Locality.	Owner.
ft.	ins.	ft.	ins.	lbs.	lbs.		
8	7	...	...	...	...	East Africa . . .	K. V. Painter.
8	1½	...	...	...	...	Niwimbi, Portuguese Nyasaland	J. Sealy-Bell.
7	10½	2	7½	...	...	Sudan . . .	Marquis Pizzardi.
♀7	9	2	3½	...	...	Matabililand . . .	Rhodesia Museum.
7	9	...	...	...	...	Sudan . . .	Gustav von Dippe.
7	7½	2	6	...	...	East Africa . . .	Percy C. Madeira.
7	6	...	...	...	...	Do. . .	Lady Grisel Hamilton.
7	4	...	...	...	...	Do. . .	L. F. Eames.
7	3½	...	...	...	...	Somaliland . . .	Count J. Potocki.
7	3¼	...	...	136½	...	N.W. Rhodesia . . .	C. H. S. Bellis.
7	3	...	...	...	...	Wadelai, E.C. Africa . . .	Maj.-Gen. W. P. Pulteney.
7	2	...	...	...	...	Somaliland . . .	Count Scheibler.
7	0	...	...	110	...	Sudan . . .	W. B. Cotton.
6	10½	2	4½	...	...	Gondokoro . . .	Dr. A. MacCarthy Morrogh.
6	10	...	...	...	...	Somaliland . . .	Count Scheibler.
6	10	...	...	140	...	Nyasaland . . .	A. White.
6	3	...	...	...	...	Somaliland . . .	Norman B. Smith.
6	0	...	...	...	...	Do. . .	Count E. Hoyos.
♀5	10½	2	1	55	...	East Africa . . .	Capt. R. Meinertzhagen.
5	7	1	10	...	...	Nigeria . . .	Maj.-Gen. T. D. Pilcher.

(girth 21½ ins.)

The following specimens were shot and measured by Mr. F. Vaughan Kirby; the first being from the Nguanetsi River, and the second from the Matamiri Bush, S.E.A. :—

Length, tip to tip in a straight line.		Length over all—"sportsman's" measurement.		Estimated shoulder height.		Girth of neck.	Girth behind shoulder.	Girth of forearm.	Length of skull.	Zygomatic width.	Cleaned weight.	
ft.	ins.	ft.	ins.	ft.	ins.	ins.	ins.	ins.	ins.	ins.	lbs.	oz.
6	11	7	2	2	7	22	35½	12½	9½	6½	1	8
6	9	7	2	2	7	20	33½	11½	9	5½	...	...

Skulls.

Total length.	Width.	Weight.	Locality.		Owner.
ins.	ins.	lbs. oz.			
11¼	7⅞	1 12	Gabun . . .		Sir Edmund G. Loder, Bart.
10⅝	6⅜	...	N. Nigeria . . .		B. C. Parr.
-10¼	6⅞	...	Bijnor District, United Provinces		The late A. M. Markham.
10¼	...	...	White Nile . . .		A. L. Butler.
-10⅜	6¼	...	Gir Forest, Kathiawar . . .		Lieut.-Col. L. L. Fenton.
10	6½	1 6	Belgaum, India . . .		Sir Edmund G. Loder, Bart.
9⅞	6½	...	East Africa . . .		L. F. Eames.
9	5½	1 3	Somaliland . . .		J. H. Thomson.

- Owner's measurements.

The SNOW-LEOPARD or OUNCE (*Felis unca*).

Shieh Pao, of Chinese.

Although the Persian leopard is in some degree intermediate in respect to colour and the length of the coat, the ounce differs from the leopard by the ground-colour of the long and dense fur being dirty white, with the spots on the back, sides, and tail in the form of large, irregular, ill-defined and interrupted rings, and by the great thickness of the tail, which scarcely tapers, and is about three-quarters the length of the head and body. Height at shoulder, about 2 feet 4 inches.

Distribution.—The high ranges of Central Asia, including Gilgit, Hunza, Turkestan, Trans-Baikalia, Ladak, Tibet, Amurland, and Western China, extending in the north-west to the Altai, and in the west, it is said, to Persia. In Prince Demidoff's *Hunting Trips in the Caucasus* a snow-leopard is figured as coming from that range, but the animal found there is *F. pardus panthera*. The snow-leopard generally dwells at elevations of over 8000 feet, but descends in Gilgit during winter to 6000 feet.

Length dressed.		Weight.	Locality.	Owner.
ft.	ins.			
8	8	...	Central Asia . . .	A. Ezra.
8	8	...	Baltistan . . .	Capt. C. M. Hawes.
8	6	...	?	Capt. B. C. Graham.
8	6	Skull, $7\frac{3}{4} \times 5\frac{1}{4}$	Baltistan . . .	R. Rankin.
8	$2\frac{1}{2}$	...	Do. . . .	E. Langworthy.
(raw)	7	10	Near Leh . . .	Lieut.-Col. S. Frewen.
-7	8	...	China . . .	M. Mitchell.
-7	$5\frac{3}{4}$	...	Pamir . . .	Viscount Edmond de Poncins.
-7	5	...	?	Lieut.-Col. F. J. Harden.
-7	4	Skull, $7\frac{1}{16} \times 4\frac{7}{8}$	Kashmir . . .	Lieut.-Col. H. C. Tytler.
-7	4	(24 inches at shoulder)		The late R. A. Sterndale.

— Owner's measurements.

The **CLOUDED LEOPARD** (*Felis nebulosa*).

Kwei ko-pao, Chinese.

The *arimau-dahan*, as this species is called by the Malays, is the size of a small leopard, with a very long and thickly furred tail, and large upper tusks. The ground-colour of the fur varies from greyish brown to fulvous, upon which are large dark blotches, frequently bordered in part with black. In old specimens the blotches often disappear, leaving only the black borders.

Distribution.—From the Sikhim and Bhutan Himalaya, through Assam, Burma, Siam, and the Malay Peninsula, to Sumatra, Java, and Borneo. Represented by a smaller race (*F. nebulosa brachyurus*), with somewhat different markings and a shorter tail, in Formosa.

Skins.

Length dressed.		Weight.	Locality.	Owner.
ft.	ins.	lbs.		
—6	6	...	Assam . . .	The late B. H. Hodgson.
6	5	...	Yun-nan . . .	M. Mitchell.
—6	4	44½	?	The late R. A. Sterndale.
6	3	...	?	Sir Guy Fleetwood Wilson.
5	10	...	Sumatra . . .	British Museum.
5	9	...	?	Major B. R. M. Glossop.
5	7½	...	Assam . . .	P. Russel.

— Owner's measurements.

Skulls.

Basal length from back to front.	Breadth.	Locality.	Owner.
6.2 ins.	4.75	Assam . . .	The late B. H. Hodgson.

The JAGUAR (*Felis onca*).

This cat may be regarded as the American representative of the leopard, which it fully equals, even if it does not exceed, in size. The colour and markings are generally similar to those of the latter, but the dark rings are larger and arranged more definitely in groups, each ring usually enclosing one or more dark central spots, and the enclosed light area being of the same tint as the general ground-colour of the fur, which is typically of a rich tan. Usually seven or eight more or less distinct longitudinal rows of rosettes may be noticed on each side of the body. The tail is shorter than a leopard's.

Distribution.—America, from Louisiana, Texas, and Northern Mexico to about the Rio Negro on the northern confines of Patagonia in lat. 40° S.

Length before skinned.		Length dressed.		Locality.	Owner.
ft.	ins.	ft.	ins.		
-9	3	9	3	Brazil . . .	Count Henry Coudenhove.
-8	3 $\frac{3}{4}$	...		Do. . . .	Do.
-6	11	7	9	Paraguay . . .	Col. J. J. Harrison.

The PUMA (*Felis concolor*).

With the exception of the small and long-tailed jaguarondi and eyra, the puma (pronounced pooma) is the only uniformly coloured cat found in America, where its range extends from British Columbia and Maine in the north to the Strait of Magellan in the south. The size is inferior to that of the jaguar, the height at the shoulder being about 2 feet, and the weight 150 lbs. The general colour of the fur is tawny, tending, like that of the white-tailed deer, to reddish in summer and to greyish in winter, with the middle of the back darker, and a whitish patch on the back of the otherwise black

ears. But with such an enormous geographical range, it is inevitable there should be much local variation; and a number of races are now recognised, most of which are distinguished by size or the redder or greyer tint of the fur. A Patagonian race has pale ears.

Length before skinned. ft. ins.	Weight. lbs.	Locality.	Owner.
-8 6	about 150	?	A. Pendarves Vivian.
-7 6½	...	Brazil	Count Henry Coudenhove.
-7 5	...	Gallegos River, Patagonia .	W. Moncreiffe.
-7 3	...	Fraser River, British Columbia .	The late J. Fannin.
-7 0	...	Wyoming	J. L. Scarlett.

- Owner's measurements.

LYNXES (*Felis* [*Lynx*] *lynx*, etc.).

The lynxes form a well-marked group connected with the more typical members of the cat tribe by the jungle-cat (*F. chaus*), and distinguished by the tuft of long hairs at the summit of the ears, and the absence of the first upper cheek-tooth. From the others the caracal (*F. caracal*), of Africa and India, is broadly distinguished by its long tail and uniform rufous colour. The short-tailed lynxes are, however, a group in which it is very difficult to determine whether the variations indicate distinct species or local races. In the typical European lynx (*F. lynx*) the tail is very short, the throat has a ruff of long hair, and the coat is spotted with dark brown, the Tibet lynx (*F. lynx isabellina*) is a pale race, and the Canadian lynx (*F. lynx canadensis*), which ranges as far south as California, is another race; while the Caucasian and Persian lynx is now classed as a distinct species, *F. cervaria*. The red lynx (*F. rufa*), which is also widely extended in America, and has numerous local races, is a third species. From differences in the form of the skull, the Spanish lynx (*F. pardina*), which is a fully spotted animal, is also classed as a distinct species. It ranges over a large portion of Southern Europe, including Turkey, Greece, Sicily, Sardinia, and Spain and Portugal. The ordinary lynx stands from 16 to 18 inches at the shoulder.

A.—EUROPEAN LYNX (*Felis lynx*).

Length before skinned.	Estimated height at shoulder.	Locality.	Owner.
-49 $\frac{1}{4}$ ins.	...	Andalusia . . .	Abel Chapman.
-46 ,,	...	Near St. Petersburg .	Count Bobrinskoy.
-42'9 ,,	...	Eastern Carpathians .	Prince Henry of Liechtenstein.
-42 ,,	23	Do. .	Count Henry Coudenhove.

B.—CANADIAN LYNX (*F. lynx canadensis*).

Length before skinned.	Height at shoulder.	Weight.	Locality.	Owner.
-38 ins.	25	60 lbs. (about)	Wyoming . . .	Major G. Dalrymple White.
- Owner's measurements.				

C.—RED LYNX (*Felis rufa*).

Length before skinned.	Height at shoulder.	Weight.	Locality.	Owner.
-33 ins.	17	...	Wyoming . . .	Capt. M. McNeill.
-32 ,,	22	40 lbs. (about)	Nova Scotia . . .	Major G. Dalrymple White.

D.—CARACAL (*Felis caracal*).

Flat skin.	Locality.	Owner.
-46 $\frac{1}{2}$ ins.	Nr. Grahamstown, S. Africa . . .	Dr. H. Smith.

- Owner's measurements.

The **HUNTING-LEOPARD** or **CHITA** (*Cynælurus jubatus*).

Although this animal is commonly called chita (cheetah) by Anglo-Indian sportsmen, that name is at least as often applied in India to the leopard. From all the true cats and lynxes the hunting-leopard differs by the claws being capable of only partial withdrawal into their sheaths, so that their tips are always exposed. The body also is more slender, and the limbs are proportionately longer. The black spots on the skin are small and without light centres, like those on the head of the leopard. Length, 7 feet or less; height at shoulder, 30 to 39 inches. A specimen speared by Lieut.-Col. L. L. Fenton in Kathiawar measured 6 feet $\frac{1}{4}$ inch in length, the tail being 2 feet $2\frac{1}{4}$ inches.

In Africa the chita is the "Ihlose" of the Zulus and Swazis. It is distributed sparsely throughout S.E. Africa. Hunting-leopards usually hunt in couples, and fairly stalk their game, securing it with a swift rush at the last. Mr. F. Vaughan Kirby wrote that "I have seen a party of six hunting together and another of eight. Though I have often tried, I have never yet succeeded in running into one on horseback; they are incredibly swift of foot. They invariably kill their prey by strangulation." Many local races have been named.—

Distribution.—Africa and South-Western Asia, extending from Persia to Western Turkestan and the countries east of the Caspian, and eastwards into India; unknown in the latter country on the Malabar coast and to the north of the Ganges, as it also is in Ceylon.

Length before skinned.		Length of tail.		Estimated height at shoulder.	Locality.	Owner.
ft.	ins.	ft.	ins.			
-7	9	...	...	...	East Africa . . .	Capt. R. Meinertzhagen.
-7	$3\frac{1}{4}$	...	...	...	N.W. Rhodesia . . .	C. H. S. Bellis.
-6	6	2	2	...	East Africa . . .	Percy C. Madeira.
-6	6	2	$6\frac{1}{2}$	...	Zululand . . .	A. Cameron.
-6	$4\frac{3}{4}$	2	$3\frac{1}{2}$	$28\frac{1}{2}$	N.E. Transvaal . . .	Dr. Percy Rendall.
-6	3	2	$4\frac{3}{4}$	$29\frac{1}{2}$	East Africa . . .	H. C. Williams.

— Owner's measurements.

The following are the dimensions of a specimen shot in the Eastern Transvaal by Mr. F. Vaughan Kirby:—

Total length in straight line.	Do. over all.	Tail.	Vertical height.	Girth of forearm.	Do. shoulders.
6 ft. 8 ins.	7 ft. 7 ins.	2ft. 9 ins.	2 ft. $11\frac{1}{2}$ ins.	$8\frac{1}{4}$ ins.	31 ins.

The SPOTTED HYÆNA (*Hyæna [Crocuta] crocuta*).

<i>Uaraba</i> , Somali.	<i>Marfain</i> , Sudani.
<i>Yangula</i> , Danakil.	<i>Ugandu</i> , Mpisi.
<i>Jib</i> , Abyssinian.	<i>Setongwani</i> , Barotsi.
<i>Kuva</i> , Hausa.	<i>Piri</i> , Ngami.
<i>Kochupa</i> , M'Kua.	<i>Chimbwi</i> , Chilala and Chibisa.

The hyænas form a small family of Carnivora allied in some respects to the cats, but distinguished by the structure of the skull, the more numerous teeth (which are, however, to a considerable extent cat-like), and the four-toed feet, with non-retractile claws. The spotted hyæna, of which there are several races, is the largest of the three species, and takes its name from the large dark blotches on its tawny coat. Its carnassial teeth are more cat-like than those of the other species.

Distribution.—Africa, south of the Sahara.

Length before skinned.	Length of tail.	Extreme length over all.	Estimated standing height.	Girth behind shoulders.	Weight.	Locality.	Owner.
ft. ins.	ft. ins.	ft. ins.	ft. ins.	ins.	lbs.		
-5 0	...	...	...	29	121	East Africa	Capt. R. Meinertzhagen.
-4 9½	1 1	6 3	3 0	39½	...	...	F. Vaughan Kirby.
-4 8	...	...	2 6	...	...	Somaliland	J. H. H. Dodds.

Skulls.

Length.	Width.	Weight.	Locality.	Owner.
ins.	ins.	lbs. oz.		
-12¼	7¼	2 8	South-East Africa	F. Vaughan Kirby.
-12¼	7⅝	2 12	Zomba, B.C.A.	D. MacAlpine.
12	8	...	Somaliland	J. H. H. Dodds.
11½	7⅞	...	Benue Valley	Capt. E. J. Wolseley.
-11	7½	...	Somaliland	Viscount Edmond de Poncins.
-10⅝	6⅝	...	South-East Africa	Sir Edmund G. Loder, Bart.
-10⅝	6⅞	2 3	East Africa	The late Rear-Admiral R. A. J. Montgomerie, R.N.

The STRIPED HYÆNA (*Hyæna striata*).

Distribution.—India, Arabia, Syria, etc., and North and East Africa.

Length before skinned.	Length of tail.	Standing height.	Locality.	Owner.
ft. ins.	ft. ins.	ft. ins.		
-4 4½	...	2 2½	Somaliland	J. H. H. Dodds.
-3 6	1 5	...	India	The late Dr. T. C. Jerdon.

- Owner's measurements.



Skull of Kamchatkan Bear.

BEARS (Ursidæ).

Bears are so unlike other animals and so like one another that no one has the slightest difficulty in recognising a member of the group when he sees it. They constitute a family of Carnivora—the *Ursidæ*—and are spread over the greater part of the globe, with the exception of Africa to the south of the Sahara desert, and the Australasian islands. As some of their leading characteristics, mention may be made of their large bodily size, clumsy build, shaggy fur, generally uniform coloration, the very short tail, and the application of the whole sole of the foot to the ground in walking. The skull and teeth are likewise very peculiar and distinctive, although these need not be taken into consideration in this place.

In consequence of the marked similarity to one another of most members of the group, it is a matter of extreme difficulty to come to a definite conclusion as to the number of species of bears. The typical member of the group is the familiar brown bear (*Ursus arctus*) of Europe, in which the colour is generally a darker or lighter shade of brown, but occasionally tends to greyish. The Syrian bear (*U. arctus syriacus*), in which this greyish tinge predominates, may be regarded as a local variety, and the same is the case with the snow-bear of Kashmir (*U. arctus isabellinus*), in which the colour is generally a light creamy brown. European specimens probably seldom exceed 8 feet, but the East Siberian and Kamchatkan bears (*U. arctus piscator*) grow to 9 feet. Even more gigantic is the Kodiak bear (*U. arctus middendorffi*) of Kodiak Island, Alaska; while the Yezo bear (*U. arctus yesoensis*) of Japan is another large race, with much the external appearance of a grizzly. The Alaskan bear (*U. arctus dalli*), from the

mainland of Alaska, is also a huge animal, slightly smaller than the one from Kodiak Island, with more resemblance to an ordinary brown bear than to a grizzly. The grisly, or grizzly, of the Rocky Mountains is a smaller bear, with longer, straighter, and whiter claws, and is generally regarded as representing a second species (*U. horribilis*). A race of this species is the Barren-Ground bear (*U. h. richardsoni*); and the species may be represented in Asia by the Tien Shan *U. leuconyx*. Another member of the group is the Atlas bear (*U. arctus crowtheri*), of North-Western Africa, still imperfectly known. The extinct cave-bear (*U. spelæus*) is a large species allied to the brown bear.

The little blue bear (*U. pruinosus*) of Tibet, with more or less of white on the head and shoulders, seems to form a distinct species. The same is the case with the American black bear (*U. americanus*), which exhibits distinctive features in the skull and teeth, and is generally black, although it may be grey, or even white (*U. a. kidderi*). The Himalayan black bear (*U. torquatus*), which may be recognised by the conspicuous white gorget on the breast, is a relative of the last-named species. In Japan it is represented by the Japanese black bear (*U. japonicus*). One of the smallest species of the genus is the very distinct Malay bear (*U. malayanus*), which ranges into Sze-chuan; and allied to this is the spectacled bear (*U. ornatus*) of the Peruvian and Bolivian Andes, distinguished by the light-coloured rings generally surrounding the eyes from which it derives its name.

The most distinct of all the species included in the genus *Ursus* is the Polar bear (*U. maritimus*), so distinct, indeed, that many naturalists consider it ought to form a genus by itself. Externally its chief characteristics are its white coat, and the presence of a certain amount of hair on the soles of the feet; both these peculiarities being evidently adaptations to the Arctic habitat of the animal. Very old Polar bears exhibit a tendency to the development of a brownish tinge in the fur. Last of all comes the Indian sloth-bear (*Melursus ursinus*), which is so different from the other kinds as to represent a genus by itself. It is too well known an animal to need description, some of its characteristics being the long and bare snout, the ragged, wiry hair, extensile tongue, small cheek-teeth, and the diminished number of front teeth.

(a) Skulls.

Basal length from back to front.	Width across the zygomatic arches.	Weight cleaned.	Race, or Species.	Locality.	Owner.
ins.	ins.	lbs. oz.			
-20 $\frac{1}{2}$	11 $\frac{1}{4}$	...	...	Alaska .	J. W. Anderson.
18 $\frac{3}{4}$	11 $\frac{3}{8}$	12 0	Cave bear	Europe .	Sir Edmund G. Loder, Bart.
-18 $\frac{3}{8}$	10 $\frac{3}{4}$	...	?	Alaska .	F. T. Colby.
18	11	10 0	Kamchat- kan	Siberia .	Hon. Walter Rothschild.
17 $\frac{1}{2}$	10 $\frac{7}{8}$	8 4	Alaskan .	Alaska .	Capt. C. R. E. Radclyffe.
-17 $\frac{1}{4}$	10 $\frac{3}{8}$	...	Do. .	Do. .	Rev. Dr. R. J. Nevin.
17 $\frac{1}{4}$	10	6 12	Kamchat- kan	Kamchatka .	P. Niedieck.
16	9 $\frac{7}{8}$	5 8	Polar .	Novaia Zemlia	J. Lamont.
15 $\frac{7}{8}$	10 $\frac{1}{2}$	5 13	Do. .	Polar Seas .	Sir Edmund G. Loder, Bart.
15 $\frac{1}{2}$ $\frac{3}{8}$	9 $\frac{5}{8}$	5 8	Do. .	Greenland .	C. A. Hamilton.
15 $\frac{3}{4}$	9 $\frac{1}{2}$ $\frac{3}{8}$	5 14	...	Kamchatka .	Capt. C. R. E. Radclyffe.
15 $\frac{1}{2}$	10 $\frac{3}{8}$	6 1	...	Alaska .	L. J. Cadbury.
15 $\frac{1}{2}$ (D)	9 $\frac{1}{2}$	5 10	Grizzly .	Brit. Columbia	Sir Peter Walker, Bart.
15 $\frac{3}{8}$	9 $\frac{1}{4}$	4 10	Kamchat- kan	Kamchatka .	Capt. R. E. R. Benson, R.N.
15 $\frac{1}{8}$	9 $\frac{7}{16}$	5 10	Do. .	Do. .	W. S. Race.
14 $\frac{1}{8}$	9	...	Brown .	Do.	St. George Littledale.
-14 $\frac{5}{8}$	8 $\frac{1}{8}$	4 2	Grizzly .	Montana .	Sir Edmund G. Loder, Bart.
14 $\frac{1}{2}$	8 $\frac{1}{4}$	4 8	Do. .	Brit. Columbia	S. B. Bennett.
14 $\frac{3}{8}$ (C)	8 $\frac{1}{4}$	5 0	Do. .	New Mexico .	Montague Stevens.
14 $\frac{1}{4}$	8 $\frac{1}{4}$	3 12	Brown .	Europe .	Walter Winans.
13 $\frac{5}{8}$	8 $\frac{3}{4}$	...	Snow .	Kashmir .	Capt. B. H. Shaw-Stewart.
-13 $\frac{1}{8}$	8	3 1	Do. .	Do.	Sir Edmund G. Loder, Bart.
12 $\frac{7}{8}$	8 $\frac{9}{16}$	3 3	Black .	Nepal .	Lieut.-Gen. Kaiser Shumsher Jung, R.B.
-12 $\frac{7}{8}$	7	...	Sloth .	Mysore .	Capt. M. McNeill.
12 $\frac{1}{2}$	7 $\frac{3}{8}$	...	Do. .	Cent. Prov. .	C. F. Egerton.
12 $\frac{1}{2}$	7	...	Grizzly .	Wyoming .	J. L. Scarlett.
12 $\frac{1}{2}$ (B)	6 $\frac{3}{4}$	...	Sloth .	Cent. Prov. .	Surgeon-Major M. O'C. Drury.
12 $\frac{3}{8}$	7 $\frac{5}{8}$	...	Snow .	Kashmir .	A. Ezra.
12 $\frac{3}{8}$	7 $\frac{1}{2}$	...	Do. .	Do. .	Col. C. B. Wood.
12 $\frac{3}{8}$	7 $\frac{3}{4}$	3 0	Black .	Do. .	P. B. Vander Byl.
12 $\frac{1}{8}$	7 $\frac{5}{8}$	...	Grizzly .	Wyoming .	J. L. Scarlett.
12	7 $\frac{1}{8}$	...	Sloth .	Cent. Prov. .	C. F. Egerton.
-11 $\frac{7}{8}$	7 $\frac{1}{4}$	...	Black .	Newfoundland	Percy C. Madeira.
11 $\frac{1}{2}$ (A)	6 $\frac{3}{4}$	...	Brown .	W. Caucasus	St. George Littledale.

OWNER'S MEASUREMENTS.

Length before skinned.	Length of raw skin.	Estimated height at shoulder.	Girth.	Weight.	Race, or Species.	Locality.	Owner.
ft. ins.	ft. ins.	ft. ins.	ft. ins.	lbs.			
...	13 6	...	...	1656	Kodiak	Kodiak Island, Alaska	J. C. Tolman.
...	11 6	...	...	...	?	Alaska	American Museum of Natural History.
...	11 0	4 0	...	1460	?	Do.	J. W. Anderson.
...	9 8	...	...	...	Alaskan	Do.	South African Museum.
...	9 5	...	...	...	Do.	Do.	Dublin Museum.
...	9 5	4 6	...	...	Polar	Baffin Bay	W. Livingstone-Learmonth.
...	9 5	...	...	...	Alaskan	Alaska	Hon. Walter Rothschild.
7 9½	9 4	...	...	1014	Do.	Do.	Capt. C. R. E. Radclyffe.
...	-9 4	8 6 (across front paws)	...	...	Do.	Do.	American National Collection.
...	8 10	4 0 (mounted)	...	...	Do.	Do.	British Museum.
8 10	...	...	...	...	Polar	Barents Seas	Duke of Peneranda.
8 7	...	...	...	1600	Do.	Arctic Seas	Captain Lyon.
...	8 7	...	...	...	Grizzly	Wyoming	T. P. Kempson.
8 7	...	...	...	...	Polar	Spitzbergen	A. Barclay Walker.
8 6	...	...	...	...	Do.	Franz Josef Land	Dr. S. H. T. Armitage.
8 5	...	...	...	...	Do.	Greenland	Col. Max C. Fleischmann.
...	8 5	...	...	...	Black	Kashmir	Lieut.-Col. W. Westropp White.
8 3	...	...	...	...	Kamchatkan	Kamchatka	Dr. F. H. H. Guillemard.
8 2	...	...	...	1020	Polar	Greenland	C. A. Hamilton.
...	8 0½	...	...	...	Grizzly	Wyoming	T. W. H. Clarke.
8 0	...	4 3½	...	...	Alaskan	Alaska	J. H. Kidder.
7 8	...	...	...	...	Snow	Kashmir	W. Graham.
...	8 0(D)	3 11	...	...	Grizzly	Brit. Columbia	Sir Peter Walker, Bart.
...	8 0(C)	...	...	735	Do.	New Mexico	Montague Stevens.
...	7 11	...	...	800 (about)	Brown	Norway	Capt. Gerard Ferrand.
...	7 9	...	...	...	Snow	Kashmir	Lieut.-Col. C. F. Blane.
7 1	...	...	...	...	Sloth	?	W. L. Hogg.
...	7 5½	...	...	...	Black	Wyoming	T. W. H. Clarke.
...	7 5½	...	...	...	Brown	Hungary	Count M. Andrassy.
...	7 4	...	...	...	Snow	Kashmir	Capt. B. H. Shaw-Stewart.

Length before skinned.	Length of raw skin.	Estimated height at shoulder.	Girth.	Weight.	Race, or Species.	Locality.	Owner.
ft. ins.	ft. ins.	ft. ins.	ft. ins.	lbs.			
...	7 0 $\frac{3}{4}$	...	...	680 (about)	Brown	Lithuania	Prince Radziwill.
...	7 0	...	...	...	Snow	Kashmir	Major C. McI. Ritchie.
...	7 0	3 2	...	...	Sloth	India	Lieut.-Col. A. E. Ward.
...	6 11	...	...	...	Black	Wyoming	Col. J. J. Harrison.
...	6 10	3 0	4 4 $\frac{1}{2}$ forearm	423	Sloth	Cooch Behar	H.H. the Maharaja of Cooch Behar.
...	6 10	4 1	...	...	?	Alaska	R. P. Blake.
...	6 9 $\frac{1}{2}$	...	25	...	Snow	Kashmir	S. V. Occleston.
...	6 8 $\frac{3}{4}$	...	...	...	Black	Garhwal	Capt. A. W. Robertson-Glasgow.
...	6 8 (B)	...	...	...	Snow	Kashmir	A. Ezra.
...	6 8	4 0	...	625	Kodiak	Kodiak I.	A. W. Merriam.
6 7	...	...	...	...	Black	Kashmir	Lieut.-Col. L. L. Fenton.
...	6 7	...	...	...	Do.	N. Brunswick	Sir Kenneth Crossley.
...	6 6	...	...	700	Do.	Nepal	Lieut. - Gen. Kaiser Shumsher Jung, R.B.
...	6 6	...	...	...	Grizzly	Wyoming	Count E. Hoyos.
...	6 5	...	...	...	Do.	Do.	J. L. Scarlett.
...	6 4	...	...	...	Black	Kashmir	The Master of Belhaven.
...	6 3	...	...	...	Grizzly	Wyoming	J. L. Scarlett.
...	6 2 $\frac{1}{2}$	...	...	...	Black	Brit. Columbia	Count E. Hoyos.
...	6 1 $\frac{1}{2}$	...	...	...	Sloth	Mandla, Cent. Provinces	Capt. B. H. Boucher.
...	6 1	...	...	...	Cinnamon	Wyoming	Col. J. J. Harrison.
...	6 0 $\frac{1}{2}$	...	...	...	Sloth	Hyderabad	Count E. Hoyos.
...	6 0	3 0	...	280	Do.	?	The late G. P. Sanderson.
...	6 0	...	...	...	Black	Newfoundland	Percy C. Madeira.
...	5 10 $\frac{1}{2}$	3 0	3 4	...	Snow	?	Lieut.-Col. H. M. Biddulph.
...	5 5	2 5 $\frac{3}{4}$	2 10 $\frac{3}{4}$	250 about	Black	Brit. Columbia	Count Scheibler.
...	♀ 5 2 $\frac{1}{2}$	2 11 $\frac{1}{4}$	4 4	600 about	Grizzly	Do.	Do.
...	5 2 (A)	...	...	...	Brown	W. Caucasus	St. George Littledale.
5 2	...	3 4	2 8	242	Do.	W. Kan-su	G. Fenwick-Owen.
...	4 7	...	...	...	Do.	Asia Minor	H. O. Whittall.

N.B.—Some of the specimens entered as "Grizzly" may be the Barren-Ground bear.



Head of Walrus.

The WALRUS (*Odobænus rosmarus*).

The unwieldy seal-like animals commonly known by a corruption of the Scandinavian name valross (whale-horse) form in some respects a connecting link between the true seals and the eared seals, although differing from both in the huge upper tusks which depend from the muzzle of males and females alike, as also by the thick yellow bristles covering the muzzle itself. Like the true seals, walruses have lost all traces of external ears, but, unlike the former, and like the eared seals, their huge hind-flippers are turned forwards beneath the body when on land. The molar teeth have simple flattened crowns, unlike those of most seals. Although young and adolescent walruses have fairly thick coats of yellowish fur, in old individuals the tough hide becomes almost bare, except for the aforesaid bristles. Walruses are estimated to attain a weight of from 2250 to 3000 lbs.

Walruses are exclusively confined to the Arctic seas, where they spend much of their time on the ice. There are two kinds, which

may be regarded as races of a single species; the one restricted to the North Atlantic, and the other to the North Pacific. The distribution of these animals is by no means of circumpolar extent, the Atlantic walrus (*O. rosmarus*) apparently not ranging on the Asiatic coast east of the mouth of the river Lena; while in America walruses do not appear to inhabit the vast extent of coast lying between the western shore of Hudson Bay and Alaska. The Pacific walrus (*O. r. obesus*), which is the larger of the two, with longer tusks, always had a restricted range, and is now scarce. Formerly the Atlantic walrus occurred in countless thousands, but in accessible situations its numbers have been greatly reduced, owing to incessant persecution for the sake of its valuable oil and ivory. Between 1870 and 1880 at least 100,000 of these animals are estimated to have been slain.

The largest walrus shot by Mr. W. Livingstone-Learmonth measured 12 feet 8 inches in length, and the tusks when extracted measured $25\frac{1}{2}$ inches in length and $8\frac{1}{2}$ in circumference at the largest part; but, as is the case with those of nearly all old bull walruses, they were much broken at the points.

Tusks.

Total length of tusk.	Length from gum.	Weight. lbs. oz.	Girth.	Locality.	Owner.
36	$30\frac{1}{2}$	...	$8\frac{1}{2}$	?	Sir Thos. Hesketh, Bart.
$-33\frac{1}{2}$	$25\frac{1}{2}$	7 10 $\frac{1}{2}$	$8\frac{1}{2}$	Kamchatka	British Museum (The late Major G. E. H. Barrett-Hamilton).
$32\frac{3}{8}$	...	...	$8\frac{3}{8}$	?	Bethnal Green Museum.
32	...	10 12	$10\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
-32	...	9 9	...	Pacific	Norwich Museum.
-32	...	8 8	$9\frac{1}{2}$	Point Barrow	British Museum (Col. H. W. Feilden).
$-31\frac{1}{2}$	...	...	$8\frac{7}{8}$	Do.	American National Collection.
$31\frac{1}{2}$	...	9 4	$9\frac{3}{4}$	Alaska ¹	Prince Nicolas Ghika.
$30\frac{5}{8}$	...	...	$9\frac{1}{8}$	Kamchatka	Lieut. H. A. Gillett, R.N.
29	...	...	$9\frac{1}{4}$	Arctic America	C. C. Branch.
$-27\frac{1}{2}$	...	...	$8\frac{5}{8}$	Pacific	F. T. Colby.
$-25\frac{5}{8}$	...	...	$8\frac{1}{2}$	Do.	British Museum (The late Major G. E. H. Barrett-Hamilton).
$-25\frac{1}{2}$	...	...	$8\frac{1}{2}$	Baffin Bay	W. Livingstone-Learmonth.
25	...	7 10	9	Bering Sea	Lieut. C. H. G. Benson, R.N.
...	$22\frac{1}{8}$	...	$7\frac{3}{4}$	Spitzbergen	Sir Edmund G. Loder, Bart.
...	$20\frac{3}{4}$	...	$7\frac{1}{2}$	Do.	Sir Victor Brooke's Collection.
...	$18\frac{1}{2}$	...	$7\frac{1}{2}$	Do.	Arnold Pike.
...	♀ 18	...	$4\frac{3}{4}$	Do.	A. Barclay Walker.



Skull and Tusks of Walrus in the collection of Sir Edmund G. Loder, Bart.

The NARWHAL (*Monodon monoceros*).

The Arctic narwhal is the only cetacean furnished with tusks. These are present only in the male, and generally the left one alone is developed. Occasionally, however, both grow, as exemplified in a specimen in the British, and a second in the Cambridge Museum. A model of this whale is exhibited in the British Museum.

Distribution.—Arctic Seas.

Tusks.

Length.		Circumference.	Weight.	Owner.
ft.	ins.			
9	4½	7½	...	Major H. A. Steward.
8	8¼	8⅝	...	Bethnal Green Museum.
8	7¾	9	17	H.R.H. the Duc de Montpensier.
-8	7	...	...	Royal Scottish Museum.
8	7	8¼	15	Sir Edmund G. Loder, Bart.
8	7	8	...	Carl Hagenbeck.
8	3¼	7⅜	...	Bethnal Green Museum.
-8	2	...	...	American Museum of Natural History.
8	0	7¾	...	A. Barclay Walker.
7	11	...	...	J. H. Whitehouse.

- Owner's measurements.

HINTS

FOR RECORDING THE LENGTH OF ANIMALS IN THE FIELD.

As the body lies on the ground, and where circumstances permit, proceed as follows :—

Length. Pull the nose and the tail so as to get them as nearly as possible in a straight line. Fix body with four pegs ; one at end of the nose, one at end of tail, one at root of tail, and the fourth at the nape of the neck behind the ears.

Height at shoulder. Put the leg or paw in a standing position and place a peg at top of withers and measure carefully standing height (*a*) with extended paw, (*b*) with spread paw, as well as length of fore and hind legs from pegs at the stomach-line.

The entries in the game-book should be as follows :—

Length, straight from nose to tip of tail.....	.....
„ along curve to root of tail .....	.....
„ of tail . . . . .	.....
„ of head to nape of neck . . . . .	.....
Girth, upper arm . . . . .	.....
„ forearm . . . . .	.....
„ of body . . . . .	.....
„ of head . . . . .	.....
Height at hind-quarters . . . . .	.....
„ shoulder . . . . .	.....
Length of foreleg . . . . .	.....
„ hind-leg . . . . .	.....
Weight, cleaned . . . . .	.....
„ not cleaned . . . . .	.....
Cleaned skull, length . . . . .	.....
„ breadth . . . . .	.....
„ height . . . . .	.....
„ weight . . . . .	.....

In addition to these measurements, the sex, estimated age, locality, and condition of the animal, with any other features of interest, such as colour of the eyes and skin, length of the hoofs, condition of teeth, etc., should be recorded.

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of palm.	Points.	Locality.	Owner.
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Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
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Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
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RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
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Greatest width. Outside.	Inside.	Tip to Tip.	Width of palm.	Locality.	Owner.
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Length, straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
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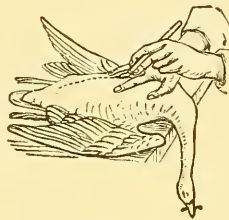
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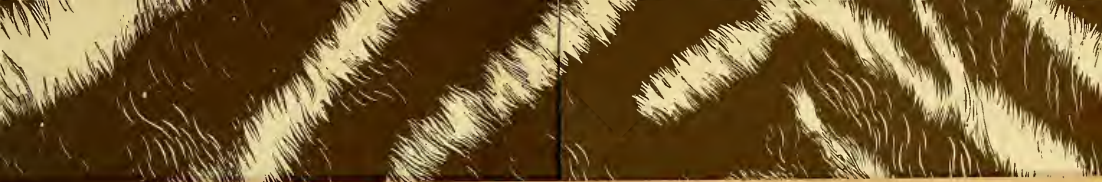


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