

RECORDS OF
BIG GAME

FIFTH EDITION

Rowland Ward





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P. S. Wilkenson
October 1909-

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¹⁷⁷⁰
S. J. Mason
Advocate
Number 6. 6

West African Game List

Goraffe	- N N only	- - - - -	zakumi
Hartbeestē	- general	- - - - -	Kunke
Korrigum	- N N only	- - - - -	derri
Kunke	- general	- - - - -	berna
Oribē	-	all open country	berna - gada
Waterbuck	- general	- - - - -	gumbusa.
Kale	- general	- - - - -	maria. & Dodoka
Redbuck	-	- - - - -	kwanta rafi.
Doncas Gazelle	- L. Tchad	- - - - -	ferre harswa
Red Antelope Gazelle	- L. Tchad	- - - - -	harewa.
Adria Gazelle	-	- - - - -	ferre gada
Burna	-	- - - - -	
Roman Antelope	- general	- - - - -	gwuki.
Kudu	- N N	- - - - -	
Kudu	- general	- - - - -	m mazo a mazu
West Sitanga	- Sitanga	- - - - -	
Bougo	-	- - - - -	rome.
Buffalo	- general	- - - - -	Bona.
Bush Pig	-	- - - - -	gado.
Isart Hog	-	- - - - -	darunga.
Rhinoceros	- Tchad	- - - - -	
Elephant	- general	- - - - -	giwa
Lion	-	- - - - -	zaki
Leopard	-	- - - - -	denissia

S. F. Johnson
Advocate
Mombasa

RECORDS OF BIG GAME



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H. Barnell, Photo.

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Yours faithfully
Portland Ward

RECORDS OF BIG GAME

WITH

THEIR DISTRIBUTION, CHARACTERISTICS, DIMENSIONS,
WEIGHTS, AND

HORN & TUSK MEASUREMENTS

FIFTH EDITION

BY ROWLAND WARD, F.Z.S.



LONDON

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1907

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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 FIFTH 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 has been found impracticable in some instances to verify the measurements of trophies 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. 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." 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 sent, this arising from the use of a tape or string instead of a steel-measure.

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.

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,* are in many instances the making of a good trophy.

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.

It has been found advisable in this edition to omit the measurements of many of the smaller and less important specimens quoted in the earlier ones. In a number of instances the measurements of record specimens sent by owners and other gentlemen have proved untrustworthy, and have had to be left out.

As in the two previous editions, I am indebted for the definitions of the various species and races to Mr. R. Lydekker, who is also responsible for the scientific names employed. Such names as *Strepsiceros strepsiceros strepsiceros* (a title for the typical race of the Kudu) have been intentionally rejected, as being unlikely to be appreciated by sportsmen.

I have to thank many sportsmen and naturalists all over the world for the help they have afforded.

ROWLAND WARD.

October 1906.

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.

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

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

Length is expressed in inches, when not otherwise stated.

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. 515).

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RECORDS OF BIG GAME

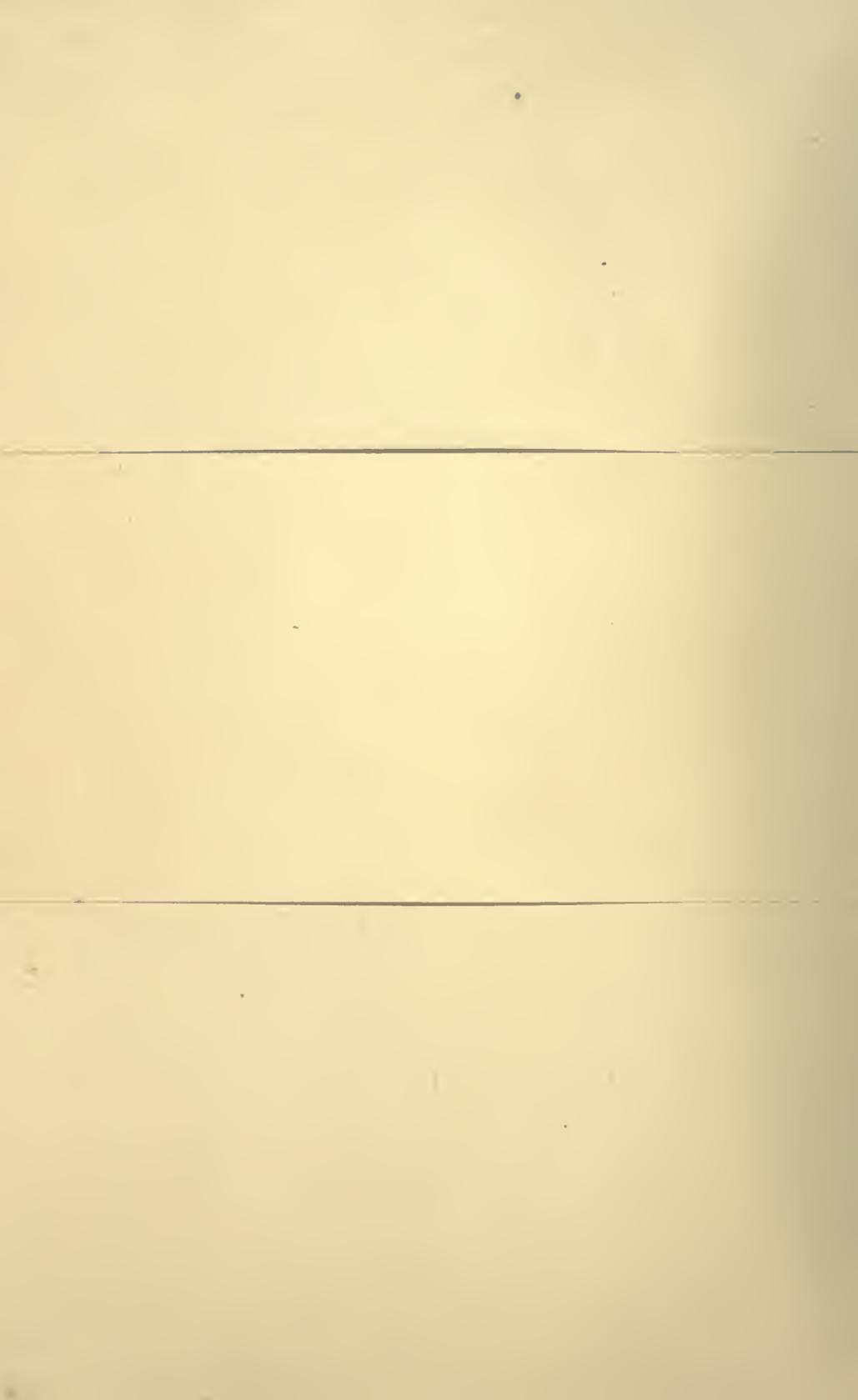
CORRIGENDUM

The scientific name of the Armenian Wild Sheep should be given (as in the previous edition) as *Ovis orientalis*, and not *Ovis gmelini*.

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

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 entirely covered with hair, the ears and tail are short, the throat has a fringe of long hair, and the coat is very thick and of a nearly uniform clove-brown colour, with some white in the region of the tail, and on the under parts and legs. The false or lateral hoofs are unusually large and spreading; and there is a patch



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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



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

southern limit varies from 52° to 54° N. latitude, while they extend to between 80° and 81° northwards.

Several local forms of reindeer are recognised. The more important are: (1) the Scandinavian reindeer (*R. tarandus typicus*) of Northern Europe, which is a rather small animal with moderately expanded antlers; (2) the woodland reindeer (*R. tarandus caribou*) of the forest districts of Arctic America, distinguished by its large bodily

size and the short, much-palmated antlers, in which the brow-tines form huge "shovels," one of which is generally much larger than the other; and (3) the barren-ground reindeer (*R. tarandus arcticus*),



Side view of Antlers of Barren-Ground Reindeer. From a specimen in the British Museum.

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 palmation. 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. grænlandicus*) is of the barren-ground type,



Head of Newfoundland Reindeer. From Dr. J. A. Allen.

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. They are probably nearly allied to the Siberian race.

REINDEER OR CARIBOU

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
62	5½	40	50½	21 + 17	Canada . . .	Sir Edmund G. Loder, Bart.
-58¼	...	30¼	39½	24 + 16	Kenai Peninsula .	W. T. Hornaday.
58	6	27¼	41	11 + 12	Cassiar District .	R. Hayne.
57½	5¼	13¾	...	13 + 7	Arctic Regions .	British Museum.
57¼	5¼	33½	44½ (outside)	20 + 16	Do. . .	Sylvester Browne.
55½	6	28	43	13 + 10	Stikeen River .	P. Niedieck.
54½	6	42	50¼	22 + 18	Head of Tanana River, Alaska	W. F. Sheard.
54¾	4¾	20¼	...	11 + 13	N. America . .	British Museum (Sir John Franklin).
-54	6¾	21¼	32¾	12 + 11	?	Paris Museum.
54	6½	29	37	22 + 11	Alaska . . .	Hon. J. C. Lister.
54	4¾	48	52	21 + 14	Canada . . .	D. F. Mackenzie.
53	4½	48¾	54	12 + 11	Labrador . . .	Hon. Walter Rothschild.
52½	5¼	15	26½	17 + 12	N. Canada . . .	J. Talbot Clifton.
52	5¼	28¼	31	15 + 13	E. Yukon . . .	J. Todd.
-52	6¼	35	39¾	20 + 30	?	Imperial Museum, Vienna.
-52	5½	33	39½	10 + 11	Greenland . . .	W. T. Hornaday.
52	4½	28½	38	7 + 7	N. Canada . . .	David T. Hanbury.
52	5½	6	29	15 + 20	Do. . .	E. E. P. Cuncliffe.
51¾	4¾	40¾	48¾	17 + 14	Hudson Bay . . .	Sir Edmund G. Loder, Bart.
50	5¼	27	38	12 + 11	Barren Ground .	A. Barclay Walker.
49	4½	24¾	32¾	7 + 9	N. America . . .	Hon. Walter Rothschild.
-48½	6¾	26½	34	27	Newfoundland .	F. Gillett.
48	6½	11¾	25½	17 + 15	Do. . .	Sir Edmund G. Loder, Bart.
47½	6½	40¾	38¾	15 + 14	Itcha Mts., B.C. .	W. Neilson.
46½	6½	16½	28	32	British Columbia .	J. Turner-Turner.
46½	5½	38½	39½	13 + 10	Newfoundland .	T. P. Miller.
46	4½	24½	31½	15 + 15	Do. . .	Capt. H. L. Cottingham.
-46	6½	39	43	13 + 19	Do. . .	G. L. Harrison.
46	5¼	26¾	35	15 + 12	Do. . .	H. Charrington.

- Owner's measurements.

RECORDS OF BIG GAME

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
46	5 $\frac{3}{4}$	31	35	12 + 12	E. Yukon . . .	F. C. Selous.
45 $\frac{1}{2}$	5 $\frac{1}{2}$	31 $\frac{1}{4}$	33 $\frac{1}{2}$	13 + 12	Newfoundland . . .	F. C. Williamson.
45 $\frac{1}{2}$	4 $\frac{1}{4}$	19 $\frac{3}{4}$	31	15 + 13	N. Canada . . .	David T. Hanbury.
45	5 $\frac{3}{4}$	18 $\frac{1}{2}$	37 $\frac{1}{2}$	17 + 18	Cassiar District . . .	J. M. Hanbury.
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 $\frac{1}{4}$	34	37	...	Do. . . .	C. H. Akroyd.
44	5 $\frac{3}{4}$	24 $\frac{1}{4}$	32 $\frac{1}{2}$	17 + 21	Do. . . .	J. G. Millais.
44	6 $\frac{3}{8}$	23 $\frac{1}{2}$	34	18 + 17	Itcha Mts., B.C. . .	W. Neilson.
44	5 $\frac{1}{2}$	18 $\frac{1}{4}$	30	18 + 13	Newfoundland . . .	Admiral Sir William Kennedy.
44	5 $\frac{3}{4}$	19	26 $\frac{1}{2}$	17 + 14	Do. . . .	Comdr. A. G. Allgood, R.N.
43 $\frac{3}{4}$	5 $\frac{3}{8}$	40	41 $\frac{7}{8}$	16 + 11	Do. . . .	St. George Littledale.
43 $\frac{1}{2}$	5	29 $\frac{1}{4}$	31	18 + 10	Do. . . .	Sir Cavendish Boyle.
43	5 $\frac{1}{2}$	21 $\frac{1}{2}$	29 $\frac{1}{2}$	10 + 8	Do. . . .	Capt. 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	6 $\frac{1}{4}$	24	31 $\frac{3}{4}$	17 + 14	Do. . . .	T. A. Armstrong.
42	6 $\frac{1}{2}$	...	18 $\frac{1}{2}$	33	Alaska	Earl of Lonsdale.
42	5 $\frac{1}{2}$	36 $\frac{1}{2}$	39 $\frac{1}{2}$	20 + 12	Newfoundland . . .	Q. C. Colmore.
42	5 $\frac{3}{4}$	38	41 $\frac{1}{2}$	10 + 10	Do. . . .	E. C. Russell.
41	5 $\frac{1}{2}$	20 $\frac{1}{2}$	28	15 + 9	Do. . . .	Lieut.-Col. Hon. W. Coke.
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 $\frac{3}{8}$	32 $\frac{1}{2}$	37	20 + 17	Do. . . .	H.R.H. the Prince of Wales.
40	5 $\frac{3}{4}$	19 $\frac{3}{4}$	26	12 + 11	Do. . . .	P. B. Vander-Byl.
40	7 $\frac{1}{2}$	31	38	18 + 19	Do. . . .	F. C. Selous.
40	6	31 $\frac{1}{2}$	35 $\frac{1}{2}$	19 + 14	Do. . . .	Admiral Sir William Kennedy.

- Owner's measurements.

REINDEER OR CARIBOU

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
¹ 60	5 $\frac{3}{8}$	38 $\frac{5}{8}$	41 $\frac{1}{8}$	22 + 15	?	Sir V. Brooke's Collection.
-59 $\frac{1}{2}$	7	38	44	15 + 16	Norway . . .	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	Jotunheim, Norway	S. Ratcliff.
-55 $\frac{1}{8}$	6 $\frac{1}{2}$	38	43 $\frac{1}{8}$	18 + 8	Sundal Fjelds, Norway	Capt. Gerard Ferrand.
54 $\frac{1}{2}$	4 $\frac{7}{8}$	33 $\frac{1}{4}$	40 $\frac{3}{4}$	15 + 13	Norway . . .	J. H. Thomas.
54	5	22	41 $\frac{3}{4}$	16 + 11	Do. . . .	Kenneth M'Douall.
-52 $\frac{1}{8}$	5	27	36 $\frac{1}{2}$	26	Do. . . .	Abel Chapman.
-51	6 $\frac{1}{16}$	...	...	...	Rundane, Norway .	Capt. John Marriott.
50 $\frac{3}{8}$	4 $\frac{7}{8}$	24	29 (outside)	16 + 13	Norway . . .	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.
49	4 $\frac{1}{4}$	25	36 $\frac{1}{2}$	18 + 15	Do. . . .	T. H. Barnard.
47 $\frac{1}{2}$	4 $\frac{1}{2}$	17	27	18 + 14	Do. . . .	A. C. Gathorne Hardy.
47	4 $\frac{5}{8}$	23	29	17 + 9	Do. . . .	Kenneth M'Douall.
46 $\frac{1}{2}$	6	21 $\frac{1}{2}$	26 $\frac{1}{2}$	37	Do. . . .	Hon. Walter Rothschild.
-921	3 $\frac{1}{2}$	10 $\frac{1}{2}$	14 $\frac{3}{8}$	15 + 12	Lapland . . .	Dr. Albert von Stephani.

- Owner's measurements.

¹ Perished antlers.



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, and being usually darker in American than in European examples. The height varies from 5 feet 9 inches at the shoulder in Scandinavian examples to as much as 6 feet 6 inches or, it is said, even to 7 feet in the Alaskan race; the weight from 900 to 1630 lbs., that of the antlers being about 60 lbs. to 100 lbs.

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



Antlers of Elk.

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; but it does not seem possible to regard these as a distinct local race.

An elk killed at Meswicz, Lithuania, by Count Scheibler, had the following dimensions:—

	Feet.	Inches.
Length, tip of nose to root of tail	8	6
Height at withers	5	9
„ „ quarters	6	5½
Round neck near the ears	4	9

Estimated weight, 1500 lbs.

A.—AMERICAN and ALASKAN ELK
(*Alces machlis americanus* and *A. m. gigas*).

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of Palm.	Points.	Locality.	Owner.
¹ -78½	49	...	...	18	40	Yukon . .	W. F. Sheard.
-78½	...	...	...	...	...	Do. . .	Field Columbian Museum ; dried skull weighed 91 lbs.
76	43	...	...	...	26+21	Alaska . .	A. S. Reed.
74¾	44	12	45	13½	15+13	Do. . .	Capt. C. R. E. Radclyffe.
74½	...	...	...	...	...	Do. . .	Chicago Academy of Science.
74	...	...	...	...	...	Do. . .	American Museum of Natural History.
73½	...	...	...	23	24+14	Do. . .	C. F. Periolot.
72	47¼	9¼	37½	16¼	20+17	Do. . .	Duke of Westminster.
-71½	49	8⅞	...	16	20+20	Do. . .	Sir Edmund G. Loder, Bart.
² 70¼	55½	7½	...	29?	...	Do. . .	W. W. Hart.
70	46	9	42½	15	14+14	Do. . .	R. F. Glyn.
69	55	11?	37	21	21	Do. . .	F. B. Tolhurst.
³ 69	48	10	...	15	32	Do. . .	Dall De Weese.
68¾	49	11	36	15½	14+14	Do. . .	P. Niedieck.
68¾	46	10	43	14	11+8	Do. . .	David T. Hanbury.
67¾	43	11	48	15	15+12	Do. . .	P. B. Vander-Byl.
-67	...	...	...	...	23	Do. . .	J. H. Whitehouse.
66	44½	10½	49½	14	17+14	Kenai Mts. .	Viscount Powerscourt.
66	44	10	50	12	12+11	Alaska . .	Capt. C. R. E. Radclyffe.
66	42	9¾	42	19½	19+17	E. Yukon . .	F. C. Selous.
-66	38½	9½	44	14	28	New Brunswick	S. Decatur.
65¼	...	...	..	..	13+10	Do. . .	F. H. Cook.
65	41	...	...	24	14+13	Manitoba . .	Otho Shaw.
-64½	47½	8¾	45¼	15	31	?	Grahamstown Museum.

- Owner's measurements.

¹ E. Thomson Seton says in *Scribner's*, February 1906, only 77½.

² Height at shoulder, 8 ft. 2 in. ?; skull horns, 68 lbs.; estimated weight, 2600 lbs.

³ Height at shoulder stated to be 7 ft. 8 in. ?

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of Palm.	Points.	Locality.	Owner.
64	47	8 $\frac{3}{4}$	40	13	16+16	Alaska . .	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.
-62 $\frac{3}{4}$	44	9	41	18	20+12	New Brunswick	N. T. de Pauw.
62 $\frac{1}{2}$	...	...	...	...	...	Alaska . .	C. G. Cowan.
62	46 $\frac{1}{2}$	9 $\frac{3}{4}$	35	21	18+16	Do. . .	Lord Elphinstone.
-61 $\frac{1}{2}$	44	...	...	...	...	Canada . .	The late General L. Dashwood.
-61	38	11 ?	50	14	26	New Brunswick	J. Bodkin.
-61	...	10	...	...	24	Maine . .	T. D. M. Cardeza.
60	40	8	38	13	11+10	Canada . .	Viscount Powerscourt.
59 $\frac{1}{4}$	38	6 $\frac{1}{2}$	...	9 $\frac{3}{4}$	11+11	. ?	H. R. H. the Duke of Saxe-Coburg and Gotha.
59 $\frac{1}{4}$	43 $\frac{1}{4}$	8 $\frac{1}{2}$	40	14 $\frac{1}{2}$	14+13	Manitoba . .	G. H. M. Banks.
58 $\frac{1}{2}$	38	8 $\frac{1}{2}$	39	11	12+11	?	W. Moat.
57 $\frac{3}{4}$	37 $\frac{3}{4}$	8	35 $\frac{3}{8}$	11 $\frac{1}{2}$	11+13	Canada . .	Thomas Bate.
57 $\frac{1}{2}$	38	8	21 $\frac{1}{2}$	14	18+15	Do. . .	C. H. Akroyd.
57 $\frac{1}{8}$	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. C. Lister.
57	39	8 $\frac{1}{4}$	38 $\frac{1}{2}$	12 $\frac{1}{2}$	15+12	N. America . .	Sir Edmund G. Loder, Bart.
56 $\frac{1}{2}$	39 $\frac{1}{2}$	7 $\frac{3}{4}$	37	13 $\frac{1}{2}$	14+11	Do. . .	Sir Peter Walker, Bart.
54 $\frac{1}{2}$	39 $\frac{1}{2}$	7	38	16	13+12	Canada . .	Sylvester Browne.
-55	46 $\frac{3}{4}$	...	32 $\frac{5}{8}$	...	14+15	Do. . .	Berlin Museum.
54 $\frac{1}{2}$	40 $\frac{1}{2}$	7 $\frac{1}{2}$	35	13	9+9	New Brunswick	A. C. Bell.
54	36 $\frac{1}{2}$	8	43 $\frac{1}{2}$	7 $\frac{1}{4}$	9+9	Manitoba . .	T. P. Kempson.
54	40	8	38	10	10+8	?	W. C. Neilson.
53 $\frac{1}{2}$	41	9	28 $\frac{1}{2}$	13 $\frac{1}{4}$	15+14	Canada . .	H. R. H. the Prince of Wales.
53	37	7 $\frac{1}{2}$	33	12	16+15	Montana . .	T. P. Kempson.
53	39	9	25	13	14+13	?	A. G. Hogg.
52 $\frac{7}{8}$	38 $\frac{1}{2}$	7	...	10 $\frac{7}{8}$	11+10	N. America . .	British Museum.
¹ -50 $\frac{1}{4}$	39	8 $\frac{1}{4}$	35	19 $\frac{1}{4}$	18+14	?	Imperial Museum, Vienna.

- Owner's measurements.
¹ Inside.

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

Greatest width.	Length to longest tine.	Circumference above burr.	Tip to Tip.	Breadth of Palm.	Points.	Locality.	Owner.
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'Mullen.
48 $\frac{3}{4}$	30 $\frac{1}{2}$	8	44	5	4+4	Norway . .	Capt. Pitt Taylor.
48	32	8 $\frac{3}{4}$	37 $\frac{1}{2}$	11 $\frac{1}{2}$	10+9	Nr. St. Peters- burg	Prince E. Demidoff.
47	28	6 $\frac{1}{4}$	32	9	8+8	Norway . .	Sir H. Pottinger, Bart.
46	32 $\frac{1}{2}$	7 $\frac{1}{2}$	33	11 $\frac{1}{2}$	10+10	Sweden . .	Capt. Gerard Ferrand.
¹ 46	30 $\frac{3}{4}$	6 $\frac{1}{2}$	43	10 $\frac{1}{2}$	15	Norway . .	Abel Chapman.
45	31	7	28	...	17	Do. . .	S. Ratcliff.
44 $\frac{1}{4}$	30 $\frac{3}{8}$	7 $\frac{1}{8}$	29 $\frac{1}{2}$	10	9+8	Do. . .	Sir Victor Brooke's Collec- tion.
44 $\frac{1}{4}$	30 $\frac{1}{4}$	...	40	8 $\frac{3}{4}$	17	Do. . .	Thomas Bate.
43 $\frac{1}{2}$	29	7 $\frac{1}{2}$	...	10 $\frac{1}{2}$	24	Do. . .	Sir Peter Walker, Bart.
43 $\frac{1}{2}$	27	6 $\frac{1}{2}$	40	...	8+7	Do. . .	J. H. Barnard.
43 $\frac{3}{8}$	32	6	...	9 $\frac{1}{2}$	7+8	Russia . .	British Museum (Sir Edward Caley).
43 $\frac{1}{4}$	28 $\frac{1}{2}$	6	33 $\frac{1}{4}$	11	12+10	Lithuania . .	Prince Radziwill.
42 $\frac{1}{4}$	29	6	30 $\frac{1}{2}$	7 $\frac{1}{2}$	11+9	Norway . .	Sir H. Pottinger, Bart.
42 $\frac{1}{2}$	26	6	27 $\frac{1}{4}$	7	7+6	Do. . .	Lord Delamere.
42	28 $\frac{1}{2}$	7 $\frac{1}{2}$	24 $\frac{3}{4}$	9 $\frac{1}{2}$	10+9	Do. . .	Sir H. Pottinger, Bart.
42	...	...	...	...	16	Do. . .	Sir H. Seton-Karr.
41 $\frac{1}{4}$	32	6 $\frac{3}{4}$	25 $\frac{1}{4}$	6 $\frac{3}{4}$	6+7	Do. . .	Do.

- Owner's measurements.

¹ Estimated weight, 1260 lbs.



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

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

A race distinguished from the typical form of the Scandinavian elk by the absence of palmation in the antlers, which usually have four or five large tines on each side. Some antlers from East Siberia show a slight tendency to palmation, but no specimens from that area have hitherto been received showing the full palmation characteristic of so many European, and apparently all American, antlers. This elk would appear to be the ancestral form of the group.

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.



Antlers of Eastern Red Deer. From a Hungarian specimen in the collection of Viscount Powerscourt. Counting from the skull upwards, the first tine is the brow, the second the bez, and the third the trez, above which come the surroyals, or crown. The main shaft is termed the beam.

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 males are set on the skull at an oblique angle to the middle line of the forehead, and always have a brow-tine, while they are generally more or less nearly cylindrical, although sometimes palmated. 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 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 a distinct light-coloured patch on the buttocks, which includes the tail, although in the summer coat

the tail itself is dark-coloured. The general colour of the adult summer coat is reddish brown, and that of the winter dress greyish brown, while the young are profusely spotted.

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 Linnaeus, in other words, *Cervus elaphus typicus*. From this race the Norwegian stock differs by its inferior size, the absence of a mane of long hairs on the neck, and the lighter colour of the summer coat. 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. On these grounds Dr. Lönnerberg regards the Norwegian red deer as a distinct race, or sub-species, with the name *Cervus elaphus atlanticus*. If he be justified in this, there can be no doubt that Scottish, Irish, and English red deer are severally distinct. Scotch red deer seem to be distinguishable not only by their small size but by their tendency to "Roman noses." Nevertheless these forms of red deer are so near one another that they may be alluded to collectively as the Western race.

The Corsican red deer (*C. elaphus corsicanus*), of Corsica and Sardinia, is a very small race, with the bez-tine of the antlers wanting, and the general colour of the upper-parts dark brown in summer 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 41.

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 now 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.

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

Widest span over all, $39\frac{1}{4}$ inches; span inside below cups, 34 inches; span outside below cups, 37 inches.

Right antler.—Length, 39 inches; length of brow, $10\frac{1}{4}$ inches; of bez, 10 inches; of trez, 13 inches. Length of tines in cup, 10, 7, $4\frac{1}{4}$ inches. Circumference at coronet, $8\frac{1}{2}$ inches; between bez and trez, $7\frac{1}{4}$ 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, $7\frac{1}{2}$ inches; above trez, $6\frac{1}{4}$ inches.

Weight, 303 lbs., clean; but stag was much run.



From a Photograph by Whyte.

Antlers of Red Deer killed by Lord Burton, with fully developed cups.

A.—WESTERN RED DEER (*Cervus elaphus typicus*).

a.—*Scottish Specimens.*

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
41	7	22½	35	...	7+7	...	Inverness	Col. W. Hall Walker.
1-40	6	...	30	...	10	203	(1794) Glentilt	Duke of Atholl.
39	7¼	...	34	39¼	6+6	303	Guisachan	Lord Tweedmouth.
37½	...	20¾	26½	...	7+7	...	?	Sir Humphrey de Trafford, Bart.
37½	...	...	...	32	11	...	?	Duke of Sutherland.
37¾	5¾	14¾	26¾	...	6+7	...	?	H. R. H. the Duke of Saxe-Coburg and Gotha.
1-36½	...	...	35	12	...	...	Glenmoriston	Col. W. Gordon-Cumming.
36½	5	34	39½	41	5+6	...	Glenstrath-farrar	Viscount Powerscourt (shot by the late Roualeyn Gordon-Cumming).
36½	6½	31½	32½	...	6+6	...	?	Sir Humphrey de Trafford, Bart.
36¼	7	22¾	28	...	7+7	...	?	Do.

- Owner's measurements.

¹ Recorded by J. G. Millais.

RECORDS OF BIG GAME

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight. lbs.	Locality.	Owner.
36	5½	16½	28	36	7+7	...	?	Duke of Portland.
36	...	...	34	...	6+6	17·12	Morar	Walter Jones.
36	4½	21½	27	...	6+6	...	Caenlochan	Mrs. Henry Tate.
35½	5½	...	25½	...	6+6	244	Sutherland	Abel Chapman.
35½	6	...	...	29	12	19	Auchnashel- lach	The late Lord Alexander Paget.
-35½	7	...	26½	...	20	...	Glenquoich	Lord Burton. (See illus- tration.)
35½	4½	27½	34	36½	4+3	...	Caenlochan	The late Henry Tate.
35½	4½	24½	29½	32½	5+5	...	Ben Alder	Hon. T. A. Brassey.
35½	4½	17½	30	...	5+6	244	Glenisla, For- farshire	Viscount Powerscourt.
-35½	4½	31½	30	...	6+6	...	Deanich, Ross- shire	G. Percy V. Aylmer.
35	4½	22	28	...	7+6	...	Talladh-a-Bhe- ithe, Rannoch	E. Weller-Poley.
35	...	...	...	34	10	225	N. Morar	Major T. W. Gill.
-35	...	...	29	41½	7+6	...	?	Sir Arthur Grant, Bart.
¹ 35	5½	26	33½	37½	12	...	Guisachan	Lord Tweedmouth.
² 35	4½	...	...	27½	8	...	Cairn Thomais Gaick	John Hargreaves.
¹ 34½	4½	26½	31	33½	5+5	...	Dalnaspidal	Mrs. Hall Walker.
34½	5½	18	26½	34	6+5	...	?	W. Brodrick Cloete.
34½	5½	37½	34½	...	12	...	Braemar	Sir John Fowler, Bart.
34½	4½	18½	27	...	6+5	...	N. Morar	J. R. Hutchison.
² -34½	5	...	...	34½	12	231 (clean)	Glentilt	Duke of Atholl.
34½	6	17½	25	31½	5+4	222	Caenlochan	Mrs. Henry Tate.
34½	4½	16½	24½	...	5+5	...	Vuchnasheen	F. Devas.
34½	4½	22	28½	31½	6+4	204	Cluanie	St. George Littledale.
34½	6½	24½	...	...	6+6	225	Meoble	Walter Jones.
34	4½	17½	26½	29	5+4	...	Caenlochan	W. A. L. Fletcher.
34	4	28½	30½	...	5+4	...	Glenmuick	Capt. J. Ponsonby.
34	4½	12	23½	...	5+4	...	?	C. A. Grenfell.
34	4	16½	...	...	5+4	...	Blair-Athol	Lieut.-Col. A. E. W. Count Gleichen.
-34	4½	19	28	...	6+5	...	Rothiemurchus, Inverness	A. Basil Brooke.

- Owner's measurements.

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

SCOTTISH RED DEER

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Length on out- side curve.	Circum- ference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight. lbs.	Locality.	Owner.
¹ -34	...	...	...	...	11	...	Braemar	Col. Gordon-Cumming.
¹ -34	4 $\frac{3}{4}$	...	...	36 $\frac{1}{2}$	12	...	Glenbruar, Perthshire	Sir W. Ogilvie Dalgleish.
¹ -34	4 $\frac{7}{8}$	...	...	30	10	...	Morar	W. Stirling.
¹ 34	7	...	...	26	14	...	Glenartney	Earl of Ancaster.
34	4 $\frac{1}{4}$	16 $\frac{3}{4}$	26 $\frac{3}{4}$	29 $\frac{1}{2}$	4+4	...	Cluanie	W. M. Christy.
33 $\frac{3}{4}$	5 $\frac{1}{2}$	19 $\frac{1}{2}$	25 $\frac{1}{2}$	...	5+5	...	?	H. S. O'Brien.
-33 $\frac{1}{2}$	5	...	34 $\frac{1}{2}$	...	5+5	280	Dalness	J. G. Millais.
33 $\frac{1}{2}$	4	16 $\frac{1}{2}$	25	29	5+5	...	Caenlochan	H. C. Pilkington.
33 $\frac{1}{2}$	4	23 $\frac{1}{4}$	28	30 $\frac{1}{2}$	4+4	...	Glencarron	H. R. Pape.
33 $\frac{1}{2}$	4 $\frac{1}{2}$	...	27	...	12	...	Kintail	Sir Edmund G. Loder, Bart.
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	4	24 $\frac{1}{4}$	31	32 $\frac{1}{2}$	10	...	Lochrosque	A. Bignold.
33	4 $\frac{1}{8}$	8 $\frac{1}{8}$	20 $\frac{3}{4}$	24 $\frac{3}{4}$	4+4	...	Ben Alder	Sir Julius Wernher, Bart.
33	4 $\frac{1}{4}$	24 $\frac{3}{4}$	28 $\frac{1}{2}$	33 $\frac{1}{2}$	5+4	222	Do.	F. C. Selous.
33	4 $\frac{3}{4}$	21 $\frac{1}{2}$	28 $\frac{3}{4}$	33	4+4	...	Kintail	R. P. Page.
-33	...	...	...	32	12	...	?	Duke of Fife.
33	4	12	23 $\frac{3}{8}$	28	4+3	...	Kildonan	Sir William Pearce, Bart.
-32 $\frac{3}{4}$	5	25 $\frac{3}{4}$	29 $\frac{1}{4}$	...	6+6	...	Ardverkie	Col. W. Hall Walker.
32 $\frac{1}{2}$	4 $\frac{1}{4}$	4 $\frac{7}{8}$	21 $\frac{1}{2}$	26 $\frac{1}{4}$	4+4	...	Inversanda	J. Hamilton Leigh.
32 $\frac{1}{2}$	4 $\frac{1}{4}$	17	25 $\frac{1}{4}$	27	4+3	231	Glencarron	G. Cornwallis-West.
32 $\frac{1}{4}$	4 $\frac{1}{2}$	13 $\frac{1}{4}$	24 $\frac{1}{4}$	28	6+5	...	Breachiore	Sir G. A. Cooper, Bart.
-32	...	...	...	34	10	...	Kintail	Sir Edmund G. Loder, Bart.
32	4	17	27 $\frac{3}{4}$	30	5+5	...	Deanish	J. G. Clarke.
32	4 $\frac{1}{2}$	18	26 $\frac{3}{4}$	29 $\frac{1}{2}$	7+4	...	Glenartney	Waldorf Astor.
32	4	20	23 $\frac{3}{4}$	27 $\frac{1}{2}$	6+6	...	Glenfeshie	Hon. H. C. Gibbs.
31 $\frac{3}{4}$	4	28	32 $\frac{1}{2}$	39 $\frac{1}{4}$	5+5	...	Glencarron	W. M. Christy.
31 $\frac{1}{2}$	4	22	26 $\frac{1}{4}$	32 $\frac{1}{2}$	7+6	...	Kintail	R. P. Page.
-31	5 $\frac{1}{2}$	32 $\frac{1}{2}$	...	38	5+4	...	Inverlochy	Mrs. J. E. Platt.
-30	4 $\frac{3}{8}$	...	25 $\frac{1}{2}$	...	5+5	210	Blackmount	J. G. Millais.

- Owner's measurements.

¹ Recorded by J. G. Millais.

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

40 38 37 35 35 35

The six longest antlers of this celebrated collection are respectively—

37 36 35½ 35½ 35 35

The antlers of one of the red deer in Mr. C. Lucas's park at Warnham Court, Sussex, in 1889, had 34 points; 1890, 34 points; 1891, 37 points; 1891, 47 points and weighed 17 lbs.; 1893, 45 points, 16½ lbs.

b.—Irish Specimens.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Outside spread.	Points.	Weight.	Locality.	Owner.
42½	...	...	...	...	12	315	Colebrooke	Sir Douglas Brooke,
41	6	17½	23	...	10+9	325	Do.	Bart. Do.
40	5½	28	29½	...	8+8	355	Do.	Do.
39¾	5½	14½	26¾	...	7+7	375	Do.	Do.
38	5¾	20	30¾	...	10+8	350 (clean)	Do.	Do.
38	5¾	9¾	23¾	...	8+8	...	Roscommon	Earl of Kingston.
2 35	5	22	30¼	...	6+5	343	Do.	Do.
35	4¾	...	30	...	9	...	Ireland	Hon. A. Charteris.
35	5¾	19¾	26¾	...	6+5	282	Powerscourt Park	Viscount Powerscourt.
35	5¼	21¼	29	...	5+5	{ 336 as he fell 252 clean	Do.	Do.
34	4½	25½	28½	...	6+6	{ 364 as he fell 280 clean	Do.	Do.
34	4¾	...	31½	...	6+5	372	Muckross	Ralph Sneyd.
34	4¾	13¾	25	...	5+5	...	Colebrooke	Major J. M. Rogers.
33¾	5	...	26	...	5+5	308	Muckross	Hon. Mrs. Bourke.
33	5	20	28¼	...	5+5	281	Glenveagh	W. W. Ashley.
31¾	5	25¾	31¾	...	5+6	...	Donegal	Col. W. Hall Walker.
31	4¾	11	20¾	...	7+7	...	Muckross	Ralph Sneyd.
31	4¾	18½	22	...	5+7	...	?	Dublin Museum.
30¼	4	...	26½	...	5+5	276	Muckross	Geoffrey Carr-Glyn.

- Owner's measurements.

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

² Spread, 36½ inches.



Antlers of Exmoor Red Deer. Owner, 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.
38 $\frac{1}{2}$	5 $\frac{1}{8}$	17 $\frac{3}{8}$	31 $\frac{1}{2}$	...	6+6	Quantock Hills	Viscount Ebrington; killed in 1885.
37 $\frac{1}{2}$	5	22 $\frac{1}{4}$	30 $\frac{1}{4}$	...	7+7	Exmoor	C. Nelder; killed in 1803.
37 $\frac{1}{2}$	5 $\frac{1}{2}$	27 $\frac{1}{2}$	35 $\frac{5}{8}$	48	6+5	Do.	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.
36 $\frac{3}{4}$	6	21 $\frac{1}{2}$	28 $\frac{3}{4}$	...	6+7	Exmoor	Sir A. Acland-Hood, Bart.; killed in 1893.
36 $\frac{1}{2}$	5 $\frac{5}{8}$	12	23 $\frac{3}{4}$	30 $\frac{1}{2}$	7+6	Stoodleigh	Ian 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	4 $\frac{3}{4}$	10	24 $\frac{3}{4}$	30 $\frac{1}{4}$	9+7	Exmoor	R. A. Sanders.
36	5 $\frac{1}{4}$	12 $\frac{3}{4}$	23	29 $\frac{1}{2}$	6+5	Do.	Capt. H. H. Amory.
36	5 $\frac{3}{4}$	14 $\frac{3}{4}$	26	34 $\frac{1}{2}$	7+6	Do.	Morland Greig.
35 $\frac{1}{2}$	5	20 $\frac{7}{8}$	27 $\frac{1}{2}$	...	6+6	Do.	Earl Fortescue; killed in 1812.
35	5	15 $\frac{3}{4}$	27	...	6+5	Do.	Com. G. F. Inglefield, R.N.
35	4 $\frac{1}{8}$	25 $\frac{1}{2}$	32 $\frac{3}{4}$	...	5+6	Do.	Sir C. T. D. Acland, Bart.; killed in 1893.
34 $\frac{5}{8}$	5 $\frac{5}{8}$	23 $\frac{1}{4}$	31 $\frac{1}{4}$	...	6+6	Do.	Earl Fortescue; killed in 1881.



Head of Red Deer from Stoke Park.

d.—English Park Specimens.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight (clean).	Locality.	Owner.
43 $\frac{1}{2}$	5 $\frac{1}{4}$	23 $\frac{1}{4}$	33 $\frac{1}{2}$	51 $\frac{1}{4}$	12+9	...	Woburn	Duke of Bedford.
42 $\frac{1}{2}$	6 $\frac{3}{4}$	...	...	40	12	...	Melbury, Dorset	Earl of Ilchester.
¹ 41 $\frac{1}{4}$	5	22 $\frac{3}{4}$	32	...	7+6	...	Langley Park	J. G. Millais.

¹ White Stag.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight (clean).	Locality.	Owner.
40 $\frac{3}{4}$	5 $\frac{1}{2}$	18 $\frac{3}{4}$	31	41	5+5	lbs. ...	?	R. V. Berkeley.
40	4 $\frac{3}{4}$	25	33 $\frac{1}{2}$	40 $\frac{1}{2}$	6+7	...	?	W. Cooper.
¹ 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.
37 $\frac{1}{2}$	5 $\frac{1}{2}$	22	29 $\frac{1}{2}$	41 $\frac{1}{2}$	8+7	...	Stowe	H.R.II. le Duc d'Orléans.
37 $\frac{1}{2}$	7 $\frac{1}{2}$	29 $\frac{1}{2}$	27 $\frac{1}{2}$	36 $\frac{1}{2}$	10+9	...	Welbeck	Duke of Portland.
37	7 $\frac{3}{4}$	...	...	37	23	434	Warnham	T. Lucas.
36	6 $\frac{1}{2}$	24	30	...	6+6	...	Vaynol, North Wales	G. W. D. Assheton-Smith.
35 $\frac{1}{2}$	5	7 $\frac{1}{2}$	20	25	6+6	...	?	H. S. O'Brien.
34 $\frac{1}{2}$	7	33	26 $\frac{3}{4}$	...	20+20	...	Warnham	W. H. Lucas.
34	4 $\frac{1}{2}$	...	23	...	6+6	...	Stowe	H.R.II. la Comtesse de Paris.
34	5 $\frac{3}{8}$	21 $\frac{3}{4}$	28 $\frac{1}{2}$	...	7+7	...	Dorset	Earl of Ilchester.
34	6 $\frac{1}{2}$	...	...	48 (about)	45	...	Warnham	C. T. Lucas.
33 $\frac{1}{2}$	4 $\frac{7}{8}$	...	33	...	6+6	...	Stowe	H.R.H. le Duc d'Orléans.
33	7 above trez	...	...	45 $\frac{1}{2}$	44	...	Warnham	C. T. Lucas.

- Owner's measurements.

¹ White Stag.

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



Skull and Antlers of Old English Red Deer.
(Found in cutting the Manchester Ship Canal.)

e.—Ancient British and Irish Specimens.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Where dug up.	Owner.
47½	8	35	...	...	5+8	Manchester Ship Canal excavations	Sir R. M. Brooke, Bart.
40	7½	22¼	28½	43¼	12+9	Combermere	Duke of Westminster.
38½	5	18	30	39¼	8+6	Ireland	Viscount Powerscourt.
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	Do.
¹ 36	5¾	...	...	42½	23	South Ireland	Sir Douglas Brooke, Bart.
35½	5¼	26½	32¾	42½	13+11	Do.	Sir Victor Brooke's Collection.
35¼	5½	31¼	27¾	...	12+10	Ireland	Viscount Powerscourt.
35	7	...	21	24	9+11	England	C. G. Burrow.
33	5¼	23	28	41	7+6	Cardigan Bay	H. Marshall.

- Owner's measurements.

¹ Recorded by J. G. Millais.

f.—Norwegian Specimens.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
-34	...	...	...	...	7	lbs. ...	Norway . . .	J. H. Thomas.
31 $\frac{3}{4}$	4 $\frac{3}{4}$	...	25 $\frac{1}{2}$	...	6+5	...	Do. . . .	A. Brassey.
31 $\frac{1}{2}$	4 $\frac{1}{2}$	...	24 $\frac{1}{2}$	...	5+5	...	Do. . . .	Sir H. Seton-Karr.
31 $\frac{1}{2}$	4 $\frac{3}{4}$	...	28	...	4+3	...	Do. . . .	E. M. Denny.
31 $\frac{1}{4}$	5 $\frac{1}{4}$	...	...	...	6+6	...	Do. . . .	} J. H. Thomas.
31	4 $\frac{1}{4}$	23	25	29 $\frac{1}{2}$	6+6	...	Do. . . .	
30	5	...	29	...	12	280	Do. . . .	E. M. Denny.
-30	4 $\frac{1}{4}$	...	28	33	5+4	...	Do. . . .	Sir H. Seton-Karr.
30	4 $\frac{1}{4}$	29 $\frac{1}{4}$	30 $\frac{3}{4}$	...	5+4	...	Do. . . .	Do.
29 $\frac{1}{4}$	4 $\frac{5}{8}$	26	30 $\frac{1}{4}$	...	6+5	...	Do. . . .	G. L. Denman.

g.—Spanish Specimens.

¹ -40	...	...	36 $\frac{1}{2}$	...	17	Sierra Morena, Spain	Abel Chapman.
-37 $\frac{1}{2}$	...	...	34 $\frac{1}{2}$	...	15	Do. . . .	Do.
-34 $\frac{1}{8}$	5 $\frac{3}{4}$	...	Single cast antler	...	8	Do. . . .	Do.
33	4 $\frac{5}{8}$	21 $\frac{1}{2}$	30	37	13	Spain	Prince E. Demidoff.
-32 $\frac{1}{2}$	...	...	...	...	13	Plains of Andalucia . . .	W. J. Buck.
-31	4 $\frac{5}{8}$	28	...	...	15	Coto Doñana	P. Garvey.
-29	5 $\frac{1}{4}$	...	25	...	12	Andalucia	Abel Chapman.
-28 $\frac{1}{2}$	5 $\frac{1}{4}$	...	26 $\frac{1}{4}$	...	13	Do. . . .	Do.
-28 $\frac{1}{2}$	4 $\frac{1}{4}$	21	17 $\frac{3}{4}$	...	12	Coto Doñana	Do.
23	4 $\frac{5}{8}$	29 $\frac{1}{2}$	22 $\frac{1}{2}$	...	12	Do. . . .	J. C. Chapman.
22 $\frac{1}{2}$	4 $\frac{1}{8}$	21 $\frac{1}{2}$	19	...	12	Do. . . .	B. F. Buck.

- 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 horn, and the heaviest we have weighed scaled 205 lbs. clean.



Skull and antlers of Eastern Red Deer shot by Prince Henry of Liechtenstein at Tartarow, Galicia, 1895. Length of antler, 46 inches. Weight, 20 lbs. 14 ozs.



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

The specimens in this list from Eastern Europe probably belong to the Carpathian and the Eastern races.

Number of Points.	Weight, Avoirdupois.	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 Stage.	Locality.	Owner.
16	23 6½	53½	9½	8½	7½	7½	...	...	...	...	526	Zemlen, Hungary	Count Géza Andrassy.
-18	over 20 lbs.	53½	11½	10	...	15½	10	...	...	...	453	Galicia	H. R. H. D. Mignel, Duke of Braganza.
11	...	52½	...	...	...	...	6½	14½	34½	40	...	Transylvania	Rhys Williams.
-18	20 5	52	...	...	...	...	7-25	...	32-75	45	504	Galicia	E. N. Buxton.
-18	19 1	51½	10½	8½	6½	8½	...	...	...	...	...	Ungghvar	Count Béla Széchényi.
-14	23 0	51	11	8½	7	9	7-20	27	38	47	519	Zemlen Comitatus	Count Géza Andrassy.
1 14	...	51	...	...	...	...	7-25	23-5	39-5	50	...	Hungary	Viscount Powerscourt.
-16	...	50½	11½	...	...	...	...	...	...	...	...	Do.	Count Géza Andrassy.
-21	21 3	50-4	...	6-08	...	...	...	30	...	55-9	...	Pilis Mountains	Duke of Ratibor.
-14	20 8	50	11½	9½	7½	6½	...	...	...	...	418	Hungary	Archduke Frederick.
-14	...	50	...	...	...	...	6	42	40	...	...	La Mandria	J. I. S. Whitaker.
-18	...	50	...	...	...	...	7½	...	...	48	...	Galicia	Rudolph Pick.
-10	...	50	10½	7½	...	6½	...	...	...	...	...	Hungary	Count Béla Széchényi.
-14	31 and an oz. or two	49½	...	...	...	...	...	...	39½	...	...	Radate	Prince Lulu Rohan.
-16	20 0	49-6	10-8	9-3	7-11	9-7	6-8	55-4	43-11	...	433	Hungary	Count Rudolf Ertlódy.
-18	...	49½	10½	9½	6½	9½	...	...	...	48½	354	Do.	Count Joseph Hoyos.
-12	21 0	49	10½	...	...	...	...	...	...	...	...	Do.	Prince Philip of Saxe-Coburg and Gotha.
-16	...	49	...	...	...	...	...	...	...	43	...	Galicia	Prince Henry of Liechtenstein.
-20	25 3	48-8	...	...	...	...	...	...	...	...	...	S.W. Hungary	Prince Hugo Windischgrätz.

14	48½	...	...	6½	34	30	37½	Carpathians	Lieut.-Col. L. Marshall.
-19	48	...	8½	...	...	...	...	Moravia	Prince John of Liechtenstein.
-19	48	...	9	...	...	27	48	Gotha	H.R.H. the Duke of Saxe-Coburg and Gotha.
20	48	...	...	6½	33½	41½	51½	Germany	Viscount Powerscourt.
1 18	48	...	...	7	38	43	58	Hungary	Do.
-14	48	23 0	10	7½	13	25	32	Galicía	H.R.H. D. Miguel, Duke of Braganza.
-16	47½	20 9½	11½	9½	...	...	...	Hungary	Prince Philip of Saxe-Coburg and Gotha.
-16	47½	...	11½	8½	35½	25½	29½	Do.	Count Ferdinand Trauttmansdorff.
-13	47	...	...	6½	12½	31½	...	Galicía	A. von André.
-16	46½	...	9½	8½	...	...	...	Hungary	Antal Réh.
-12	46½	...	11½	10½	...	...	...	Do.	Count Esterhazy.
-18	46½	19 13	11	9½	6½	7½	523	S.W. Hungary	Count László Májláth.
-16	46½	22 14½	12½	...	...	...	...	N.E. Hungary	Head-keeper Ganovszky.
-20	46½	20 13	9½	7½	...	...	...	Do.	Count Francis Nádasdy.
-16	46½	19 6	9½	8½	6½	6½	590	S.W. Hungary	Count László Májláth.
-14	46½	...	10½	9½	...	...	...	Hungary	Gaspar Geiszt.
-14	46½	...	9½	8½	...	...	...	Do.	Count Pal Dégenfeld.
-16	46-46	20-68	11-02	9-45	8-07	6-89	...	Do.	Prince Victor Ratibor.
-22	46½	...	9½	9½	6½	8½	42½	Do.	Count Max Hoyos.
-20	46½	22 9	10½	9½	6½	8½	...	Do.	Count Béla Széchényi.
-14	46½	17 11½	9½	8½	...	...	...	?	Count Jenő Zichy.
-16	46-06	19-91	11-81	9-25	6-89	7-28	...	Hungary	Count Mittrowsky.
-14	46	...	...	...	...	...	...	Galicía	Prince Henry of Liechtenstein.

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

1 Dug up.



Eastern Red Deer Antlers. In the collection of His Majesty the Emperor of Austria.



Interlocked Antlers of Eastern Red Deer found near Juharos, Hungary, 1875.
In the collection of His Majesty the Emperor of Austria.

Number of Points.	Weight Avordupois,	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,	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	...	Bukovina	Count Erbach.
-16	...	45¾	10¾	9½	...	6¾	...	...	...	...	...	Hungary	Count Emil Széchényi.
-10	...	45¾	10	8½	...	7½	...	...	...	...	...	Do.	Albert Tulász.
10	19 10½	45½	11½	9½	7½	7½	...	...	...	...	...	Do.	Count Michael Esterhazy.
14	19 11½	45½	10½	9½	7½	8½	...	...	...	...	...	Do.	Archduke Joseph Augustus.
16	19 8	45½	11	9½	6½	7½	...	...	...	...	...	Do.	Head-keeper Ganowszky.
-14	...	45½	9½	8½	6½	7½	...	15½	...	32	...	Do.	Dr. Albert von Stephani.
24	23 4	45½	10½	8½	7½	7½	...	...	...	...	...	Do.	Count T. Ellz.
12	20 8	45½	9½	6½	6½	7½	...	...	...	...	572	Do.	Count Béla Széchényi.
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	8½	6½	6½	...	...	...	...	433	Do.	Archduke Joseph Augustus.
15	...	45½	9½	...	...	...	...	23½	34½	...	...	Roumania	Prince Demeter Ghika.
-22	28 10	45½	12	9½	7	14½	8½	29½	34½	...	...	Hungary	Prince Montenuovo.
-14	...	45	9	7½	5½	9	6	18½	34½	41½	...	?	W. H. Wilson.
-11	...	45	8½	7½	...	...	5½	21½	33	41	...	Galicía	Prince E. Demidoff.
14	...	44¾	10½	9½	...	5½	...	...	...	...	...	Hungary	Archduke Frederiek.
14	...	44¾	...	...	...	6	...	30½	29½	39	...	Do.	Hon. Walter Rothschild.
22	20 4½	44½	12½	10½	7½	6½	...	...	...	...	418	Do.	Archduke Frederiek.
-20	15·73	44·49	9·05	7·87	9·95	12·21	...	...	...	...	...	S. W. Hungary	Count Fassilo Festeics.

-14	16-17	44-49	10-63	9-45	6-49	8-07	...	...	N. Hungary	Count Béla Széchenyi.
10	...	44½	...	...	...	...	5½	40	Transylvania	S. H. Whitbread.
-12	18-3	44½	11½	9½	7½	6½	...	...	S.W. Hun-	Archduke Frederick.
1-22	18-4½	44½	10½	9½	6½	7½	...	...	N. Hungary	Prince Philip of Saxe-Coburg and Gotha.
-8	17-38	44-09	11-41	9-84	7-68	7-68	...	...	Carpathians	Count Michael Esterhazy.
-14	18-37	44-09	11-41	10-24	7-28	6-89	...	...	Do.	Jeno Kumd.
-16	...	44½	10½	10½	...	6½	...	...	Hungary	Count Fer. Nádasdy.
12	...	44	...	...	...	...	5½	25½	Sesawski	Dobha
-18	19-14	43-7	10-04	8-46	7-09	9-64	...	...	Hungary	Count Rudolph Erdödy.
-14	20-24	43-7	10-43	8-27	7-09	7-28	...	...	Do.	F. Pausinger.
-20	18-0	43-6	10-02	8-03	...	12-23	7-64	36-06	Do.	Count Tassilo Festetics.
12	...	43½	11	...	6½	5½	6½	15	Galicía	A. von André.
-14	...	43½	9½	8½	...	6½	...	...	Hungary	Count Tassilo Festetics.
-20	17-6	43-31	10-04	8-07	7-28	8-27	...	...	Do.	Do.
-14	20-1½	42½	9½	8½	7½	7½	...	...	Do.	Count B. Keglevich.
-16	22-0½	42½	12½	10½	7½	...	...	...	Do.	Count László Májláth.
-20	...	42½	9½	8½	7½	9½	...	47½	Do.	Count Henry Fünf kirchen.
-16	16-06	42-91	9-84	8-27	6-69	7-09	...	...	Do.	G. Jankovich.
-18	20-5	42-8	10-4	8-9	8-1	11	8	51-6	Do.	Count Rudolf Erdödy.
-18	19-1	42-7	...	8-5	...	...	...	...	Szilvás	Count Bombelles.
-20	20-13	42½	16½	9½	7½	7½	...	...	Hungary	Archduke Frederick.
11	...	42½	...	...	...	...	6	38	Galicía	Prince E. Demidoff.
-18	...	42½	10½	8½	...	6½	...	...	Rapoli	Marquis Pallavicini.
-20	...	42-3	9-1	8-5	...	...	...	...	Galicía	Count Szeclényi.

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

1 "Picked-up" specimen

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.
-16	17 6	42'13	11'61 10'24	7'09	7'68	...	...	...	...	583	Carpathians	Count Fer Nádasdy.
-20	18 8	42'1	...	9'1 ^b	...	...	...	...	...	...	Munkacs	Count Jose Hoyos.
-10	...	42 ¹ / ₂	7 5 ¹ / ₂	...	...	5 ¹ / ₂	11 ¹ / ₄	30 ¹ / ₈	32 ¹ / ₄	...	Styria	Sir Clement Hill.
-18	...	42 ¹ / ₈	9 ¹ / ₄ 8 ¹ / ₂	...	6 ¹ / ₄	...	...	...	...	...	Hungary	Archduke Frederick.
-12	...	42 ³ / ₈	9 ¹ / ₄ 9 ¹ / ₈	...	6 ³ / ₈	...	...	...	...	...	Do.	Count László Májláth.
12	...	42	...	...	...	...	...	35 ¹ / ₂	40	...	Galicia	E. N. Buxton.
17	18 0	42	8 ⁵ / ₈	...	...	...	42	...	...	...	?	Count Henry Coudenhove.
12	...	41 ¹ / ₈	...	...	...	5 ¹ / ₄	...	25 ¹ / ₄	...	...	Germany	British Museum.
18	18 3	41 ³ / ₈	10 ¹ / ₄ 8 ¹ / ₄	7 ¹ / ₂	7 ¹ / ₄	...	...	...	...	391	Hungary	Archduke Frederick.
18	22 11	41 ³ / ₈	10 ¹ / ₄ 9 ¹ / ₈	7 ¹ / ₈	8 ¹ / ₄	...	...	...	...	429	Do.	Do.
18	19 2 ¹ / ₂	41 ³ / ₈	10 ¹ / ₄ 9 ¹ / ₈	7 ¹ / ₈	6 ¹ / ₈	...	...	...	...	330	Do.	Do.
-18	18'26	41'73	10'24 9'25	7'09	8'07	...	...	...	...	...	Do.	Count Fery Nádasdy.
12	...	41 ¹ / ₂	...	...	...	5 ¹ / ₄	22 ¹ / ₂	32	...	...	Do.	H. R. H. le Duc d'Orléans.
-14	20 0	41	...	7 ¹ / ₈	9 ¹ / ₈	...	...	31 ¹ / ₈	...	...	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	...	40 ⁵ / ₈	...	...	8 ³ / ₈	...	28 ³ / ₈	31 ¹ / ₂	...	...	Roumania	Prince Nicholas Ghika.
26	18 3	40 ⁹ / ₈	10 ⁵ / ₈ 8 ¹ / ₈	6 ¹ / ₈	...	...	...	...	...	...	Hungary	Count Michael Esterhazy.
17	26 0	40 ⁹ / ₈	10 ¹ / ₄ 9 ¹ / ₈	8 ¹ / ₄	9 ¹ / ₈	...	...	...	...	...	Do.	Head-keeper Ganovszky.
-13	...	40 ¹ / ₄	...	...	...	5	20 ¹ / ₈	27 ³ / ₈	...	...	Tyrol	H. R. H. the Duke of Saxe-Coburg and Gotha.
-20	18'50	40'10	...	...	...	...	...	...	...	...	Agarév, S.W. Hungary.	Count Tassilo Festetics.
20	20 4 ¹ / ₂	40 ¹ / ₈	10 ¹ / ₄ 9 ¹ / ₈	7 ¹ / ₈	9 ¹ / ₈	...	...	...	...	455	Hungary	Archduke Joseph Augustus.

-18	...	40	...	10	...	...	...	28	49	...	Gotha	II, R. H. the Duke of Saxe-Coburg and Gotha.
..	10	...	...	...	...	6½	28½	33½	45½	...	Moravia	G. D. Whatman.
15	...	39½	...	10	9½	7½	21½	30½	37½	...	Hungary	A. von André.
-14	22	0½	...	12	10	8½	...	...	...	433	Do.	Prince Philip of Saxe-Coburg and Gotha.
-22	21	13	...	11	9	8½	...	...	...	...	S.W. Hungary	Count Tassilo Festetics.
-14	...	37	...	...	...	...	21½	30	...	...	Macedonia	H. J. Elwes.
-20	...	36½	...	10	7½	7½	...	12½	...	...	Hungary	Prince Philip of Saxe-Coburg and Gotha.
10	...	31½	...	...	...	...	12	18½	...	...	Tenuta la Mandria,	H. R. H. le Duc d'Orléans.
-44	19	0½	...	...	...	...	...	...	44½	342 (clean)	Rominten, N.E. Germany.	H. I. M. the German Emperor.

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

FOUR GERMAN RED DEER IN THE COLLECTION OF VISCOUNT POWERSCOURT.

	No. 1.	No. 2.	No. 3.	No. 4.	No. 1.	No. 2.	No. 3.	No. 4.
Greatest width	ins. 40½	ins. 48	ins. 47½	ins. 43	ins. 14	ins. 20	ins. 12	ins. 20½
Length of antlers	.. 42½	.. 52½	.. 42½	.. 45½	.. 14	.. 22½	.. 13	.. 20½
Length of brow-time (right)	.. 13½	.. 17½	.. 15½	.. 7½	.. 7	.. 11	.. 14	.. 12
Do. do. (left)	.. 12	.. 18½	.. 15	.. 7½	.. Do.	.. do.	.. 10	.. 11
Length of bez-time (right)	.. 16½	.. 12½	.. 10½	.. 8½	.. Circumference	.. 7½	.. 10½	.. 8½
Do. do. (left)	.. 16	.. 13½	.. 12	.. 9				

Viscount Powerscourt informs me that the 18 stag heads in the entrance hall at Powerscourt, mounted on papier-mache heads, were bought at Munich in 1863, by the advice of the late Count Arco-Zinneberg, the owner of the famous collection in the Wittelsbacher Platz at Munich. The hall where Count Arco-Zinneberg's collection hangs contains upwards of 2500 heads of German Red-deer and Roe-deer of extraordinary weight and size, forming, with the one exception of the King of Saxony's collection at Moritzburg, near Dresden, perhaps the finest in the world. Count Arco became so well known as a collector that every fine specimen was brought to him for purchase. Count Erlbach's collection at Erbach in the Odenwald is also one of the finest in Germany.

Hungary, 1868.



Styria, 1881.



Hungary, 1873.

Hungary, 1873.

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

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

Specimens from the Plains of Hungary.

Date.	Tips.	Length.		Tip to Tip.	Widest		Circumference of Burr.	Locality.
		Outside Curve.	Burr to Highest Point.		Inside.	Outside.		
24th September 1874	6 + 7	41½	35½	21½	33	31½	7½	Szent Kiraly.
28th "	6 + 6	40½	34	15½	28½	32	5½	Do.
6th October 1868	6 + 7	40½	36	35½	35½	42½	6½	Babat.
" " 1873	7 + 10	39½	35½	29½	32½	33½	5½	Szent Kiraly.
7th " "	8 + 6	39½	36	21½	27	35½	6½	Do.
" " "	7 + 8	37½	34	25½	31½	41	6	Do.

Specimens of the Mountain Form.

8th August 1892	5 + 5	41½	33	12½	27½	23½	7	8	Brachberg (Upper Austria).
1st October 1885	4 + 4	41½	28	18	32½	...	47	...	Graben, Styria.
30th September 1885	5 + 4	37½	31½	24½	31½	28	6	...	Taschl, do.
2nd October 1881	10 + 7	36½	30½	27½	31½	40½	7½	...	Mürzsteg, do.
3rd " 1884	6 + 6	36	31½	14½	27	...	6½	...	Grasleiten, do.
5th " 1889	7 + 8	34½	33	14½	23½	25½	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.

i.—Ancient Continental Specimens.

Length (straight).	Circumference.	Tip to Tip.	Spread.	Points.	Locality.	Owner.
...	...	...	...	33 + 29	?	H.M. the King of Saxony, Moritzburg.
¹ 48	14 of burr	...	6 ft. 3 ⁶ / ₁₀	12 + 11	?	Do.
...	...	...	...	25 + 12	?	Do.
...	...	...	...	28	?	H.R.H. the Duke of Saxe-Coburg and Gotha.
46 ¹ / ₂	8 ³ / ₈ above trez	5 ft. 2 ¹ / ₄	...	22	Alpine Stag?	Count Erbach-Erbach.
...	9 ² / ₈	...	...	28	Do.	Do.
... (on curve)	...	...	...	22	Switzerland	Do.
39 ³ / ₄	5 ³ / ₄	16	22 ¹ / ₂ inside	9 + 9	?	Viscount Powerscourt.
39 ¹ / ₂	6 ¹ / ₂	22	31 ¹ / ₂ outside	6 + 6	Germany	Do.

- Owner's measurements.

¹ Weight, 41¹/₂ lbs.



Antlers of New Zealand Red Deer.

i.—New Zealand Specimens (introduced).

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
46	5	...	...	41	12	...	Otago . .	H. E. Hodgkinson.
44½	5	8½	30	36¾	6+6	...	Do. . .	H. M. Cliff.
44¼	5½	...	...	37½	14	...	Do. . .	C. D. Hodgkinson.
42	5½	24⅝	33½	37¼	6+5	...	?	A. D. Whatman.
42	5½	...	...	37½	9+7	...	Otago . .	W. Allen.
41½	6	16	...	28½	6+5	...	Do. . .	Do.
41	6¼	...	...	31½	6+5	...	Do. . .	J. S. Handyside.
41	5¼	...	...	37	7+6	...	Do. . .	C. R. Westmacott.
39	5½	...	...	31	6+6	...	Do. . .	H. McLean.
38¾	5¼	15	26	31½	6+6	...	Wairarapa .	E. N. Senior.
38½	6	32	25	...	17	...	Do. . .	J. Strang.
38½	6¼	...	...	33	6+6	...	?	A. Pilkington.

- Owner's measurements.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Weight.	Locality.	Owner.
38½	...	...	...	40	8+7	...	?	E. W. Bunny.
38	5	...	...	33	6+6	...	Wairarapa	E. C. Studholm.
37½	5½	19½	28½	...	6+6	{ 400 lb. } { estimated }	Otago	C. R. Westmacott.
37½	5½	8	24½	27½	6+7	...	?	Lord Boringdon.
37	5½	18½	24½	33½	7+6	...	Otago	E. L. Fletcher.
37	5	...	...	34	6+5	...	Do.	W. Telford.
36½	6½	...	32½	...	9+9	...	Wairarapa	J. S. Handyside.
36	4½	16½	26	31	6+6	...	?	Dr. J. von Arkle.
36	4½	...	...	33½	5+5	...	Otago	W. Telford.
35½	9½	27	23½	...	22	...	Wairarapa	N. Grace.
35½	7½	40½	33	...	6+7	...	Do.	T. E. Donne.
31½	5½	10½	18	...	6+7	...	North Island	R. Shoolbred.

- Owner's measurements.

B.—CARPATHIAN RED DEER (*Cervus elaphus* var.).

The Carpathian red deer, as represented in the Marmaros district, appears to be to a great extent intermediate between the western and eastern races of the species, having the short face, complex antlers, and red-brown summer coat of the former, but tending to show the blackness of the under parts characteristic of the latter. The red is perhaps less bright than in the western, and the black less abundant than in the eastern race.

A stunted form of the maral or eastern race also occurs in the Marmaros forest, where it is locally known as the Polish, or wandering, stag.

Some of the antlers catalogued under the heading of the eastern race probably belong to the present form.



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

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

In this race of the red deer, which may intergrade with the typical race 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 the true 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 western 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



Antlers of Eastern Red Deer, from the Carpathians, in the Powerscourt Collection.

less complex than those of the western race, 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 it extends into the Crimea, and probably Asia Minor, and so on into Transcaucasia, the Caucasus, probably Circassia, and the Galician Carpathians. In the Marmaros district of the Hungarian Carpathians there occurs, as stated above, a stunted form of maral, known as the Polish stag, believed to be an immigrant from Galicia. In the Bukovina district of the Galician Carpathians sportsmen recognise a large grey stag in the plains (apparently the true maral) and a smaller and darker mountain race (*C. claphus montanus*). It is noteworthy that specimens from the Caucasus have shorter faces than those from Northern Persia, and thus approximate to the western types. Sportsmen prefer to call this race the Hungarian red deer; this, however, is scarcely legitimate, as Hungary is not the typical locality. (For other specimens, see pp. 27 *et seq.*)

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
48½	6	30	41½	...	5+6	Ichater Crimea	Dagh, H.R.H. the Duke of Saxe-Coburg and Gotha.
48½	7¼	(single antler)	...	...	12	Asia Minor	British Museum (Lord A. Hay).
48	7¼	...	...	...	...	Caucasus	St. George Littledale.
47¾	5½	38	...	...	6+5	Do.	Do.
47¼	7¼	33½	43¼	54¼	10+9	Do.	Do.
46¾	5¾	18	33	...	8+8	Do.	British Museum.
46¾	6¾	...	39	...	8+6	Asia Minor	F. E. Whittall.
45½	5¾	42¾	49	52	6+6	Caucasus	S. H. Whitbread.
45½	8½	65¼	...	...	14	Do.	Grand Duke Mikhael.
45½	7¼	32¾	40½	46	8+8	Do.	Prince E. Demidoff.
45¾	5¾	42	35¾	...	6+7	Ak Dagh, Minor	Asia The Maclaime of Lochbuie.
45¼	7¾	...	...	...	9+6	Asia Minor	Sir Edmund G. Loder, Bart.
¹ 45	8	36	42	...	11+10	Caucasus	Prince E. Demidoff.
45	6¼	30½	38½	44½	7+6	Asia Minor	H. O. Whittall.
44½	6¾	31	39½	47½	8+7	?	Duke of Bedford.
44½	7½	19¼	26	36¼	7+6	Asia Minor	F. W. Baker.
44¼	6¾	(single antler)	...	...	9	Do.	British Museum (C. G. Danford).

- Owner's measurements.

¹ Estimated weight, 746 lbs.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
43½	6	...	40	...	8+6	Asia Minor	M. Le C. Findlay.
43½	5½	16	28	...	6+6	Crimea	Earl of Dunmore.
43	5¾	38	39¾	49	7+7	Ak Dagh	J. W. Williamson.
43	5½	22¾	32¾	37½	7+6	Do.	H. Williamson.
42½	6½	25	...	34	10+11	Crimea (?)	H. J. Elwes.
42½	7	27	31½	34½	8+7	Caucasus	Prince E. Demidoff.
42	6¼	28	33½	44½	9+8	?	R. A. Cooper.
42	6	26¼	34½	42	7+6	Ak Dagh	T. Bowen Rees.
42	6¼	24	30	35	7+7	Asia Minor	J. B. Jenkinson.

D.—N. AFRICAN RED DEER (*Cervus elaphus barbarus*).

For characters, see page 15.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
38¾	5¾	...	...	...	6+5	North Africa	Sir Edmund G. Loder, Bart.
36½	4¾	22¾	28¾	...	4+4	Do.	British Museum.
36¾	4½	17½	25¾	...	4+4	Do.	Do.
30½	3¾	...	...	...	4+3	?	Duke of Bedford.

- Owner's measurements.



Antlers of Hangul or Kashmir Barasingha.

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 aside, 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 buttocks, 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 a wapiti, instead of roaring in the 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 finest pair of antlers of which Mr. A. O. Hume has any record was given by Raja Gulab Sing to Colonel King, then commanding the 14th Hussars. On his death they passed to Captain Prettyjohn of the same regiment. What became of these antlers Mr. Hume was never able to ascertain, but he measured them at Meerut in 1852 or 1853, and the record stands, R. 52, L. 53½, measured along the curve inside. Girth 10 inches at burr, and 7 half-way between bez and trez tines. They were a very wide-branching, symmetrical pair.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
-48½	7½	14	33	7+5	Lidar Valley, Kashmir	K. S. Laurie.
47	7½	21	36	7+5	Kashmir . . .	Bombay Natural History Society.
47	6¾	21¼	36¾	5+5	Do. . . .	Sir Edmund G. Loder, Bart.
47	6¼	30	35½	8+8	Do. . . .	Duke of Wellington.
47	6	20	34¾	6+5	Do. . . .	Major H. R. Cook.
45¾	8	35	41	6+6	Do. . . .	British Museum (Hume Collection).
45¾	6	25¾	36	8+8	Do. . . .	Sir Victor Brooke's Collection.
45½	6¼	16½	34	6+5	Do. . . .	Col. E. H. Molesworth.
45	6¼	19	34	6+6	Do. . . .	Major-Gen. Sir R. Pole-Carew, K.C.B.
-44¾	6	20	43	5+5	Lidar Valley . . .	Queen's Own Corps of Guides.
-44½	6½	31½	44¾	5+5	Kishenganga Valley . . .	Do.
44½	6	27¾	38¾	4+4	Sind Valley . . .	J. V. Phelps.
44	7¼	30¾	40¾	5+5	Do. . . .	P. H. G. Powell-Cotton.
44	6¾	23¼	36½	5+5	Do. . . .	Naval and Military Club.
44	6	27	36	5+5	Kashmir . . .	Hon. Walter Rothschild.
44	6¾	34½	47½	5+5	Do. . . .	Capt. V. Rickard.
43¾	5¾	18½	29	5+5	Do. . . .	C. H. Smith.
43½	6	15½	29¾	7+7	?	C. M. Truman.
43	5½	34	41½	5+4	...	H.R.H. the Prince of Wales.
43	6	20	35	6+5	Sind Valley . . .	A. O. Hume.

- Owner's measurements.

Length on outside curve.	Circumference between bez and trez.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
43	5 $\frac{7}{8}$	26 $\frac{1}{2}$	37 $\frac{7}{8}$	6+5	Kashmir . . .	Martyn Kennard.
43	5 $\frac{1}{4}$	19 $\frac{3}{4}$	34 $\frac{1}{2}$	6+6	?	Captain F. W. H. Walshe.
42 $\frac{3}{4}$	5 $\frac{1}{2}$	18	33 $\frac{3}{4}$	6+5	Kashmir . . .	Major R. Baker Carr.
-42 $\frac{1}{4}$	6	38	37 $\frac{1}{2}$	6+8	Do. . . .	Dr. Albert von Stephani.
42	4 $\frac{1}{2}$	13 $\frac{1}{4}$	29 $\frac{1}{4}$	5+5	?	Duke of Bedford.
42	5 $\frac{3}{4}$	13 $\frac{1}{2}$	26 $\frac{1}{2}$	5+5	Kashmir . . .	E. L. Phelps.
42	5 $\frac{1}{2}$	20	35 $\frac{1}{2}$	6+5	Do. . . .	W. H. Conduitt.
41 $\frac{3}{4}$	5 $\frac{3}{4}$	23 $\frac{1}{2}$	35	5+5	Do. . . .	Major Kingsley Foster.
41 $\frac{1}{2}$	5 $\frac{3}{8}$	7 $\frac{1}{2}$	28	7+5	?	Major G. P. Campbell.
41 $\frac{3}{8}$	5 $\frac{3}{4}$	23 $\frac{3}{4}$	33	5+5	Kashmir . . .	British Museum (R. Lydeker).
41 $\frac{1}{4}$	6	15 $\frac{5}{8}$	29	7+6	Tral Valley . . .	P. W. Cobbold.
-41	...	...	...	13	Do. . . .	H. H. The Maharaja of Travancore.
-41	6	23	37 $\frac{1}{2}$	...	Kashmir . . .	The late Major W. D. B. Fenton.
40 $\frac{1}{2}$	5 $\frac{3}{8}$	31 $\frac{1}{2}$	39 $\frac{1}{2}$	6+5	Do. . . .	Capt. F. W. H. Walshe.
40 $\frac{1}{2}$	6 $\frac{1}{2}$	15 $\frac{1}{2}$	28	5+5	Do. . . .	Sir Robert Harvey, Bart.
40 $\frac{1}{2}$	6	27 $\frac{3}{4}$	36	5+5	Do. . . .	Col. G. D. F. Sullivan.
40 $\frac{1}{4}$	5 $\frac{3}{4}$	23	37 $\frac{1}{2}$	6+6	Do. . . .	P. Radclyffe.
40 $\frac{1}{4}$	7 $\frac{3}{8}$	24 $\frac{1}{2}$	3	5+5	Do. . . .	Major H. W. Codrington.

- Owner's measurements.



Skull and Antlers of Yarkand Stag. From Mr. A. O. Hume's specimen.

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 antler is often bent forwards in a shou-like manner.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
40 $\frac{1}{4}$	5 $\frac{1}{2}$	23 $\frac{3}{4}$	31 $\frac{3}{4}$	...	5+5	Maralbashi . . .	A. O. Hume. (See illus- tration.)
40	5 $\frac{1}{2}$	25	31	...	6+5	Do. . .	E. L. Phelps.
39 $\frac{1}{2}$	6	24 $\frac{1}{2}$	25	...	7+6	Do. . .	A. O. Hume.
39 $\frac{1}{4}$	5 $\frac{3}{4}$	16 $\frac{1}{2}$	28 $\frac{3}{4}$	...	6+6	Do. . .	David T. Hanbury.



Skull and Antlers of Shou. From Mr. A. O. Hume's specimen.

SHOU or SIKHIM STAG (*Cervus affinis*).

A very large stag with antlers 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. General colour pale rufous brown, with a light rump-patch in winter and light rings round the eyes.

According to Mr. Claude White, Commissioner of Sikhim, this fine

stag 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-pu basin, near Lhasa (see the *Field*, October 27, 1906).

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 $\frac{3}{8}$	7+6	Tibetan Frontier	A. O. Hume. (See illustration.)
55 $\frac{3}{4}$	6 $\frac{7}{8}$	26 $\frac{1}{8}$	44	5+5	Do.	British Museum (B. H. Hodgson).
54 $\frac{3}{4}$	6 $\frac{5}{8}$	21 $\frac{3}{8}$	37 $\frac{1}{4}$	5+5	Do.	British Museum (Dr. Campbell).
53 $\frac{1}{4}$	6 $\frac{7}{8}$	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.	Lieut.-Col. H. A. Iggulden.
49 $\frac{1}{2}$	7 $\frac{1}{2}$	38	45 $\frac{1}{2}$	5+5	Do.	Col. J. Biddulph.
-48	6	30	42 $\frac{1}{4}$	5+5	Chumbi Valley.	Lord Curzon.
-48	6 $\frac{1}{4}$	30 $\frac{3}{4}$	¹ 39	5+5	Tibetan Frontier	H. J. Elwes.
48	6 $\frac{3}{8}$	17	34 $\frac{1}{2}$	6+5	Do.	H. R. H. le Duc d'Orléans.
47 $\frac{7}{8}$	5 $\frac{3}{8}$	30 $\frac{3}{8}$	40 $\frac{1}{2}$	5+5	Do.	British Museum.
-43	...	...	...	...	Chumbi Valley.	Indian Museum.
41	6 $\frac{1}{4}$	...	...	6+4	?	Duke of Bedford.
39 $\frac{3}{4}$	5 $\frac{3}{8}$	20	31 $\frac{1}{4}$	5+5	?	E. P. Tennant.

- 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 is 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	...	...	5+5	Do. . . .	British Museum.
-36	4½	32	32	5+5	? ¹	Indian Museum.

- Owner's measurements.

¹ Bought at Darjiling, thither brought by Tibetans.

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 either 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 (*C. canadensis typicus*). The height at the shoulder is about 5 feet 4 inches, and the weight from 700 to 1000 lbs.

A.—ROCKY MOUNTAIN WAPITI (*Cervus 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.	Widest outside.	Points.	Locality.	Owner.
¹ 70½	...	14½ above burr.	...	...	68	6+6	Olympic Mts., Washington	W. F. Sheard.
66	...	...	...	...	60	6+6	Wyoming	J. Darley.
65	7½	...	...	...	40	7+7	Laramie Plains, Wyoming	Schoverling, Daly, and Gales.
64½	...	9½	41½	49	...	6+7	Wyoming . .	James J. Harrison.
64½	8	...	31½	45	52	7+6	?	Viscount Powers- court.
64½	8	...	...	48	...	7+7	N.W. Wyoming	A. Rogers.
63½	8½	...	49½	48½	...	7+9	North Prong .	Frank Cooper.
63½	8	...	39	45½	52	7+7	Wyoming . .	H. A. C. Darley.
62	7¾	...	33½	50¾	...	7+7	Snake River, Colorado	Ernest Farquhar.
61½	7½	...	...	45	...	6+6	Bighorn Mts., Wyoming	Do.
61	8	...	...	52	...	6+6	Do.	Sir H. Seton-Karr.
61	8	...	36½	46½	55	8+8	?	Viscount Powers- court.
60½	8½	...	...	55	...	7+6	Wyoming . .	E. Grant.
60½	8½	14	...	...	52	9+8	White River .	Dall de Weese.
60¾	7½	...	43	46½	...	6+6	Wyoming . .	Major C. C. Ellis.
60	8½	...	36	37½	45	6+6	Do. . . .	W. Winans.
59½	7	...	38	48½	52	8+7	Wyoming . .	L. E. Sackville West.
59½	8½	3	37½	47	...	8+8	S.E. Wyoming.	His Majesty the King.
² 59½	7½	...	...	45	...	6+6	?	Sir H. Seton-Karr.
59½	...	10½	...	37½	59	...	Bighorn Mts. .	Sir Savile Crossley, Bart.

— Owner's measurements.

¹ Other antler, 70 in. Photograph and owner's measurements of this particular trophy can be seen at Piccadilly.

² Measured by American Exhibition Committee.



Head of Rocky Mountain Wapiti.
Shot by Mr. W. Moncreiffe. For measurements see next page.

Length on outside curve.	Circumference between bez and trez.	Circumference of burr.	Tip to Tip.	Widest inside.	Widest outside.	Points.	Locality.	Owner.
59	7 $\frac{3}{4}$	...	39	46	53	9+7	Wyoming .	Sutton Timmis.
58 $\frac{1}{2}$	...	9 between brow and bez.	...	46 $\frac{1}{2}$	50 $\frac{1}{2}$	10+7	Wyoming .	Hon. T. A. Brassey.
-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	...	9 $\frac{1}{16}$	42	47 $\frac{1}{4}$	...	7+6	Wyoming .	A. H. Straker.
58	7 $\frac{3}{8}$	...	43 $\frac{1}{2}$	49	...	9+8	Wyoming .	W. Moncreiffe. (See illustration.)
-58	...	10	41	...	49 $\frac{1}{2}$	7+7	Do. .	W. T. Hornaday.
57 $\frac{3}{4}$	7	...	36	43 $\frac{1}{2}$	47	6+6	?	R. Fleming Crooks.
57 $\frac{1}{2}$	6 $\frac{3}{4}$	...	24 $\frac{1}{4}$	35 $\frac{5}{8}$	...	6+6	Montana .	Capt. Abdy.
57 $\frac{1}{4}$	...	9 $\frac{3}{8}$	32	42 $\frac{1}{4}$	...	7+7	Do. .	Sir Humphrey de Trafford, Bart.
-57	...	10	...	...	63	6+6	Montana .	T. D. M. Cardeza.
-57	7 $\frac{1}{4}$	...	...	...	...	7+7	Do. .	Count F. Trauttmansdorff.
57	7 $\frac{1}{8}$	...	53	49 $\frac{1}{2}$	61	8+9	Colorado .	Sir Edmund G. Loder, Bart.
57	7 $\frac{1}{4}$	...	35 $\frac{1}{8}$	41 $\frac{1}{8}$	...	6+6	Yellowstone Park	British Museum.
-56 $\frac{1}{2}$	6 $\frac{3}{4}$	...	...	...	46 $\frac{3}{8}$	6+6	Two Ocean Pass	President Roosevelt.
56 $\frac{1}{2}$	7 $\frac{1}{4}$	...	37	39 $\frac{1}{2}$	43 $\frac{1}{2}$	7+6	?	Duke of Bedford.
56 $\frac{1}{2}$	6 $\frac{3}{4}$	...	34	49	...	6+6	Montana .	Andrew Jameson.
-56	7 $\frac{1}{2}$	11 $\frac{3}{4}$	32 $\frac{3}{4}$	43 $\frac{3}{4}$	46 $\frac{1}{2}$	7+6	?	W. F. Gordon Cumming.
56	7	...	31	39	42 $\frac{1}{2}$	6+7	Wyoming .	J. V. Colby.
55 $\frac{5}{8}$	7	...	43 $\frac{1}{2}$	47 $\frac{5}{8}$	...	6+5	Do. .	Major G. Dalrymple White.
55 $\frac{1}{2}$	7 $\frac{1}{4}$	...	40	46 $\frac{1}{4}$	50	6+6	Do. .	P. B. Vander-Byl.
55 $\frac{1}{2}$	7	...	29 $\frac{1}{2}$	40 $\frac{1}{2}$	45 $\frac{1}{2}$	6+6	Do. .	T. P. Kempson.
55 $\frac{1}{2}$	6 $\frac{1}{2}$	...	44	45 $\frac{1}{2}$	...	6+6	?	A. H. Pollen.
55 $\frac{3}{8}$	7 $\frac{1}{8}$	...	46 $\frac{1}{4}$	...	...	7+6	?	St. George Littledale.
55	8 $\frac{1}{4}$	...	...	41 $\frac{1}{4}$	...	6+6	Wyoming .	Major Maitland Kirwan.
55	8	...	...	45 $\frac{1}{2}$	...	7+6	Do. .	Do.
55	7 $\frac{1}{8}$	...	...	47 $\frac{1}{2}$	...	6+5	Do. .	E. N. Buxton.
-55	8 $\frac{1}{8}$	...	...	41 $\frac{1}{4}$	...	6+6	?	A. Pendarves Vivian.

- Owner's measurements.

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.
55	7½	...	38	47	52½	7+7	Wyoming .	Viscount Powerscourt.
¹ 55	6⅝	...	...	...	...	14	?	Duke of Bedford.
54¾	6½	...	50½	51	60	6+6	?	E. S. Crasten.
-54¾	6¾	...	39¾	43½	...	6+6	Montana .	Count Scheibler.
54½	7¾	...	37	43¼	48	7+6	Do. . .	E. L. P. Burke.
54½	...	...	...	...	...	14	Colorado .	Sir Peter Walker, Bart.
54½	8	...	34¼	45½	...	6+5	Wyoming .	Lieut. - Col. Hon. W. Coke.
54½	9	...	...	palmed	...	11+7	Montana (?)	G. Wrey.
54½	6¾	...	28	37	46	6+6	?	F. I. Mitchell.
54½	6¾	...	43	43½	47	7+7	Wyoming .	Duke of Roxburghe.
54¾	6½	...	38¾	44¼	...	7+6	Wyoming	E. N. Buxton.
-54¼	8	...	...	43½	...	10+10	Montana .	W. A. Tulloch.
54¼	7⅝	...	49⅞	...	...	9+7	Wyoming	Hon. Walter Rothschild.
-54	8¼	...	...	...	...	13	Teton Mountains	H. Lennard.
² 54	7¼	...	...	48	...	8+7	Wyoming	Earl of Lonsdale.
54	6½	...	43½	44¼	47½	7+7	Do. .	H. H. Dutton.
54	7⅝	...	43	42	45	8+7	Do. .	P. Niedieck.
54	7¼	...	...	48	...	7+8	Do. .	Earl of Lonsdale.
54	7	...	29½	35½	44	7+6	Do. .	Sir H. Seton-Karr.
54	7¾	...	48	44	...	12	?	M. P. Grace.
-53½	8	...	43	44½	...	8+7	Wyoming	Count E. Hoyos.
-53½	6½	...	39	42	...	6+6	Do. .	Major G. Dalrymple White.
53¾	7⅝	...	47	49¾	...	8+7	Do. .	Ford G. Barclay.
53	6¼	...	36	40¼	45	7+6	Wyoming .	Lord Falconer.
53	7⅝	13	37½	41½	51	7+7	?	Hon. Walter Rothschild.
52	6½	...	41	44½	...	7+7	Idaho .	H. C. Nelson.
52	6⅝	...	35	40½	48½	6+6	Wyoming .	C. B. C. Storey.
-50½	7½	...	...	56½	58½	7+6	Do. .	Hugh Peel.

- Owner's measurements.

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



Skull and Antlers of West American Wapiti.

B.—WEST AMERICAN WAPITI (*Cervus canadensis occidentalis*).
(= *Cervus roosevelti*.)

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 Phillipp-Wolley.

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.

C.—THIAN-SHAN WAPITI (*Cervus 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 forest-clad portions of the Southern Altai and Thian-Shan ranges; it was first described by Dr. Severtzoff 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. eustephanus*. Some of the under-mentioned Altai specimens may belong to the next race.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
¹ 55	8	...	...	...	6+7	Bought at Kashgar	Earl of Northbrook.
54	7¼	49	46¼	50½	7+6	Thian Shan . . .	P. Church.

- Owner's measurements.

¹ Shed antlers bought by the late Sir Douglas Forsyth.



Skull and Antlers of Thian-Shan Wapiti. Shot by Mr. P. Church at Tarbagatai.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
53½	7¼	...	...	...	7+7	Thian Shan . . .	P. Church.
53	6¼	30½	39	46	6+6	Do.	J. V. Phelps.
53	6½	46	41	49	8+8	?	Duke of Bedford.
51	6½	39¾	40¾	50½	6+5	Thian Shan . . .	A. Ezra.
51	6¼	43¼	44½	46¾	7+6	Do.	St. George Littledale.
50¾	6	29½	38½	...	8+7	Altai	Duke of Bedford.
50½	9	...	...	...	10+9	Thian Shan . . .	P. Church.
50	6¾	39	43	51	6+6	Do.	Lord Osborne Beauclerk.
50	6½	26	35	38	7+6	Do.	A. Bayley-Worthington.
50	7¼	...	...	...	7+7	Do.	J. V. Phelps.
49¾	8	41	42½	...	7+7	Do.	Paris Museum.
49½	6¾	25½	36¼	47¾	6+5	Do.	St. George Littledale.
48	6½	45	41	55½	8+8	Kulja	Duke of Bedford.
47	6¼	24¾	32½	41	7+6	?	Major H. G. C. Swayne.
46½	6	36	40½	43	6+6	?	S. W. Carpenter.
46	8	46½	50	44	6+6	Thian Shan . . .	R. F. Glyn.
45½	6¼	34¼	39½	47	5+5	Altai	H. J. Elwes.
45½	7	27¾	35¾	40½	7+7	Thian Shan . . .	P. B. Vander-Byl.
45¼	5¼	42½	41¾	44½	6+6	Do.	R. Hayne.
44	6¼	25¾	31½	46½	7+6	C. Asia	Hon. Walter Rothschild.
43½	5¼	34¼	38	40	6+6	Thian Shan . . .	Lord Elphinstone.

- Owner's measurements.

D.—SIBERIAN WAPITI (*Cervus canadensis asiaticus*).

Imperfectly known, but said to differ from the last by the form of the antlers (which have frequently more tines), as well as by its inferior stature and lighter winter coat. It inhabits the Northern Altai and Siberia.

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

Named on the evidence of a specimen recently 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 Tchenkend, 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.—Tchenkend 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	26½	...	...	6+4	Turkestan	Duke of Bedford.

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

Antlers of a shorter and stouter type than in the Thian-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 reddish brown, with the dark winter mane and under-parts of other wapiti.

Distribution.—Northern Manchuria and Amurland.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Spread.	Points.	Locality.	Owner.
33½	5¾	18½	21½	...	6+6	?	H. J. Elwes.
32½	5¼	26⅞	26⅞	29⅞	7+6	?	Do.
31¾	6	17	25¾	29	8+7	?	Duke of Bedford.
31½	5	23½	24	26	6+6	?	Do.
31	4¾	26½	25¾	30½	6+5	?	Do.



Skull and Antlers of Japanese Sika.

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

The Japanese deer is the typical representative of a small 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 sub-genus *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, and Japan, and are represented by two closely allied 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 Manchurian race, or one closely allied, is found also in the Liu Kiu islands. Both races have been acclimatised in English and Irish parks. Weight (W. Winans), 180 lbs.—12 stone clean (Marquis of Waterford).

A.—JAPANESE SIKA (Cervus sica typicus).

Length on out-side curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
25½	5	17¾	4+4	Japan	Sir Douglas Brooke, Bart.
25¾	4½	20¼	4+4	Do.	Sir Edmund G. Loder, Bart.
22½	4	16	5+4	Bred in England	H.R.H. le Duc d'Orleans.
22	4	16¾	5+4	Do. Ireland	Sir Victor Brooke's Collection.
21½	3¾	13¾	4+4	Do.	Hon. Walter Rothschild.
20	3½	12¾	4+3	Do. England	W. Winans.
18½	3¾	...	9	Do. Ireland	Sir Victor Brooke.
17¼	3	16¼	4+4	?	Duke of Bedford.
16¾	3½	...	4+3	Japan	British Museum.
16½	3	9½	4+3	Bred in Ireland	Hon. John Ward.
15½	2¾	9¾	4+4	Do. England	Duke of Bedford.
¹ 15½	2¾	14¼	4+4	Do. Ireland	Marquis of Hamilton.
² 15½	...	...	6+5	Do.	Viscount Powerscourt.
15¼	3¾	12¼	4+4	Do.	Hon. R. A. Ward.

¹ Weight 143 lbs. as it fell.

² This stag when killed was estimated to be fifteen or sixteen years old, and had no teeth left.

B.—MANCHURIAN SIKA (Cervus sica manchuricus).

Length on out-side curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
-26	4¼	13¾	4+4	Manchuria	Paris Museum.
23	3½	18¼	4+4	Do.	Duke of Bedford.
-22¾	3¾	21½	4+4	Do.	Dr. Albert von Stephani.
15½	3	...	4+4	Do.	Duke of Bedford.

- Owner's measurements.

The following specimens are from hybrids between Japanese and Red Deer.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Weight.	Locality.	Owner.
29 $\frac{1}{4}$	4 $\frac{1}{2}$	17 $\frac{3}{4}$	21	5+4	14 st.	Bred in Ireland	Viscount Powerscourt.
28 $\frac{1}{4}$	4 $\frac{1}{4}$	14 $\frac{1}{4}$	18	5+4	14 st. clean	Do.	Do.
26 $\frac{1}{2}$	4	21 $\frac{1}{2}$	21	4+4	...	Do.	Do.

C.—FORMOSAN SIKA (*Cervus* [*Pseudaxis*] *taëvanus*).

Nearly allied to the common 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.	Circumference.	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.



Skull and Antlers of P'ekin Sika.

PEKIN 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 spots persist in the winter coat, although these disappear completely at this season in fully adult bucks, whose coats become 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 first named by the late 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-tse valley.

Length on out-side curve.	Circum-ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
32½	4½	16½	23½	4+4	(Shed horns)	Duke of Bedford.
32	4½	27	24¾	4+4	(See illustration)	Do.
31½	5½	27½	26¾	4+4	?	Sir Edmund G. Loder, Bart.
31½	4½	18½	...	4+4	?	Hon. Walter Rothschild.
29½	4¾	27¾	21	5+5	?	W. Banks.
27½	4¾	16½	19½	4+4	?	A. Hardcastle.
27	4½	23½	20	4+4	Manchuria	Hon. Walter Rothschild.
26	3¾	18	15½	4+4	Do.	E. P. Tennant.
24	4	22½	19	4+4	Do.	Hon. Walter Rothschild.
23½	3½	18½	16½	4+4	Do.	Duke of Bedford.
15¾	3	20	...	4+4	Ussuri, Manchuria	British Museum.



Peking Stag in summer coat, with the antlers in velvet.
Photographed by the Duchess of Bedford.



Head of Fallow Deer Buck, from a specimen belonging to Mr. J. Whitaker of Rainworth.

FALLOW DEER (*Cervus* [*Dama*] *dama*).

Antlers normally without a bez, but with a trez-tine, above which the beam is palmated, with numerous snags on the hinder 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. 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 Asia Minor wild fallow deer are found along the south coast as far as Adana, and at one spot in the interior.

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.
¹ 31	5	...	...	30	7	?	Sir Victor Brooke's Collection.

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

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Spread inside.	Points.	Width of Palm.	Locality.	Owner.
¹ 30	4 $\frac{3}{4}$	23 $\frac{1}{2}$	26 $\frac{1}{2}$	10+9	4 $\frac{1}{2}$	Drummond Castle, Perth	J. G. Millais.
30	4	19 $\frac{1}{4}$	24	11+11	6	?	D. M'Douall.
-30	4 $\frac{1}{2}$	22	37 outside	16+10	7	Drummond Castle, Perth	J. G. Millais.
-29 $\frac{1}{2}$	5	17	28 $\frac{1}{2}$	14+13	7 $\frac{1}{4}$	Petworth Park	Do.
29 $\frac{1}{4}$	4 $\frac{3}{8}$	...	...	14+11	8	Woburn	Duke of Bedford.
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.
² -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	Rev. W. C. Oliver.
³ 28 $\frac{1}{2}$	4	(Span 34) outside		19	6	Colebrooke	Sir Victor Brooke's Collection.
⁴ 28	4	(26)		18	5	Do.	Do.
⁵ -27 $\frac{3}{4}$	5	20 $\frac{1}{2}$	21 $\frac{1}{2}$	13+7	5 $\frac{3}{4}$	Do.	A. Basil Brooke.
27 $\frac{3}{4}$	4 $\frac{1}{4}$	32 $\frac{1}{2}$	25	11+10	...	Woburn	Duke of Bedford.
27 $\frac{1}{4}$	4	23	..	10+8	...	England	J. Carr Saunders.
-27	...	...	..	...	...	Nr. Blair Castle	Dowager Duchess of Atholl.
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 $\frac{3}{8}$	Perthshire	A. Basil Brooke.
-26	5	20 $\frac{3}{4}$	23 $\frac{3}{4}$	10+10	4 $\frac{1}{2}$	Tasmania	T. W. H. Clarke.
-26	5 $\frac{1}{4}$	20	22 $\frac{1}{2}$	11+13	7	Ashton Park	J. Whitaker.
⁶ 25 $\frac{1}{2}$	3 $\frac{3}{4}$	17 $\frac{1}{4}$	24 $\frac{1}{4}$	10+10	6	Surrenden Park	W. Winans.

- Owner's measurements.

¹ Weight of antlers, 8 lbs. 1 oz. on skull, no lower jaw (Millais, *op. cit.*)

² Weight dressed, 165 lbs.

³ Seven years old; as he fell, 237 $\frac{1}{2}$ lbs., 193 lbs. cleaned.

⁴ Seven years old; as he fell, 224 lbs. (Millais, *British Deer*).

⁵ Seven years old.

⁶ Weight 222 lbs.



Antlers of Mesopotamian Fallow Deer, from a specimen in the British Museum.

MESOPOTAMIAN FALLOW DEER (*Cervus* [*Dama*] *mesopotamicus*).

Larger and brighter coloured than the common 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 hinder border into several snags. Weight about 24 stone, clean (H. E. Whittall).

Distribution.—The mountains of Luristan in Mesopotamian Persia.

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	4½	30½	24½	10 + 11	5½	Asia Minor . .	Do.
21¼	3½	14½	...	9 + 7	...	Do. . .	Paris Museum (Abbé David).
20¼	5	14	...	6 + 5	...	Luristan . .	Sir Edmund G. Loder, Bart.

— Owner's measurements.



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

GIANT IRISH DEER (*Cervus* [? *Dama*] *giganteus*).

(Commonly called "Irish Elk.")

A huge 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.

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

- Owner's measurements.

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	...	9¾	19¼	19	British Museum.
-10 2	...	...	...	...	...	Thomas Bate.
9 8	...	...	...	20	12+11	Hon. Walter Rothschild.
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	...	15¾	...	Mrs. Graham Lloyd.
-9 2	...	11 10	10¼	22¼	9+9	Dublin Museum.
-9 2	...	...	...	...	20	Thomas Bate.
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	...	12 10	...	13½	...	Mrs. Graham Lloyd.
-8 9	...	...	...	18¾	9+8	H. J. Elwes.
8 7	5 9½	...	10	20	12+12	Viscount Powerscourt.
7 6	5 3½	...	8¾	...	10+11	Sir Victor Brooke's Collection.

- Owner's measurements.



Frontlet and Antlers of Indian Sambar.
From a specimen in the British Museum.

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

The typical representative of the Rusine group of deer, in which the antlers are rounded and three-tined, both the bez and trez being wanting, and the summit of the beam simply forked. The tail is long and bushy, the tear-gland and the pit in the skull for its reception are very large, and the upper ends of the nasal bones of the skull are 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, at all ages. 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 (*Cervus unicolor typicus*).

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

The longest 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.
¹ 50 $\frac{1}{8}$	9 $\frac{3}{8}$	24	...	3+3	Bhopal . . .	The late Sultan Dulah Nawab Ahmedali Khan.
48	7	Single shed specimen	...	3	Khandesh . . .	R. H. Madan.
47 $\frac{3}{4}$	...	...	28 $\frac{1}{2}$	...	Cent. Provinces . . .	A. P. Perceval.
46 $\frac{7}{8}$	...	49	...	3+3	Do. . . .	R. Wordsworth.
46 $\frac{1}{2}$	6 $\frac{1}{4}$	36 $\frac{3}{4}$	41 $\frac{1}{4}$	3+3	Do. . . .	Duncan J. A. Campbell.
46 $\frac{1}{2}$	6 $\frac{3}{8}$	24 $\frac{1}{8}$	30 $\frac{5}{8}$	3+3	Do. . . .	A. O. Hume.
46 $\frac{1}{2}$	...	45	...	...	Garhwal . . .	R. M. Nash.
45 $\frac{1}{4}$	7 $\frac{1}{4}$	38	42 $\frac{1}{2}$	3+3	Sangor, C.P. . . .	Lieut.-Col. R. W. Mapleton.
45 $\frac{1}{8}$	6 $\frac{5}{8}$	17 $\frac{3}{4}$	32 $\frac{1}{8}$	3+3	?	British Museum (Dr. H. Falconer).
45	7 $\frac{3}{8}$	22 $\frac{1}{2}$	33 $\frac{3}{4}$	3+3	Mayoghur, Cent. Provinces	Sir John Morris.
45	7 $\frac{1}{4}$	44 $\frac{7}{8}$	...	3+3	Western Ghats . . .	Major-Gen. Sir Arthur Ellis, K.C.V.O.
45	7 $\frac{3}{4}$	8	...	3+3	?	D. R. Wright.
² 45	...	...	...	...	Cent. Provinces . . .	Bombay Natural History Society.
45	9	...	...	...	Orissa . . .	H.H. the Maharaja of Travancore.
45	8	Picked up by G. Jones	...	...	Cent. Provinces (?)	Heighway Jones.
44 $\frac{1}{8}$	7 $\frac{5}{8}$	44 $\frac{3}{8}$	45 $\frac{7}{8}$	3+3	Rangeer, Do. . . .	Col. W. J. Morris.
44	...	34	...	3+3	Cent. Provinces . . .	J. D. Inverarity.

— Owner's measurements.

¹ Recorded in *Asian* by Major L. Impey.

² 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. 228. The animal was shot by Mr. R. Gilbert in the Central Provinces, but got away minus this piece of his antler.



Skull and Antlers of Indian Sambar ; the Antlers being of an abnormal type.
From a specimen in the possession of Mr. Bertram-Carey.

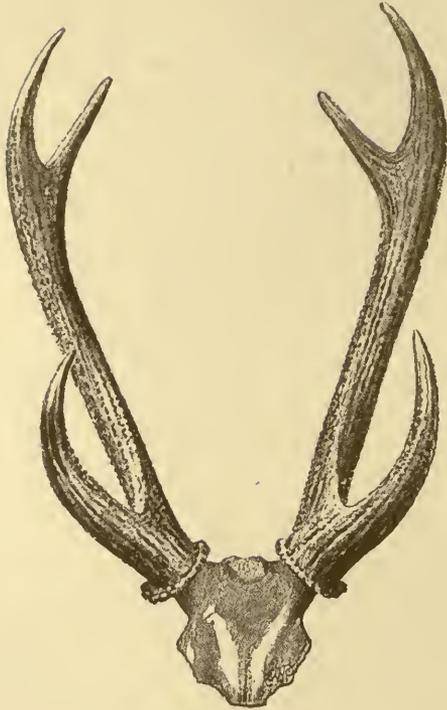
Length on outside curve.	Circumference above brow-tine.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
¹ 44	9	...	...	...	Rewa	Lieut.-Col. A. E. Ward.
44	6	9 $\frac{1}{4}$	24 $\frac{3}{4}$	3+3	Do.	Major C. F. Pinney.
44	6 $\frac{7}{8}$	19 $\frac{1}{4}$	31 $\frac{3}{4}$	3+3	Do.	H. E. M. Davies.
43 $\frac{5}{8}$	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 E. P. Bates.
43 $\frac{1}{2}$	6 $\frac{3}{4}$	25 $\frac{1}{4}$	34	3+3	Cent. Provinces . . .	Viscount Powerscourt.
43 $\frac{3}{8}$	6 $\frac{1}{4}$	20 $\frac{3}{8}$	29 $\frac{1}{8}$	3+3	Do.	Sir Robert Harvey, Bart.
-43 $\frac{1}{4}$	...	...	...	3+3	Do.	Capt. C. Hutton Dowson.
43	6	24 $\frac{1}{2}$	30	3+3	Khandesh	A. Cumine.
-43	9 $\frac{1}{2}$	26	23	3+3	Cent. Provinces . . .	Capt. J. H. Gwynne.
-42 $\frac{3}{4}$	8 $\frac{1}{4}$	20	...	7+5	Do.	Bertram-Carey.
42 $\frac{3}{4}$	5 $\frac{3}{8}$	26	32 $\frac{1}{4}$	3+3	Do.	A. H. Pollen.
42 $\frac{1}{2}$	6 $\frac{1}{4}$	15	27 $\frac{3}{4}$	4+4	Ghats of Simrol . . .	British Museum (Col. J. Evans).
42	6 $\frac{1}{4}$	23 $\frac{3}{4}$	35 $\frac{1}{2}$	3+3	?	Capt. A. H. Bailey.
41 $\frac{7}{8}$	6 $\frac{1}{4}$	33 $\frac{1}{8}$	35 $\frac{1}{4}$	3+3	Western Ghats . . .	Major-Gen. Sir Arthur Ellis.
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 . . .	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 $\frac{1}{4}$	5 $\frac{1}{4}$	22	24 $\frac{3}{4}$	33	Do.	W. O. Gibbs.

¹ Height at shoulder, 35 $\frac{1}{2}$ inches.

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	Major G. E. Hale.
-30	8?	21 $\frac{1}{2}$	19 $\frac{3}{8}$	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** (*Cervus unicolor equinus*).

This local race is nearly as large as the Indian sambar, but the antlers are generally shorter and thicker, with the hinder 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.
32½	7½	24½	27¼	3+2	Burma . . .	Col. O. E. P. Lloyd.
32	...	10	...	...	Do. . . .	Major W. Anstruther Gray.
31½	6	24¾	26	3+3	Do. . . .	B. Lentaine.
31	6¾	14¼	18¼	3+3	?	G. Monteath.
30½	6½	17¼	19¾	7+7	Borneo . . .	Sir Edmund G. Loder, Bart.
30½	5½	27¾	130	3+3	Burma . . .	Major G. H. Evans.
30¼	...	25	21	3+3	Mogong, Burma . . .	H. A. Kelso.
30½	4¾	20¾	21¼	3+3	Burma . . .	British Museum.
30	8¼	17	23	4+3	Manipur . . .	Major A. Wilson.
27½	4½	24½	20½	3+3	Burma . . .	A. E. English.
25	5½	14¾	16½	3+3	Do. . . .	Hon. Walter Rothschild.
24¾	5½	14	15	3+3	?	Duke of Bedford.

- Owner's measurements.

¹ Outside.

C.—FORMOSAN SAMBAR (*Cervus 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.
19¾	...	9	3+3	British Museum.
17	4¼	...	5	Duke of Bedford.
16½	3¾	16	3+3	British Museum.

D.—LUZON SAMBAR (*Cervus 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 in 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 $\frac{2}{8}$	5 $\frac{1}{4}$	7 $\frac{1}{2}$	4+4	Do. . . .	British Museum.
18 $\frac{2}{8}$	5 $\frac{1}{8}$	14 $\frac{3}{4}$	4+3	Do. . . .	Do.

E.—BASILAN SAMBAR (*Cervus 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 $\frac{2}{8}$	3+3	Do. . . .	Do.

F.—SZECHUEN SAMBAR (*Cervus unicolor dejeani*).

A large race from Northern 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	Ta-tsien-lou, Szechuan	Paris Museum (type specimen).



Skull and Antlers of Javan Rusa.
From a specimen in the British Museum.

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 hinder 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 front 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 (*Cervus hippelaphus typicus*).

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
37½	5 ³ / ₈	16	17 ³ / ₄	3+3	Java . . .	H. R. II. the Prince of Wales.
—36	...	11½	...	3+3	Mauritius (introduced)	Admiral Sir William Kennedy.
35½	4 ³ / ₈	22 ³ / ₄	...	3+3	Java . . .	Sir Victor Brooke's Collection.
35¼	4½	17½	17	3+3	Do. . . .	Hon. Walter Rothschild.
34½	4 ⁵ / ₈	17¼	22¼	3+3	Do. . . .	Capt. C. Keppel, R.N.
¹ 34	...	...	...	...	Rodriguez (introduced)	Admiral Sir William Kennedy.
33½	5	12	...	3+3	Java . . .	Sir Edmund G. Loder, Bart.
33	4½	25½	...	3+3	Do. . . .	Duke of Bedford.

¹ Weight 269 lbs.

B.—MOLUCCAN RUSA (*Cervus hippelaphus moluccensis*).

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
36 ¹ / ₈	4 ⁵ / ₈	18½	3+3	?	Sir Edmund G. Loder, Bart.
27½	4 ³ / ₄	14½	3+3	?	Duke of Bedford.
14 ³ / ₄	3¼	...	3+3	?	Do.
8 ³ / ₄	4	5 ¹ / ₈	...	Batchian . . .	British Museum (A. R. Wallace).
6¼	3 ³ / ₈	5 ⁵ / ₈	...	?	British Museum.

- Owner's measurements.



Antlers of Chital.

CHITAL or AXIS DEER (*Cervus 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.

Distribution.—India and Ceylon.

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*).

RECORDS OF BIG GAME

Length on outside curve.	Circumference above the first point.	Tip to Tip.	Points.	Locality.	Owner.
-38 $\frac{1}{4}$	4 $\frac{3}{4}$	19 $\frac{1}{2}$	3+3	Asirgarh Jungle, Central Provinces	Lieut.-Col. M. Cust.
38	4 $\frac{3}{4}$	18	3+3	East Berar . . .	Brig.-Gen. F. H. Whitby.
38	4 $\frac{1}{4}$	20	4+4	Do. . . .	Lieut.-Col. H. D'U. Keary.
38	4 $\frac{1}{2}$	22	4+4	?	Col. A. Pollock.
37 $\frac{1}{2}$	3 $\frac{3}{4}$	19	3+3	Siwalik Hills . .	Capt. B. R. M. Glossop.
37 $\frac{1}{2}$	4 $\frac{1}{2}$	24	5+4	?	F. Pope.
37 $\frac{1}{2}$	4 $\frac{1}{4}$	24 $\frac{3}{8}$	4+4	Bassim, C.P. . .	A. O. Hume.
37 $\frac{1}{4}$	4 $\frac{1}{4}$	16 $\frac{7}{8}$	4+5	?	Sir Victor Brooke's Collection.
36 $\frac{3}{4}$	4	20 $\frac{3}{4}$	4+4	Central Provinces .	J. A. McKee.
36 $\frac{1}{2}$	4 $\frac{1}{2}$	25	4+3	Berar	C. H. Seely.
-36 $\frac{1}{2}$	4 $\frac{1}{2}$	15 $\frac{5}{8}$	4+3	Nepal	A. E. Leatham.
-36 $\frac{1}{2}$	5 $\frac{1}{4}$	19 $\frac{3}{4}$	3+3	Central Provinces .	Capt. M. McNeill.
36 $\frac{1}{2}$	...	16 $\frac{3}{4}$	4+4	Do. . . .	Major J. H. Gwynne.
36	4 $\frac{1}{4}$	25 $\frac{1}{4}$	3+4	?	British Museum.
-36	5	15	4+3	Mysore	Major G. H. Evans.
36	4 $\frac{5}{8}$	21	4+3	?	Major James Grant.
-36	4 $\frac{3}{4}$	26	4+4	Sangor, C. P. . .	Lieut.-Col. R. W. Mapleton.
35 $\frac{7}{8}$	3 $\frac{1}{8}$	19 $\frac{1}{2}$	3+3	Nepal	Dr. Albert von Stephani.
35 $\frac{3}{4}$	4	19 $\frac{3}{4}$	3+3	Central Provinces .	Major G. T. M. Bridges.
35 $\frac{1}{2}$	4 $\frac{1}{4}$	18 $\frac{1}{8}$	4+4	?	Sir Edmund G. Loder, Bart.
35 $\frac{1}{2}$	4	12 $\frac{1}{4}$	5+5	?	G. W. Hatch.
-31 $\frac{1}{2}$	3 $\frac{3}{4}$	17 $\frac{1}{2}$	3+3	Ceylon	Count Scheibler.
31 $\frac{1}{2}$	3	10 $\frac{1}{2}$	3+3	Do. . . .	A. R. Hay.
30 $\frac{1}{2}$	3 $\frac{1}{2}$	10 $\frac{1}{4}$	3+3	Do. . . .	Capt. F. H. Pym.

- Owner's measurements.



Head of Male Hog-Deer.

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, and the nasal bones are not expanded superiorly, while 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 hinder tine of the terminal fork the shorter. Height at shoulder from about 25 to 29 inches. Weight about 90 to 100 lbs. Apparently the largest pair of antlers known belonged to a specimen shot by Mr. A. O. Hume in the Ganges Khadir, near Meerut; these measured 20 inches along the beam inside, and had a mid-beam girth of 3.5, but their outside measurement is unknown.

Distribution.—India, throughout the Indo-Gangetic plain from Sind and the Punjab to Assam, thence through Sylhet to Burma and Tenasserim.

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 . . .	Capt. G. H. Evans.
-21 $\frac{3}{4}$	3 $\frac{1}{2}$	7 $\frac{1}{4}$	Do. . . .	Do.
-21 $\frac{1}{4}$	3 $\frac{3}{4}$	22 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
-21	3 $\frac{1}{2}$	18 $\frac{3}{4}$	Burma . . .	Capt. G. H. Evans.
-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 $\frac{1}{2}$	3 $\frac{1}{4}$	12 $\frac{1}{2}$	Burma . . .	Major G. H. Evans.
-20 $\frac{3}{8}$	3 $\frac{1}{2}$	...	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 $\frac{1}{2}$	N.W. Provinces .	J. Nugent.
-20	...	...	Burma . . .	Indian Museum (Capt. R. C. Beavan).
-19 $\frac{5}{8}$	3 $\frac{1}{8}$	16	Meerut, N.W.P. .	Major W. Q. Winwood.
19 $\frac{1}{2}$	3 $\frac{1}{2}$	13 $\frac{5}{8}$	Dudla Swamp, N.W. Provinces	Capt. W. E. Stobart.
-19 $\frac{1}{2}$	3 $\frac{3}{8}$	...	Nepal . . .	Bombay Natural History Society.
-19 $\frac{3}{8}$	...	...	Ganges Khadir .	Major H. S. King.
19 $\frac{1}{4}$	3 $\frac{1}{8}$	9 $\frac{1}{2}$	Do. . . .	A. O. Hume.
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	4 $\frac{1}{4}$	51 $\frac{1}{16}$	Upper Burma .	The late C. W. A. Bruce.
-18 $\frac{3}{8}$	41 $\frac{7}{16}$	15	Do. . . .	Do.
¹ -18	6 $\frac{1}{2}$	19	Ganges Khadir .	Gen. Sir R. Pole-Carew.

- Owner's measurements.

¹ Ten points.

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 $\frac{1}{8}$	10 $\frac{7}{8}$	10 $\frac{1}{2}$	3 + 3	British Museum.



Head of Swamp-Deer. From a specimen in the possession of Mr. H. C. V. Hunter.

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

This species belongs to the Rucervine group, in which the antlers resemble those of the Rusine and allied sections in the absence of the bez and trez tines, but have the beam regularly forked, and each branch again dividing, so that there are at least four tines. There is

no gland on the hind-leg, or only a vestige thereof. 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



Head of Swamp-Deer Stag, from the Central Provinces, with antlers approximating the Thamin type.

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

of which is usually simply forked, but sometimes divided in a 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.

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	28¾	33½	6+6	Do.	J. A. McKee.
-38	...	43	...	6+6	Do.	J. D. Inverarity.
-38	...	...	...	6+6	Do.	Capt. B. H. Boucher.
-37½	...	...	...	6+6	Do.	Lieut.-Col. H. G. C. Swayne.
37¾	5¼	23¾	28½	7+6	?	Sir Edmund G. Loder, Bart.
36½	5	...	20	23	Mavella District	Measured by Lieut.-Col. A. E. Ward.
36	5	29¾	33¾	6+5	Nepal	British Museum (B. H. Hodgson).
36	4½	47	47	6+6	Central Provinces	Major C. B. Wood.
-36	...	29	...	6+6	Nepal	J. D. Inverarity.
-36	5¼	32½	...	7+7	?	Major W. Anstruther Gray.
-35½	...	...	...	...	Chutia Nagpur	Indian Museum.
-35½	6	29½	...	7+6	Kheri District	Major A. Wilson.
35¾	4¾	27	29¾	...	?	Sir Victor Brooke's Collection.
35¼	5¾	22¼	...	7+6	Nepal	H. C. V. Hunter.
35	4¾	27½	30½	5+5	Terai	Capt. E. B. Cook.
35	5½	31½	34¼	8+6	Central Provinces	Major R. Baker-Carr.
35	5	29¼	32½	6+6	Do.	British Museum.

- Owner's measurements.



Antlers of Schomburgk's Deer. From a specimen in the British Museum.

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

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

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 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.	Owner.
32 $\frac{1}{2}$	5 $\frac{1}{2}$	...	...	12 + 11	Sir Edmund G. Loder, Bart.
30 $\frac{1}{2}$	5	15 $\frac{5}{8}$	33	10 + 10	British Museum.
29 $\frac{3}{4}$	4 $\frac{3}{4}$	28 $\frac{3}{8}$	31 $\frac{5}{8}$	10 + 11	Do.
29 $\frac{1}{2}$	6	19 $\frac{1}{2}$	27	6 + 7	J. Carr Saunders.
28 $\frac{1}{2}$	5 $\frac{1}{4}$	11	29 $\frac{3}{8}$	11 + 9	Sir Victor Brooke's Collection.
28'5	5'25	9'5	28'5	10 + 9	Indian Museum.
20 $\frac{1}{4}$	4	17 $\frac{1}{4}$	20	6 + 6	Hon. Walter Rothschild.

- Owner's measurements.



Skull and Horns of Thamin. From a Burmese specimen.

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 86.

Length on outside curve, not including brow-tine.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
42	5	29	24	3+2	Burma . .	A. H. Collins.
-41	5½	30	36	5+7	Do. . .	Major G. H. Evans.
41	5½	27½	36	5+5	Upper Burma .	Col. O. E. P. Lloyd.
40½	5	30¼	36¾	6+5	?	C. B. Smales.
40	5½	21¾	28	5+5	Upper Burma .	Lieut.-Col. H. D'U. Keary.
-39¾	5	25½	35½	7+6	Do. . .	S. E. F. Jenkins.
39½	5	20¼	30½	6+6	Burma . . .	Col. J. W. A. Morgan.
¹ 39½	5	31¾	36¾	20	Siam . . .	Sir Edmund G. Loder, Bart.
-39½	5	29¾	37	12	Burma . . .	Capt. E. W. M. Purvis.
-39½	...	21½	33	...	Do. . .	Lieut.-Col. H. de H. Haig.
-39	7½	22½	29	10+10	Manipur . .	Major H. S. Wood.
-39	5	41	...	5+5	Lower Burma .	W. O. Hannyngton.
38½	6½	25½	30¾	16+19	?	British Museum.
38¼	6½	24	30¼	6+5	Manipur . .	A. O. Hume.
-38	...	...	28	18	Burma . . .	Capt. G. E. Sharp.
38	4½	29¼	36¼	5+5	Pegu . . .	G. R. Radmore.
38	4½	20½	32	5+4	Burma . . .	H. F. Hall.
-37½	5	15¾	26	5+5	Do. . .	H. A. Kelso.
37	5	23¼	31½	4+4	Do. . .	Major C. S. Cumberland.
37	6	...	37¼	...	Do. . .	Capt. J. A. F. Field.
36¾	4¾	16	27	4+4	Do. . .	L. E. Hopkins.
36½	4½	22¾	29½	5+4	Do. . .	H. Twyford.
-36½	5½	22½	28½	4+4	Sanaing . .	O. F. Wheeler-Cuffe.
36	4½	23	31	10+9	Burma . . .	Capt. H. W. Marsden.
36	5	...]	...	4+4	?	Duke of Bedford.
36	5	31¾	37	6+4	Burma . . .	Sir Robert Harvey, Bart.
35½	4½	22¼	31¼	6+6	Kyaikto, Lower Burma	J. W. Clough.
34½	4½	34	35½	4+4	Upper Burma	R. Gordon Smith.
34½	5	24	32¼	6+6	Burma . . .	Hon. Walter Rothschild.
34	5¾	23½	29¾	10+10	Do. . .	J. Carr Saunders.
34	5	42	39¾	8+7	Do. . .	Duke of Bedford.

- Owner's measurements.

¹ Measured on front of antler from highest tip to tip of frontal tine 5½ inches.

RECORDS OF BIG GAME

Extreme length of right antler round the out- side curve, high- est point, to tip of brow-tine.	Circum- ference.	Tip to Tip.	Widest span.	Number of Points.	Locality.	Owner.
-56 $\frac{1}{4}$	5 $\frac{5}{8}$	28	37	13	Burma . . .	W. F. Loftus-Tottenham.
-55 $\frac{1}{4}$	4 $\frac{1}{2}$	34 $\frac{1}{2}$	42 $\frac{1}{4}$	12	Do. . .	Do.
-55	7	28 $\frac{1}{2}$	38 $\frac{1}{2}$	12	Do. . .	Major G. H. Evans.
-55	5 $\frac{3}{4}$	30	37	15	Do. . .	Do.
-55	5	...	42	13	Do. . .	Do.

- Owner's measurements.



Frontlet 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 those included in *Cervus*. 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 are spotted, but the adults uniformly coloured. In the common muntjac, which is one of the reddish-coloured species, and whose range extends from Ceylon and India through Burma to China, the Malay Peninsula, Sumatra, and Java, the height at the shoulder varies from 20 to 22 inches. The Chinese muntjac (*C. reevesi*), from Southern China and Formosa, is a much smaller species, also reddish in colour; but in the rare Tenasserim muntjac (*C. feæ*), and the larger but equally scarce hairy-fronted muntjac (*C. crinifrons*) of Eastern China, the general hue of the body is dark purplish sepia-brown, with white on the buttocks and under surface of the tail. The average height of the common species at the shoulder is about 26 inches, and weight about 28 lbs.; a female stands about 23 inches and weighs about 32 lbs.

Several local races of the common 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 may be known as *C. m. tamulicus*, and the Siamese as *C. m. curvostylis*. The antlers of the Burmese race are very large and massive.

The earlier name *Muntjacus* is now sometimes 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 $\frac{5}{8}$	3 $\frac{3}{4}$	6 $\frac{1}{4}$	Java . . .	Dr. Albert von Stephani.
-8 $\frac{3}{8}$	4 $\frac{1}{4}$	4 $\frac{5}{8}$	India . . .	W. H. Wilson.
¹ 7 $\frac{7}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	Lombok . . .	Hon. Walter Rothschild.
-7 $\frac{1}{2}$	...	...	Near Mussuri . . .	Lieut.-Col. A. E. Ward.
² 7 $\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{7}{8}$	Lombok . . .	Hon. Walter Rothschild.
-6 $\frac{7}{8}$	4 $\frac{1}{4}$	2 $\frac{3}{4}$	Lushai . . .	Major A. Wilson.
-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 . . .	Lieut.-Col. B. W. C. Deeble.
6 $\frac{5}{8}$	2 $\frac{1}{4}$	3 $\frac{1}{8}$	Java . . .	J. C. Van Son.
-6 $\frac{1}{2}$	...	...	Do.	H. 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	3 $\frac{3}{8}$	?	A. O. Hume.
-6 $\frac{1}{2}$	2 $\frac{1}{2}$	3 $\frac{1}{8}$	Namba Forest, Assam	Major H. S. Wood.
-6 $\frac{1}{2}$	2 $\frac{3}{4}$	...	North of Mussuri . .	Capt. Harry V. Brooke.
-6	2 $\frac{5}{8}$	4 $\frac{3}{4}$	Taroy, Burma . . .	Major G. H. Evans.

¹ Determination provisional.

² Weight 37 lbs.

TIBETAN MUNTJAC (*Cervulus lachrymans*).

Nearly allied to the last, but smaller.

Length on outside curve of longest antler.	Circumference.	Tip to Tip.	Locality.	Owner.
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.



Head of Hairy-fronted Muntjac.

HAIRY-FRONTED MUNTJAC (*Cervulus crinifrons*).

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

TENASSERIM MUNTJAC (*Cervulus feæ*).

Antlers about two inches long.

The ROE or ROEBUCK (*Capreolus caprea*).

(Also known as *Capreolus capreolus*.)

Roe may be recognised by the rudimentary tail, and the medium-sized antlers rising close together and almost vertically from the head, without a 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

disk. The range embraces the greater part of Europe as far as the Caucasus, and probably Asia Minor.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13	4	14½	Germany	Viscount Powerscourt.
13	4	14½	Do.	Do.
13	3½	10¼	Do.	Do.
-13	6½	8½	Do.	H. R. H. the Duke of Saxe-Coburg and Gotha.
-13	7	10	Do.	Do.
-13	6½	8	Do.	Do.
12¾	3	8½	Do.	Viscount Powerscourt.
12½	4	9½	Do.	Do.
12¼	4¾	9	Servia	Do.
12⅔	3⅔	4½	Austria	Capt. John Marriott.
¹ -12⅔	...	...	Perthshire	R. Moncrieff.
-12'11	6'12	5'4	Hungary	Count Wenkheim.
11⅝	...	6	Monymusk, N.B.	Sir Arthur Grant, Bart.
² 11½	...	...	Orton, Speyside	Sir G. Macpherson Grant, Bart.
11½	3	8¾	Germany	Viscount Powerscourt.
11¼	6	6	Perth	J. G. Millais.
11¼	4½	8¾	Servia	Viscount Powerscourt.
-11¼	4¾	...	Scotland	Duke of Bedford.
-11⅔	4½	...	(Single antler dug up)	J. G. Millais.
11	7¼	...	Ross-shire	H. M. Warrand.
-11	...	7¼	Aberdeenshire	Col. Gordon Cumming.
11	5⅔	7½	Ross-shire	H. M. Warrand.
11	³ 8	8¾	Germany	Viscount Powerscourt.
11	7⅔	6⅔	Sligo, Ireland	Sir Henry Gore Booth, Bart.
11	3½	6½	Ballindalloch	G. B. Macpherson Grant.
-10½	3½	3½	Bohemia	H. S. H. Prince Alexander of Thurn and Taxis.
10½	...	...	Beaufort, Ross-shire	J. G. Millais.

- Owner's measurements.

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

³ Abnormal (Peraque).

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
10½	6½	6	Ballindalloch	Sir G. Macpherson Grant, Bart.
10½	3½	5¼	Inverness	C. Macpherson Grant.
10½	4	6¼	Austria	H.R.H. le Duc d'Orléans.
10	2¼	5¼	Findrac	E. C. P. Hull.
10	3¼	6	?	W. H. Wilson.
9¾	2½	4½	Bohemia	Prince Alexander of Thurn and Taxis.
9¾	5	5	Dorset	J. E. Harting.
9¾	8½	...	Sligo, Ireland	Sir Henry Gore Booth.
9¾	3¼	5	Spain	Abel Chapman.
8¾	3	6¼	Do. . . .	Do.
8½	3	4½	France	British Museum.

- Owner's measurements.



Antlers of Siberian Roe. From a photo. lent by Mr. Carl Hagenbeck.

SIBERIAN ROE (*Capreolus pygargus*).

Larger than the last, the height at the shoulder varying from 28 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.

Mr. St. George Littledale states that the specimens he observed barked like a barking-deer.

Distribution.^o—From the Altai and mountains of Turkestan to Eastern Siberia, and probably the Caspian provinces of Persia.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
18 $\frac{9}{16}$	16 $\frac{3}{4}$	...	?	Carl Hagenbeck.
17 $\frac{3}{4}$	4	12 $\frac{1}{2}$	Thian Shan	Hon. Walter Rothschild.
16	4 $\frac{1}{4}$	16	Do.	R. F. Glyn.

^o Owner's measurements.

¹ Circumference of burr.

SIBERIAN ROE

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16	4½	12	?	Viscount Powerscourt.
15¾	4½	13½	Thian Shan . . .	J. V. Phelps.
15½	4¼	8½	?	Viscount Powerscourt.
15½	5	11¾	Thian Shan . . .	P. B. Vander-Byl.
15½	5½	8	Siberia . . .	Sir Edmund G. Loder, Bart.
15¼	4¾	12¼	Do. . .	T. D. M. Cardeza.
15¼	3½	11	Do. . .	Major W. Anstruther Gray.
15¼	4½	11	Thian Shan . . .	Lord Osborne Beauclerk.
15	4	10½	Do. . .	Prince Colloredo Mannsfeld.
15	3¾	15	Altai . . .	Edinburgh Museum.
14½	3¾	15½	Do. . .	J. Hamilton Leigh.
14½	4	15	?	Duke of Bedford.
14¼	3¾	8¾	Tekkes . . .	R. Hayne.
14¼	3¼	...	Siberia . . .	Paris Museum.
14¼	4	8	Do. . .	Sir Edmund G. Loder, Bart.
14	3⅞	15¾	Thian Shan . . .	P. Church.
13¾	2¾	13⅝	Semirechensk Altai . . .	H. J. Elwes.
13¾	3	6	Asia? . . .	British Museum.
13¾	3¾	11½	?	H. R. H. le Duc d'Orléans.
13½	4	9	Upper Yenisei Valley . . .	H. J. Elwes.
13½	3¾	8¾	Semirechensk Altai . . .	Do.
13½	3¾	9⅞	Upper Yenisei Valley . . .	Do.
13½	3½	11¼	S. Siberia . . .	W. A. L. Fletcher.
13⅜	3⅞	9½	Siberia . . .	Paris Museum.

- Owner's measurements.



Skull and Antlers of Siberian Roe shot by Mr. St. George Littledale.



Antlers of Père David's Milu Deer. From specimens at Woburn Abbey.

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

This remarkable deer differs from all the preceding, except the elk and roes, by the absence of a brow-tine to the antlers, which are large and branching, the beam forking at a comparatively short distance above the burr, and 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. In the adult the colour is uniformly tawny, but spotted in the young. Height at shoulder about 3 feet 9 inches. In captivity, at any rate, the antlers are shed twice a year.

Distribution.—Northern China or (?) Kashgaria; unknown in the wild state, and apparently now represented only by specimens in Europe, of which the great majority are at Woburn Abbey.

RECORDS OF BIG GAME

Length on out- side curve.	Circum- ference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
32 $\frac{7}{8}$	6 $\frac{3}{8}$	13 $\frac{5}{8}$	18 $\frac{1}{2}$	8+8	Near Pekin	Sir Edmund G. Loder, Bart.
¹ 32	7 $\frac{1}{2}$	...	...	10+8	?	Duke of Bedford.
-31	6	...	...	3+3	?	W. T. Hornaday.
-30 $\frac{3}{4}$	5	35 $\frac{1}{16}$	35 $\frac{1}{16}$	11+10	Imperial Park, Pekin	Paris Museum (Type Specimen, Père David).
29 $\frac{1}{2}$	5 $\frac{1}{4}$	...	...	5+5	?	Duke of Bedford.
-29 $\frac{1}{4}$	6 $\frac{3}{8}$	29	...	3+2	?	Maj. W. Anstruther Gray.
28 $\frac{1}{4}$	5 $\frac{3}{8}$	26 $\frac{1}{2}$	...	3+3	?	Hon. Walter Rothschild.
28 $\frac{1}{4}$	6 $\frac{1}{2}$	...	...	8+8	?	Duke of Bedford.
27	5 $\frac{7}{8}$	20 $\frac{1}{4}$	...	6+5	?	British Museum.
² 25	5	...	...	6+4	Bred in England	Duke of Bedford.
22	4 $\frac{5}{8}$	...	...	4+3	Do.	Do.

- Owner's measurements.

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

² Back point of this head measured 23 inches from beam of antler.



Antlers of Virginian White-tailed Deer. From a specimen in the British Museum.

WHITE-TAILED DEER (*Mazama* [*Dorcelaphus*] *americana*).

(*Odocoileus virginianus* of American naturalists.)

With the exception of the wapiti, all the deer of America are distinguished from those of the Old World, save the elk, roe, and milu deer, by the absence of a brow-tine to the antlers, which are either regularly forked or spike-like, and quite different from those of either the roe or milu deer. In the white-tailed deer they are large and complex, with a long sub-basal snag, and the front prong of the main fork developed at the expense of the hinder, 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, it may be observed, is the oldest name for the American deer, and must be employed if they are all included in one genus. If they are split up, *Mazama* is the title for the brockets, while the white-tail and its allies may be called *Dorcelaphus*, or, as most American writers prefer, *Odocoileus*.

Length on outside curve.	Circumference.	Tip to lip.	Widest inside.	Points.	Locality.	Owner.
27 $\frac{5}{8}$	5 $\frac{3}{8}$	Single antler	...	16	N. America . . .	British Museum.
27 $\frac{1}{8}$	4 $\frac{7}{8}$	14 $\frac{1}{4}$	19	6+6	Do. . . .	Do.
-27 $\frac{1}{4}$	...	18 $\frac{3}{8}$	...	19+19	Missouri . . .	Berlin Museum.
26 $\frac{3}{4}$	4 $\frac{3}{4}$	9 $\frac{1}{8}$	20	20	N. America . . .	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 $\frac{1}{8}$	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 $\frac{3}{8}$	4 $\frac{5}{8}$	10 $\frac{3}{8}$	19	15+13	Texas . . .	Capt. F. Cookson.
25 $\frac{1}{4}$	4 $\frac{3}{4}$	12 $\frac{1}{4}$	17 $\frac{1}{8}$	11+9	N. America . . .	British Museum.
25	5	6 $\frac{3}{8}$	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.
24 $\frac{1}{2}$	4 $\frac{1}{8}$	11 $\frac{1}{8}$	19 $\frac{1}{2}$	6+6	?	British Museum.
-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 . . .	James J. Harrison.
-23 $\frac{1}{2}$	4 $\frac{5}{8}$	4 $\frac{3}{8}$	14 $\frac{1}{2}$	7+10	Nebraska . . .	Dr. Albert von Stephani.
23	5	5	16	6+6	B. Columbia . . .	J. Turner-Turner.
-22 $\frac{1}{2}$	4	¹ 15 $\frac{3}{4}$	...	12	Medora, N.D. . .	President Roosevelt.
21 $\frac{1}{2}$	3 $\frac{3}{4}$	3 $\frac{1}{4}$	13 $\frac{1}{2}$	4+4	New York State . .	Sir Edmund G. Loder, Bart.
21	4	12	17	4+4	Wyoming . . .	F. C. Selous.
19 $\frac{1}{2}$	3 $\frac{1}{2}$	12 $\frac{1}{2}$	15 $\frac{1}{2}$	5+5	B. Columbia . . .	T. P. Kempson.
17 $\frac{3}{4}$	4 $\frac{3}{4}$	...	...	27+25	Do. . . .	Earl of Lonsdale.
¹ 9 12 $\frac{1}{4}$	4	8	...	3+3	Do. . . .	J. Turner-Turner.

- Owner's measurements.

¹ Spread.



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

MEXICAN WHITE-TAIL (*Mazama americana mexicana*).

Apparently one of the smaller races of the preceding, the height at the shoulder being about 2 feet 9 inches, and the antlers usually smaller and simpler.

Distribution.—Mexico. The South American specimens entered below may belong to other races.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
14	3½	9	...	...	Mexico . . .	Major W. Anstruther Gray.
13¾	3¾	6¾	11¾	3+3	Do.	British Museum.
13¼	3¾	7	11¼	4+4	Venezuela . . .	Hon. Walter Rothschild.
9½	3¾	8	...	3+3	Ecuador . . .	Do.
8¼	3½	6	6½	3+3	Mexico . . .	Sir Edmund G. Loder, Bart.
8¼	2½	4¾	6½	3+4	Do.	Sir Victor Brooke's Collection.

— Owner's measurements.



Head of Mule-Deer. From a specimen in the possession of Mr. E. S. Cameron.

MULE-DEER (*Mazama* [*Dorcelaphus*] *hemionus*).

(*Odocoileus hemionus* of American naturalists.)

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 very large and heavy; tail short and small, with a black tip. Gland-tufts on hock and cannon-bone

coloured like the leg; the latter of these elongated and situated in the upper half of the cannon-bone. General colour of upper parts reddish tawny in summer, brownish or rufous speckled grey in winter, with a brown horse-shoe mark on the forehead. Height at the



Abnormal head of Mule-Deer from British Columbia, in the possession of Mr. J. Turner-Turner.

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 peninsulæ*) is one of the smallest.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
33 $\frac{3}{4}$	...	...	36 $\frac{1}{4}$	5+4	Colorado . . .	F. Hart.
32	6	26	...	21+19	Wyoming . . .	C. R. F. Lutwidge.
30 $\frac{5}{8}$	5 $\frac{1}{2}$	18 $\frac{1}{2}$	24 $\frac{1}{2}$	5+5	?	W. Moat.
30	5 $\frac{3}{4}$	...	41	17	White River, Colorado . . .	H. A. James.
29	6 $\frac{1}{2}$	29 $\frac{1}{2}$	...	8+6	Montana . . .	E. S. Cameron. (See illustration).
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	4 $\frac{1}{4}$	22 $\frac{1}{2}$	24 $\frac{1}{4}$	6+6	Wyoming . . .	H. A. C. Darley.
27 $\frac{1}{2}$	5 $\frac{3}{4}$	14 $\frac{3}{8}$	24 $\frac{1}{2}$	6+5	British Columbia . . .	Hon. Walter Rothschild.
27 $\frac{1}{2}$	5 $\frac{3}{8}$	20 $\frac{3}{8}$	29 $\frac{3}{4}$	8+6	Idaho . . .	W. T. Hornaday.
27 $\frac{1}{4}$	5	14 $\frac{1}{2}$	24 $\frac{1}{4}$	6+5	British Columbia . . .	C. W. Janson.
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 $\frac{1}{4}$	5+5	British Columbia . . .	D. H. Crake.
26 $\frac{7}{8}$	5	...	...	28	North Dakota . . .	President Roosevelt.
26 $\frac{3}{4}$	4 $\frac{1}{4}$	...	...	5+5	Wyoming . . .	Capt. M. M'Neill.
26 $\frac{3}{4}$	4 $\frac{3}{4}$	19 $\frac{5}{8}$	20 $\frac{1}{8}$	5+5	Do. . . .	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 . . .	Hon. F. Thellusson.
26 $\frac{1}{8}$	4 $\frac{1}{8}$	15 $\frac{7}{8}$	22 $\frac{7}{8}$	6+6	Do. . . .	Capt. F. Cookson.
26	4 $\frac{1}{2}$	20	21 $\frac{3}{4}$	7+5	Do. . . .	The MacLaine of Lochbuie.
26	5	15 $\frac{1}{4}$	19 $\frac{1}{2}$	4+4	British Columbia . . .	J. V. Colby.
25 $\frac{1}{2}$	5 $\frac{1}{2}$	...	21 $\frac{1}{2}$	8	Do. . . .	Sir Peter Walker, Bart.
25 $\frac{1}{2}$	4 $\frac{1}{4}$	27	29	5+5	Wyoming . . .	Major G. J. Fitzgerald.
25 $\frac{3}{8}$	4 $\frac{1}{8}$	19	20	5+5	Do. . . .	A. H. Pollen.
25	5 $\frac{1}{4}$	27 $\frac{3}{8}$	27 $\frac{3}{8}$	16+13	Montana . . .	Earl of Lonsdale.
25	5	20 $\frac{3}{4}$	24	5+5	Wyoming . . .	J. L. Scarlett.
25	5	10	16 $\frac{3}{4}$	5+4	Do. . . .	F. C. Selous.
24 $\frac{7}{8}$	5	20 $\frac{1}{8}$	...	6+6	Do. . . .	Dr. Albert von Stephani.

- Owner's measurements.

1 Albino.

Length on out-side curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
24½	5½	...	25	10	Wyoming . . .	T. W. H. Clarke.
24½	5	13¾	...	3+3	British Columbia . .	H. S. Beall.
24	4½	22¾	24	10	?	T. P. A. Holford.
24	5½	24½	24½	5+5	British Columbia . .	W. Neilson.
24	4½	19½	25½	5+5	Wyoming . . .	Major J. McCall Maxwell.
24	4½	15¾	19½	5+5	Do. . . .	Count E. Hoyos.

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

(*Odocoileus columbianus* of American naturalists.)

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 white.

Distribution.—Western North America, from Fort George, British Columbia, to California.

Length on out-side curve.	Circumference.	Tip to Tip.	Widest inside.	Points.	Locality.	Owner.
29½	...	...	...	...	Pacific Slope . . .	F. Hart.
27¾	6	15¼	19¼	9+6	British Columbia . .	G. Wrey.
22	4½	...	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.
19¼	4½	14	16½	3+3	S. California . . .	Sir Victor Brooke's Collection.
16	3¾	8½	14¼	5+3	British Columbia . .	W. T. Hornaday.

— Owner's measurements.

¹ Outside.



Frontlet and Antlers of Marsh-Deer.

MARSH-DEER (*Mazama* [*Blastoceros*] *dichotoma*).
(*Blastoceros paludosus* of some naturalists.)

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 $\frac{1}{8}$	5	22 $\frac{1}{4}$	...	6+7	Paraguay	Dr. Albert von Stephani.
25	5 $\frac{1}{2}$	18 $\frac{3}{4}$	21 $\frac{1}{4}$	5+4	Do.	Hon. Walter Rothschild.
24 $\frac{1}{2}$	5	16	18	5+5	Do.	Admiral Sir William Kennedy.
23 $\frac{1}{2}$	6 $\frac{1}{8}$	26	25	5+5	Do.	Sir Edmund G. Loder, Bart.
23 $\frac{3}{4}$	5 $\frac{1}{8}$	15 $\frac{3}{4}$	16 $\frac{1}{4}$	5+4	Do.	British Museum.
23 $\frac{1}{4}$	6	...	19 $\frac{1}{2}$	12	Do.	G. R. Stuart.

— Owner's measurements.

MARSH-DEER

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 $\frac{3}{4}$	6 $\frac{1}{4}$	20	20 $\frac{1}{2}$	5+5	Brazil	Sir Victor Brooke's Collection.
22 $\frac{1}{2}$	7 $\frac{1}{2}$	...	15 $\frac{1}{4}$	6+6	Argentina	Kenyon Slaney.
22 $\frac{3}{4}$	5 $\frac{1}{2}$	25	...	28	Do.	A. Vans-Agnew.
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.II. Le Duc de Montpensier.
21 $\frac{1}{2}$	5	12 $\frac{3}{4}$	16	5+5	Do.	Admiral Sir William Kennedy.
21 $\frac{1}{8}$	...	19 $\frac{3}{4}$	...	6+5	Entre Rios	T. Taylor.
20	5 $\frac{1}{2}$	20	...	4+4	Paraguay	Count Henry Coudenhove.
20	6 $\frac{3}{4}$	19 $\frac{1}{4}$	18 $\frac{3}{4}$	4+4	Uruguay	Surgeon J. Dowson, R.N.
19 $\frac{3}{4}$	6	20 $\frac{1}{2}$	20	3+3	Paraguay	R. A. Cooper.

- Owner's measurements.



Side view of Antlers of Marsh-Deer. From a specimen in the British Museum.

PAMPAS DEER (*Mazama* [*Blastoceros*] *bezoartica*).(*Blastoceros campestris* of some zoologists.)

A small deer nearly allied to the last, but with the front prong of the antlers simple, and the hinder one divided. A whorl in the hair on the middle of the back and another at the base of the neck, so that the fur 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, 2 feet 6 inches.

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

Length on outside curve.	Circumference.	Tip to Tip.	Points.	Locality.	Owner.
14 $\frac{5}{8}$	2 $\frac{3}{8}$	13 $\frac{1}{4}$	3+3	Argentina	British Museum.
14 $\frac{1}{2}$	3	10 $\frac{3}{4}$	3+3	Do.	E. M. Crosfield.
14 $\frac{1}{4}$	3 $\frac{1}{4}$	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 $\frac{3}{4}$	3+3	?	W. Livingstone Learmonth.
-13	2 $\frac{3}{4}$	11	3+3	?	J. Whitaker.
-12 $\frac{1}{2}$	3 $\frac{1}{2}$	7	12+11	Uruguay	J. Burnett.
12 $\frac{1}{2}$	2 $\frac{1}{4}$	8 $\frac{1}{2}$	3+3	?	Sir Victor Brooke's Collection.
11 $\frac{1}{4}$	3 $\frac{1}{2}$	13 $\frac{1}{4}$	3+3	?	British Museum (Charles Darwin).
10 $\frac{3}{8}$	3	8 $\frac{1}{8}$	3+3	Patagonia	Dr. Albert von Stephani.
10	2 $\frac{1}{4}$	12 $\frac{1}{8}$	3+3	Argentina	Count Henry Coudenhove.
7 $\frac{1}{2}$	2 $\frac{1}{4}$	5 $\frac{1}{2}$	3+3	?	Duke of Bedford.

- Owner's measurements.

PERUVIAN GUEMAL (*Mazama* [*Xenelaphus*] *antisiensis*).(*Xenelaphus*, or *Hippocamelus*, *antisiensis* of some naturalists.)

Together with the closely allied Chilian guemal (*M. bisulca*), this species constitutes a group 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 Peru to Northern Chili.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{3}{4}$	3 $\frac{7}{8}$	9 $\frac{1}{2}$	Patagonia	Hesketh Prichard.
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).
9 $\frac{3}{8}$	2 $\frac{1}{2}$	8 $\frac{1}{8}$	Ceuchepate, Peru (11,000 ft.)	Do.
4 $\frac{5}{8}$	1 $\frac{7}{8}$	4 $\frac{1}{2}$	Chili	W. T. Hornaday.

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 the radiation of the hair of the face from two whorls, which causes that on the nose to be directed downwards. 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.
3	2 $\frac{1}{4}$	2	Do.	Dr. Albert von Stephani.

— Owner's measurements.



Head of Musk-Deer.

MUSK-DEER (*Moschus moschiferus*).

From all living deer except the Chinese water-deer this species is distinguished by the absence of antlers, whose function as weapons is discharged in the male by long upper tusks. The tail is rudimentary, the fur coarse and brittle, and 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, and Amurland.

Length of Tusk on outside curve.	Locality.	Owner.
4	Kashmir	Major H. C. Tytler.
-3½	Himalaya	Major W. Anstruther Gray.
3¾	Gurhwal	G. W. Burton.
-3¼	Do.	Dr. Albert von Stephani.
3	Upper Kumaon	Capt. K. Channer.
3	Gurhwal	A. O. Hume.
3	Amurland	British Museum.
2¾	Himalaya	Rowland Ward.
2½	Kashmir	Sir Edmund G. Loder, Bart.
2½	Do.	Major A. Nugent.

- Owner's measurements.



Skull of Nubian Giraffe. From De Winton, *Proc. Zool. Soc.* 1897. Shot by A. H. Neumann.

GIRAFFE (*Giraffa camelopardalis*).

Ihuhla of the Swazis.

Ngabe of the Masawaras.

Indhlulamiti of the Zulus.

Giri or *Halgiri* of the Somalis.

Tuthla of the Basutos.

Kameel of the Boers.

Luomba ningo of the Chilala.

Nyama marakiti of the Asenga.

Zaraff of the Sudanese.

The long limbs, and neck, the peculiarly formed head, and the dappled 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 *Giraffidae*. One of the most marked peculiarities of the giraffes is to be found in the horns. The largest pair arise 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 the lateral hoofs are wanting. In the outermost pair of lower front teeth the crown, as in the okapi, is double, or bilobed.

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 Lado *G. c. cottoni* is allied. The Nigerian *G. c. peralta* is the palest of the group. The



Head of Bull Baringo Giraffe obtained in the Uganda Protectorate by Sir H. Johnston, and now in the British Museum. The development of the hindmost horns is very marked.

Congo *G. c. congoensis* combines the presence of a third horn with fully spotted legs; and this seems to be also the case with the Kilimanjaro *G. c. tippelskirchi*, in which the markings have finely serrated edges 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*.

Northern Races.

Maximum height.	At shoulder.	Locality.	Owner.
ft. ins.	ft. ins.		
♂-17 3	10 11	British East Africa . . .	P. H. G. Powell-Cotton.
♂-17 3	...	Do. . . .	Lady Hindlip.
♂-16 0	...	Central East Africa . . .	A. H. Neumann.
♀-13 10	8 9½	British East Africa . . .	British Museum (P. H.'G. Powell-Cotton).

Southern Races.

Maximum height.	At shoulder.	Locality.	Owner.
ft. ins.	ft. ins.		
♂-18 7	...	South-East Africa . . .	F. Vaughan Kirby.
♂-18 4	...	Angola	Hon. Walter Rothschild.
♂-18 0	12 0	South Africa	The late Sir W. Cornwallis Harris.
♂-17 6	Average height	South-East Africa . . .	F. Vaughan Kirby.
♂-17 0	...	W. Matabililand . . .	F. C. Selous.
♀-16 10	...	Do. . . .	H. A. Bryden.
♂-16 6	...	N. Kalahari	F. C. Selous.
♀-15 6 to 16 0	Average height	South-East Africa . . .	F. Vaughan Kirby.

- Owner's measurements.

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. In old bulls the five horns are well developed, although the hinder pair are somewhat less conspicuous than in the Baringo race of the common species.

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



Head of Male Prong-horn.

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 difference the species represents 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 United States, from British Columbia to Mexico.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
-17½	6½	...	9	N.W. Canada	J. Whitaker.
-17	...	...	20 outside	?	Otho Shaw.
-16	6½	..	...	N. Dakota	President Roosevelt.
15¾	6½	5¾	...	Wyoming.	St. George Littledale.

— Owner's measurements.

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
15 $\frac{3}{4}$	6 $\frac{1}{4}$	8 $\frac{3}{4}$	...	Wyoming	P. B. Vander-Byl.
15 $\frac{3}{4}$	5 $\frac{3}{8}$	...	20 outside	?	Otho Shaw.
15 $\frac{5}{8}$	6	2 $\frac{7}{8}$	...	Teton Mountains	H. Lennard.
15 $\frac{1}{2}$	4 $\frac{1}{2}$	9 $\frac{1}{2}$	...	Wyoming	W. R. Cookson.
15 $\frac{1}{4}$	5 $\frac{3}{4}$	6 $\frac{1}{4}$	...	Do.	Count E. Hoyos.
15 $\frac{1}{8}$	6 $\frac{1}{4}$	7 $\frac{3}{8}$	...	?	Col. Ralph Vivian.
15	5 $\frac{1}{2}$	1	...	Do.	Sutton Timmis.
15	6	...	...	Do.	H. R. H. le Duc D'Orléans.
15	5 $\frac{1}{8}$	5 $\frac{1}{4}$	10 $\frac{1}{4}$	Do.	St. George Littledale.
15	5 $\frac{3}{4}$	7 $\frac{3}{4}$	...	Do.	Isaac Bell.
14 $\frac{7}{8}$	5	5 $\frac{1}{4}$	...	New Mexico	Capt. F. Cookson.
14 $\frac{9}{16}$	5 $\frac{1}{8}$	7 $\frac{9}{16}$	...	Wyoming	H. Holmes Tarn.
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 $\frac{1}{2}$	6	...	9 $\frac{1}{2}$	Laramie Plains, Wyoming	Ford G. Barclay.
14 $\frac{1}{2}$	6 $\frac{5}{8}$	5 $\frac{1}{4}$	...	Wyoming	Lieut.-Col. Hon. W. Coke.
14 $\frac{1}{2}$	6	6	...	Alberta	F. I. Mitchell.
14 $\frac{1}{2}$	5 $\frac{3}{4}$	15 $\frac{5}{8}$	...	Colorado	Rev. Dr. R. J. Nevin.
14 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{3}{4}$	...	Do.	F. Gillett.
14 $\frac{1}{4}$	5 $\frac{3}{8}$	6 $\frac{1}{4}$	10	Wyoming	Count Scheibler.
14 $\frac{1}{4}$	6	2 $\frac{5}{8}$	...	?	Sir Victor Brooke's Collec- tion.
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	Capt. A. J. Carstairs.
14 $\frac{1}{4}$	5 $\frac{3}{4}$	5 $\frac{3}{4}$	...	Do.	Earl of Dartmouth.

- Owner's measurements.



Horns of Bubal Hartebeest. From Mr. Julius Jeppe's specimen.

BUBAL HARTEBEEST (*Bubalis boselaphus*).

This species brings us to the great family of hollow-horned ruminants, or *Bovidae*, in which the horns are in the form of unbranched hollow sheaths, which are not shed in the adult, and are supported on bony cores. The hartebeests are large antelopes with naked muzzles, abnormally long faces, doubly-curved horns, small face-glands, large valvular nostrils (of which the lower lids are covered with short hairs), long, tufted tails, and large lateral hoofs. Both sexes are horned. The present species is the smallest of the group, standing only 43 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.—Northern Africa (interior of Morocco, Algeria, and Tunisia) and Arabia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14½	8½	9½	North Africa	British Museum.
14½	6¾	9¾	?	Col. Ralph Vivian.
13¾	9¼	9¼	Tunisia	Julius Jeppe.
13½	7	5¼	North Africa	British Museum.



Horns of West African Hartebeest. Shot by Major J. W. Carroll.

WEST AFRICAN HARTEBEEST (*Bubalis major*).*Kanki* of the Hausas.

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 said to be of a uniform greyish brown, face deep brown, the fore-legs streaked with dark brown or blackish from the knees downwards, and the tail-tuft black. Height at shoulder about 54 inches.

Distribution.—Gambia, Lower Nigeria, and the interior of the Cameroons.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
26 $\frac{1}{4}$	13 $\frac{1}{2}$	6 $\frac{1}{4}$	Nigeria . . .	Capt. E. E. Williams.
25 $\frac{1}{2}$	11 $\frac{3}{4}$	12 $\frac{1}{2}$	Do.	Capt. P. A. Clive.
25 $\frac{3}{4}$	12 $\frac{3}{4}$	11 $\frac{1}{4}$	Yauri, Hausa States	Major J. W. Carroll. (See illustration.)
25 $\frac{1}{4}$	12 $\frac{1}{4}$	13 $\frac{3}{8}$	Near Borgu . . .	Capt. N. C. Welch.
25	11 $\frac{1}{4}$	10 $\frac{1}{4}$	Benue River . . .	Julius Jeppe.
25	11 $\frac{3}{4}$	8 $\frac{1}{4}$	Gold Coast . . .	Capt. Montray Read.
24 $\frac{1}{2}$	11 $\frac{3}{4}$	8 $\frac{7}{8}$	Nigeria	S. B. B. Dyer.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
24	11½	12	Togoland . . .	Berlin Museum.
24	12	5¾	Nigeria . . .	Dr. W. H. Langley.
24	11½	8¼	Do. . . .	K. V. Elphinstone.
24	12	11	Do. . . .	A. Noel Woods.
24	12¼	6	Do. . . .	S. C. Peck.
24	12¾	8½	Do. . . .	G. F. Lobbs.
24	11	10¾	Do. . . .	Capt. W. D. Wright.
23¾	12½	6¼	Do. . . .	Capt. H. N. Kempthorne.
23½	12	9	Do. . . .	Lieut.-Col. P. S. Wilkinson.
23½	12	11	Do. . . .	F. R. O'Neill.
23½	12	4¼	Ashanti . . .	C. Beddington.
23½	12	13½	N. of Benue River .	W. H. Broun.
23¼	12¾	14	N. Nigeria . . .	Major D. F. MacCarthy Morrogh.
23¼	12½	8½	Nigeria . . .	G. F. Phillips.
23¼	12¾	12½	Lagos	Capt. W. A. Ross.
23	12¼	9¼	Nigerian Sudan .	Hon. Walter Rothschild.
23	11½	9¼	Nigeria . . .	A. A. Smith.
23	12	9½	Do. . . .	Capt. H. A. Porter.
23	12	7	Do. . . .	N. F. Bayne.
22½	10¾	9½	Do. . . .	P. A. Shaw.
22	11¼	10½	Do. . . .	W. Rattray.
21¼	12	12¼	Gambia	H. L. Stephen.
21¼	11	9¾	Do. . . .	Paris Museum.
♀ 20	9¾	6	Lokoja	The late Capt. A. W. M. Brodie.
19¾	9	13¾	Do. . . .	Dr. W. H. Langley.
♀ 19¾	9	6½	Do. . . .	F. H. Barber.
19¾	11¾	6¾	Gambia	H. C. Goddard.
♀ 19¾	8½	4	Jebba, Nigeria .	The late Capt. G. H. F. Abadie.

- Owner's measurements.



Frontlet and Horns of Tora Hartebeest. Shot by Lieut.-Col. Hon. W. Coke.

TORA HARTEBEEST (*Bubalis tora*).

Native name, *Worobo*.

Horn-pedicle of medium length, the horns themselves in the form of an inverted bracket (—). Height at shoulder about 48 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 about 300 lbs.

Distribution.—Abyssinia and south portion of Blue Nile.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22½	9	22¾	Sudan	Carl Hagenbeck.
22	9¾	10	Do.	Capt. J. S. Cavendish.
21	9	19¼	Do.	Lieut.-Col. Hon. W. Coke. (See illustration.)
20¾	9¼	14½	Do.	Hon. Walter Rothschild.
20¾	9½	13¼	Do.	Sir Edmund G. Loder, Bart.
20½	9½	16¾	Do.	Marquis Pizzardi.
20½	10¼	17	Do.	Julius Jeppé.
20¼	9	9½	Do.	Col. A. Colville.
20	10¾	16¾	Do.	Capt. H. H. S. Morant.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20	9 $\frac{5}{8}$	15 $\frac{5}{8}$	Sudan	British Museum.
20	9 $\frac{1}{2}$	14 $\frac{3}{4}$	Lake Zuay, Abyssinia .	Prince de Lucinge.
19 $\frac{3}{4}$	9	16 $\frac{1}{8}$	Dombelas, Abyssinia .	British Museum.
19 $\frac{5}{8}$	10 $\frac{1}{8}$	12 $\frac{5}{8}$	Abyssinia	P. H. G. Powell-Cotton.
19 $\frac{1}{2}$	9 $\frac{3}{8}$	11 $\frac{5}{8}$	Do.	Do.
19 $\frac{1}{2}$	8 $\frac{3}{4}$	17 $\frac{3}{4}$	Sudan	Capt. J. C. Graham.
19 $\frac{1}{4}$	9 $\frac{1}{2}$	11 $\frac{1}{4}$	Blue Nile	G. L. Harrison.
♀ 15 $\frac{3}{8}$	7 $\frac{3}{8}$	7 $\frac{3}{4}$	Abyssinia	P. H. G. Powell-Cotton.
♀ 14 $\frac{1}{2}$	6 $\frac{1}{4}$	5 $\frac{5}{8}$	Sudan	Hon. Walter Rothschild.
♀ 14 $\frac{1}{4}$	6 $\frac{1}{4}$	18	Nubia	Julius Jeppé.



Head of Swayne's Hartbeest. Shot by Lieut.-Col. H. G. C. Swayne.

SIG or SWAYNE'S HARTEBEEST (*Bubalis swaynei*).

Sig of the Somalis.

Korkei of the Gallas.

Horn-pedicle and horns of the same general type as in the *tora*. Height at shoulder about 47 inches; weight about 300 lbs. General colour pale chocolate-brown, with white tips to the hairs; face black, except the muzzle and a line between the eyes; shoulders and upper part of fore-legs, as well as a patch on upper part of hind-legs, also black.

Distribution.—Interior of Northern Somaliland and Shoa; in Somaliland it is found on the dry plateau known as the *Haud*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{1}{4}$	8 $\frac{3}{8}$	26 $\frac{3}{4}$	Somaliland . . .	Lieut.-Col. H. G. C. Swayne.
19 $\frac{3}{8}$	9	27	Do. . . .	C. Bulpett.
19 $\frac{1}{2}$	9 $\frac{1}{2}$	22 $\frac{1}{2}$	Do. . . .	G. H. Cheetham.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19 $\frac{1}{4}$	10 $\frac{1}{4}$	29	Somaliland .	Julius Jeppe.
19 $\frac{1}{4}$	...	24 $\frac{1}{4}$	N. Somaliland .	J. Menges.
19	10	23 $\frac{1}{4}$	Do. . .	A. E. Butter.
19	9 $\frac{1}{4}$	18 $\frac{1}{4}$	Do. . .	Capt. M. M'Neill.
18 $\frac{3}{4}$	9	21 $\frac{1}{4}$	Somaliland .	Major R. P. Cobbold.
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. . .	Lieut.-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. . .	Capt. B. R. M. Glossop.
17 $\frac{3}{4}$	11	17	Galla Country .	Viscount Edmond de Poncins.
17 $\frac{3}{4}$	8 $\frac{3}{4}$	21	Somaliland .	Count J. de Bylands.
17 $\frac{3}{4}$	10	21 $\frac{1}{2}$	Do. . .	E. Lee Townshend.
17 $\frac{3}{4}$	10	20	Do. . .	Digby Davies.
♀ 15 $\frac{1}{2}$	6 $\frac{3}{4}$	19	Somaliland .	Count J. de Bylands.
♀ 15 $\frac{1}{2}$	7	11 $\frac{1}{8}$	Galla Country .	Viscount Edmond de Poncins.
♀ -15 $\frac{3}{8}$	...	...	N. Somaliland .	J. Menges.

- Owner's measurements.



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

Horn-pedicle moderate, horns bracket-shaped, very short and thick. Height at shoulder about 48 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 hinder surface.

Distribution.—Eastern Africa, from Usagara northwards to Kilimanjaro and Masailand.

According to Mr. F. J. Jackson, "this hartebeest ranges as far north as L. Naivasha, south into German territory and east to within a few miles of the coast at the back of the Shimba hills." A bull shot by Capt. R. A. J. Montgomerie in Masailand weighed 312 lbs.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{1}{4}$	...	...	East Africa	Julius Jeppe.
20	9	13 $\frac{1}{4}$	Do.	Capt. R. Meinertzhagen.
19 $\frac{1}{2}$	9 $\frac{1}{2}$	14	Do.	J. Rosen.
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. Hannynnton.
19 $\frac{1}{4}$	10	16	Do.	R. Wahrmann.

— Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19½	9¾	16	East Africa	Major E. G. Harrison.
-19½	9¾	13	Do.	P. C. Keytel.
19	10¼	12	Do.	W. F. Wailes-Fairbairn.
19	9¾	16	Do.	Sir Robert Harvey, Bart.
-19	10¼	14	Lake Manjara	O. Neumann.
-19	10¾	14	East Africa	Berlin Museum.
19	9	15¾	Do.	F. W. Belt.
18¾	9¼	14¼	Do.	C. B. C. Storey.
18¾	10¾	14	Do.	W. W. Ashley.
18¾	8½	16¼	Do.	F. J. Jackson.
-18½	10½	18	West of Mombassa . . .	C. W. Hobley.
18½	10	12¾	East Africa	T. P. A. Holford.
18½	10	16¼	Makindo, East Africa . .	Rhys Williams.
18½	9½	18¾	East Africa	E. N. Buxton.
18½	9½	12¾	Do.	J. H. Penruddock.
18¼	9½	13¾	Do.	H. C. V. Hunter.
18¼	9¼	14¼	Do.	Douglas M'Douall.
18¼	10½	18¾	Do.	Norman B. Smith.
18	10¾	14½	Do.	Julius Jeppe.
18	10	11¾	Do.	Lieut.-Col. W. A. W. Lawson.
18	10	18	Do.	W. N. M'Millan.
-18	7½	12½	Masailand	Count Scheibler.
18	10	13¾	East Africa	Major C. P. Foley.
18	10	14	Do.	Lieut. F. C. Grover, R.N.
18	11	15¾	Do.	Marquis of Waterford.
18	9½	14	Do.	Earl of Warwick.
♀ 16	7	14½	Do.	Abel Chapman.
♀ 15¼	7¼	12½	Do.	S. L. Hinde.
♀ 14¾	7¾	11	Do.	O. Neumann.

- Owner's measurements.



Horns of Male Cape Hartbeest. Mr. F. H. Barber's specimen.

CAPE HARTEBEEST (*Bubalis cama*).

Kama of the Bechuanas.

Ingama of the Makalakas.

Horn-pedicle greatly elongated, horns very sharply bent, and forming a letter V when viewed from the front. Height at shoulder about 48 inches. General colour brownish fulvous, 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, forming a marked contrast to the other colours.

Distribution.—Africa southwards of the Limpopo, but extending farther northwards along the confines of the Kalahari desert. This large and handsome species (the roi hartebeest) is now nearly exterminated in the Cape, although still found in the Transvaal. 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 of hartebeest are to be found in the plains and open forest of British Bechuanaland and the Bechuanaland Protectorate. In the North Kalahari and the desert-regions about the Botletli River big troops are to be met with. This hartebeest is remarkably fleet and enduring, and by no means easy to bag. Its flesh is palatable, and its brilliant coat much sought after by the native tribes.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-26	11 $\frac{3}{4}$	13	Natal . . .	C. S. Mann.
-25 $\frac{1}{4}$	12	4	Orange River Colony	Julius Jeppe.
-25	11 $\frac{1}{4}$	10 $\frac{1}{2}$	Do. . .	Capt. W. Jardine.
-25	...	...	Do. . .	F. H. Barber. (See illustration.)
25	11	10	Do. . .	C. Rube.
-24 $\frac{7}{8}$	11	7	Nata River . . .	H. M. Barber.
24 $\frac{3}{4}$	10 $\frac{1}{2}$	9 $\frac{5}{8}$	?	R. T. Coryndon.
-24 $\frac{5}{8}$	11 $\frac{3}{4}$	11 $\frac{1}{8}$	?	B. Senior.
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 $\frac{1}{2}$	11 $\frac{5}{8}$	12	Damaraland . . .	Berlin Museum.
-24 $\frac{3}{8}$	10 $\frac{1}{4}$	9 $\frac{1}{10}$	Do.	Th. Rehbock.
-24 $\frac{3}{8}$	11	17 $\frac{5}{8}$	?	P. C. Keytel.
-24 $\frac{1}{4}$	11	7 $\frac{7}{8}$	South Africa . . .	Julius Jeppe.
-24	...	...	Do.	W. J. Corder.
23 $\frac{3}{4}$	10	8 $\frac{3}{8}$	Do.	British Museum (Sir Andrew Smith).
23 $\frac{1}{2}$	11 $\frac{1}{2}$	10 $\frac{1}{2}$	Kamaland . . .	F. C. Selous.
23 $\frac{1}{2}$	12	6 $\frac{1}{4}$	?	J. S. Dawson.
-23 $\frac{1}{2}$	13	5 $\frac{7}{8}$	?	Sir Edmund G. Loder, Bart.
-23 $\frac{1}{2}$	11	5 $\frac{1}{2}$	Kalahari . . .	Dr. Albert von Stephani.
23 $\frac{1}{4}$	11 $\frac{1}{4}$	16 $\frac{1}{2}$	?	W. A. Simpson Hinchliffe.
- 9 21 $\frac{3}{8}$	8 $\frac{1}{2}$	13 $\frac{1}{2}$	South Africa . . .	Julius Jeppe.
- 9 21	7 $\frac{1}{2}$	15 $\frac{1}{2}$	Do.	P. C. Keytel.
- 9 20	...	...	Orange River Colony	South African Museum.

- Owner's measurements.



Skull and Head of Jackson's Hartebeest.

HEUGLIN'S and JACKSON'S HARTEBEESTS (*Bubalis lelwel*).

(See also page 137.)

Mangazi of the Wagandas. *Tétel* of the Sudanese.

Generally similar to the preceding, but with the horns less abruptly bent backwards from above. In the closely allied Jackson's Hartebeest, *B. lelwel jacksoni*, there is no black blaze on the face, and the colour is uniformly foxy red. Weight about 450 lbs. Height at shoulder about 52 inches.

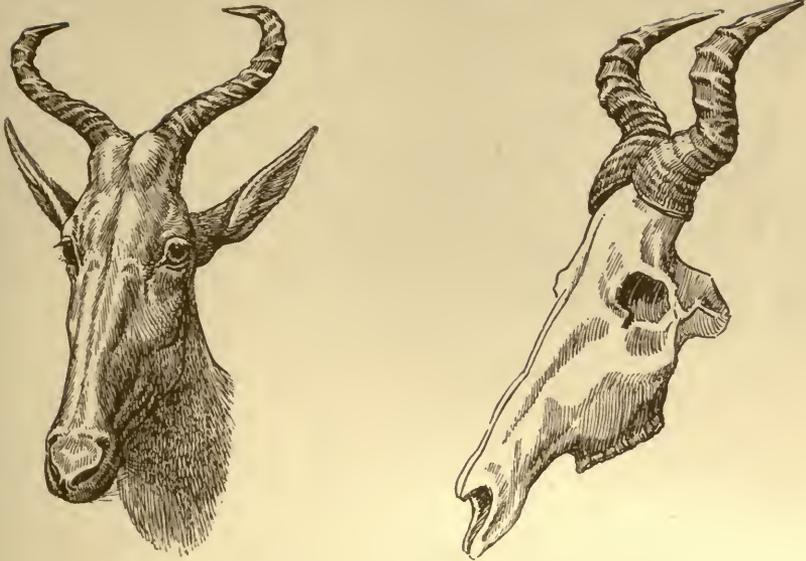
Distribution.—Typically from the Bahr-el-Ghazal, Upper Nubia, and Kordofan; represented in the interior of British Central Africa, and north of Lake Baringo, Uganda, by *B. lelwel jacksoni*, to which many of the under-mentioned specimens belong.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
25	12½	11½	Uganda . . .	Douglas M'Douall.
25	12	10¾	Do. . . .	Capt. A. W. Jennings Bramley.
24¾	11½	13¾	Do. . . .	Dr. A. Paget.
24¾	11½	13¾	Kordofan . . .	C. E. Lyall.
24½	10¾	11¼	S. Kordofan . . .	Capt. G. S. Cameron.
24½	10½	11¼	E.C. Africa . . .	F. J. Jackson.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
24	11	14 $\frac{3}{4}$	East Africa . . .	Lord Hindlip.
24	11 $\frac{3}{4}$	10 $\frac{1}{2}$	Sudan . . .	Capt. A. C. Jeffcoat.
-24	11	12	Uganda . . .	Dr. A. MacCarthy Morrogh.
23 $\frac{3}{4}$	11 $\frac{1}{2}$	8 $\frac{3}{4}$	Do. . .	Col. J. H. Patterson.
23 $\frac{3}{4}$	11	9 $\frac{1}{2}$	Kordofan . . .	Major C. J. Hawker.
23 $\frac{3}{4}$	11 $\frac{1}{2}$	8 $\frac{3}{4}$	Sudan . . .	C. Logan.
23 $\frac{1}{2}$	12	12	Uganda . . .	Major A. E. Smith.
23 $\frac{1}{2}$	11 $\frac{1}{2}$	8 $\frac{1}{2}$	Do. . .	C. Craig.
23 $\frac{1}{2}$	12	9	Do. . .	E. Gedge.
23 $\frac{1}{2}$	11 $\frac{1}{2}$	6 $\frac{1}{2}$	Do. . .	Col. Trevor Ternan.
23 $\frac{1}{2}$	12 $\frac{1}{2}$	11	Do. . .	H. C. Holmes.
23 $\frac{1}{4}$	11 $\frac{1}{2}$	9 $\frac{1}{2}$	Do. . .	Col. E. G. T. Bainbridge.
23	11 $\frac{1}{2}$	10 $\frac{3}{8}$	Do. . .	T. D. M. Cardeza.
23	11 $\frac{3}{4}$	4 $\frac{1}{4}$	Do. . .	W. Cooper.
23	11 $\frac{3}{4}$	8 $\frac{1}{4}$	Do. . .	Sir Edmund G. Loder, Bart.
23	12 $\frac{3}{4}$	8 $\frac{1}{2}$	Do. . .	Lt.-Col. W. A. W. Lawson.
22 $\frac{7}{8}$	10 $\frac{3}{8}$	11 $\frac{3}{4}$	Do. . .	Paris Museum.
22 $\frac{3}{4}$	10 $\frac{1}{2}$	7	Do. . .	Capt. the Hon. M. P. Macnaghten.
22 $\frac{3}{4}$	11	5 $\frac{1}{2}$	Do. . .	Capt. H. R. Headlam.
22 $\frac{1}{2}$	11	4 $\frac{1}{4}$	Sudan . . .	W. F. Wailes-Fairbairn.
22 $\frac{1}{2}$	11 $\frac{1}{2}$	5 $\frac{3}{4}$	Uganda . . .	P. B. Vander-Byl.
22 $\frac{1}{2}$	10 $\frac{3}{4}$	10 $\frac{3}{4}$	Do. . .	Maj. E. J. Tickell.
22 $\frac{1}{2}$	12	6	Do. . .	Maj. C. U. Price.
22 $\frac{1}{2}$	11	12	Molo River . . .	Rhys Williams.
22 $\frac{1}{2}$	11 $\frac{1}{2}$	6 $\frac{1}{2}$	Uganda . . .	Capt. M. F. Gage.
22 $\frac{1}{2}$	11	5 $\frac{3}{4}$	Do. . .	Sir Henry D. Tichborne, Bart.
22 $\frac{1}{2}$	11 $\frac{1}{4}$	7 $\frac{3}{4}$	Sudan . . .	Capt. A. J. B. Percival.
22 $\frac{1}{2}$	11 $\frac{1}{2}$	12	Uganda . . .	C. H. Tritton.
22 $\frac{1}{2}$	11	11	Do. . .	A. E. Butter.
22 $\frac{1}{2}$	10 $\frac{1}{2}$	14	Do. . .	H. C. Hadrill.
♀ 22	8 $\frac{1}{2}$	6 $\frac{7}{8}$	Sudan . . .	Col. St. G. Henry.
♀ 21	10 $\frac{3}{4}$	11 $\frac{1}{4}$	Uganda . . .	Dr. A. Paget.

- Owner's measurements.



Head of Female and Skull of Male Neumann's Hartbeest.

NEUMANN'S HARTEBEEST (*Bubalis neumanni*).

Nearly allied to *B. leleuel*, but distinguished by the more widely separated horns, which at first extend outwards, almost at right angles, and then curve inwards. They are also shorter and more slender, with the terminal rings nearer the tips. Mr. Walter Rothschild gives the following particulars:—

Colour of hair fulvous fawn, much richer on the back, where there are also some darker spots, which may be stains or natural; below very much paler. Chin blackish, tip of tail black. The male is brighter and darker in colour than the female. There are also on the back some patches with longer, thicker, almost whitish-buff hair, perhaps remains of the winter fur. Height at shoulder about 48 inches.

Distribution.—East Africa, in the neighbourhood of Lake Rudolf and thence southwards towards Lake Baringo, where it may grade into *B. leleuel jacksoni*.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22	10½	11¼	East Africa . . .	A. J. A. Douglas.
21½	11	9¾	Do.	W. W. Ashley.
21½	11	12½	Do.	Hon. Guy Wilson.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
21½	12	12	East Africa . . .	Guy Fenwick.
21	10¾	9½	Do. . . .	Capt. R. Meinertzhagen.
21	9¾	11½	Do. . . .	Lieut.-Col. W. A. W. Lawson.
21	9¾	9¾	Do. . . .	R. M. Dane.
20½	11	11¾	Do. . . .	W. F. Wailes-Fairbairn.
-20¾	11¾	11¼	Rift Valley . . .	C. Steuart Betton.
20¾	11	14	East Africa . . .	C. C. Wilson.
20¼	9¾	13	Do. . . .	G. L. Harrison.
20¼	11	13	Do. . . .	Capt. V. C. de Crespigny.
20	11¼	11¼	Do. . . .	F. C. Selous.
20	10½	12	Do. . . .	G. Crompton.
19¾	11	9¾	Do. . . .	W. Cooper.
19¾	11¼	8¾	Do. . . .	C. B. C. Storey.
19¾	10½	14¼	Do. . . .	B. C. Ransome.
-19¾	...	...	Do. . . .	Sir Edmund G. Loder, Bart.
19½	10¼	9¼	Lake Nakaru . . .	Capt. J. Ponsonby.
-19¾	10¼	8½	White Nile . . .	Sir W. Garstin.
19¼	9¾	8¼	Lake Nakaru . . .	P. B. Vander-Byl.
19¼	9¾	8½	Do. . . .	W. J. Chapman.
19¼	10	7½	Do. . . .	L. Hawkins.
19	11	9¾	East Africa . . .	F. J. Jackson.
19	11¼	9¼	Do. . . .	H. T. Barclay.
19	10½	14½	Lake Stefanie . . .	O. Neumann.
19	10½	11¾	East Africa . . .	T. D. M. Cardeza.
19	11¼	12¾	Do. . . .	T. P. Kempson.
18¾	10	9	Mau Plateau . . .	Major C. H. Villiers.
18½	11¼	9¾	East Africa . . .	A. Brocklehurst.
18½	11¾	6	Do. . . .	T. P. A. Holford.
18½	10	9	Near Achmed Agha . . .	Capt. J. H. Rivers.
18½	10½	9	Mau Plateau . . .	Hon. Walter Rothschild.
18½	10¾	9¼	Do. . . .	G. M. Spencer Smith.
♀ 16¾	8	11½	East Africa . . .	J. R. Bradley.
♀ 16¾	8½	12½	Do. . . .	Abel Chapman.
♀ 16½	8¼	9¾	Lake Nakaru . . .	Rhys Williams.

- Owner's measurements.



Head of Lichtenstein's Hartebeest.

LICHTENSTEIN'S HARTEBEEST (*Bubalis lichtensteini*).

Inkulando of the Mashonas.
Kokotombwi in Barotsiland.

Konze in the Chilala and Chibisa
countries.

Konshe in the Chinyanja.

Horn-pedicle very short and broad, and the horns themselves much curved inwards towards one another below the terminal backward inclination. Height at shoulder about 50 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, throughout Nyasaland and Mozambique to Usagara.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22 $\frac{7}{8}$	11	7 $\frac{7}{8}$	?	Mr. Justice Hopley.
22 $\frac{3}{4}$	...	...	Nyasaland . . .	F. Watkinson.
22 $\frac{1}{2}$	11 $\frac{1}{2}$	15	Barotsiland . . .	T. G. Davey.

— Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
21½	12¼	9	E. of Tanganyika . . .	O. L. Berringer.
21½	12½	9	Batoka Plateau, Northern Rhodesia	F. Smitheman.
-21½	...	...	Do.	R. T. Coryndon.
21¼	12½	5¼	?	L. A. Wallace.
21	12¼	8¾	Barotsiland . . .	H. Timmins.
-21	12½	8	Angoniland . . .	Capt. J. Brander Dunbar.
20¾	12½	5½	Barotsiland . . .	P. B. Vander-Byl.
-20¾	12¾	7¾	Portuguese East Africa . . .	F. Vaughan Kirkby.
20¾	...	...	?	Julius Jeppe.
20¾	13	6	Fort Johnstone, B.C.A. . .	C. C. Bowering.
20½	12½	8¾	?	George Grey.
-20½	...	9¼	Batoka Plateau . . .	E. Folley.
-20¼	11	10¾	?	P. C. Keytel.
-20¼	11½	9½	Tanganyika . . .	J. Gibson Hall.
-20 ⁵ / ₁₆	11 ⁵ / ₈	7 ⁵ / ₁₆	B.C. Africa . . .	A. S. Hamilton.
20½	12¼	10¼	Congo Free State (?) . . .	Julius Jeppe.
-20½	12¾	5¼	German E. Africa . . .	O. Neumann.
20	12¼	6½	B.C. Africa . . .	R. Berridge.
20	13	6	N.W. Rhodesia . . .	Col. C. Harding.
20	13	11¼	N.E. Rhodesia . . .	F. H. Melland.
-20	12	5¼	Nyasaland . . .	W. H. Wilson.
20	12½	8	Wami River, East Africa . . .	Sir J. Kirk.
20	13¼	8	Fort Hill, B.C.A. . . .	John Yule.
20	11½	10½	Barotsiland . . .	C. M. Rolker.
20	12	8½	B.C. Africa . . .	A. L. Francis.
20	12	7¾	Barotsiland . . .	Major G. Wilson.
19¾	12¾	4½	Tanganyika Plateau . . .	E. Wilson.
-19¾	12¾	4¾	S.E. Africa . . .	H.R.H. Prince Pedro d'Orléans et de Braganza.
19¾	12½	9½	B.C. Africa . . .	Capt. R. S. Chichester.
19½	11½	12	Do. . . .	Sir Edmund G. Loder, Bart.

- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19½	11½	8½	S.E. Africa . . .	Hon. Walter Rothschild.
19½	12¼	6	N.W. Rhodesia . . .	R. C. Forster.
19½	12½	5½	Tanganyika . . .	A. Mathews.
19½	13½	5¾	Do.	E. Homer.
19½	12¼	9	N.W. Rhodesia. . . .	E. C. Morel.
♀ 15	8½	4¾	River Sabi, Mashonaland .	British Museum (F. C. Selous).
♀ 15	7½	5¾	Portuguese East Africa .	F. Vaughan Kirby.



Head of Niedieck's Hartbeest. From Mr. Niedieck's book, *Mit Büchse in Fünf Weltteilen*.

NIDIECK'S HARTEBEEST (*Bubalis niediecki neum*).

(Recently described by a German scientist.)

Distribution.—White Nile District.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22	10¼	12¼	White Nile.	P. Niedieck.
♀ 20¼	9¼	10	Do.	Do.



Head of Hunter's Hartebeest. From a specimen shot by Mr. H. C. V. Hunter.

HUNTER'S HARTEBEEST (*Damaliscus hunteri*).

Somali name, *Arôle*.

Gala name, *Blanketta*.

With this species we come to a group of antelopes closely allied to the true hartebeests, but in which the frontal region is not elevated into a horn-pedicle, while the horns themselves form in most cases a lyrate or simple curve, and the face is of medium length. 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 white chevron on the face, the inner surface of the ears and the tail-tuft white. Height at shoulders about 4 feet, and the build light and graceful.

Distribution.—Southern Somaliland to north bank of Tana River.

On front curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight.	Circumference.			
—26½	22½	8½	12½	Jubaland . . .	Lieut.-Col. E. G. Harrison.
26¼	22	8¼	12½	Tana Valley, E. Africa .	Sir Robert Harvey, Bart.
24¾	...	8¼	15½	Do. . .	H. C. V. Hunter.
24¾	21¼	8¾	9¾	Do. . .	Sir Robert Harvey, Bart.
♀—21¼	19½	5¾	11	Jubaland . . .	Lieut.-Col. E. G. Harrison.
♀ 21	...	5¾	7	Tana Valley, E. Africa .	F. H. Barber.
20½	...	5¾	8¾	Do. . .	Hon. Walter Rothschild.

— Owner's measurements.



Head of Korrigum.

KORRIGUM or SENEGAL HARTEBEEST (*Damaliscus corrigum*).*Derri* of the Hausas.

Horns with a single slightly lyrate curve. Size medium. General colour reddish, with patches on the face, shoulders, upper part of fore-legs, hips, and thighs, and the tail-tuft black; no dark markings on back and feet.

Distribution.—Senegambia and the interior of West Africa.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
26 $\frac{1}{4}$	9 $\frac{1}{2}$	15 $\frac{1}{8}$	Senegambia . . .	Imperial Museum, Vienna.
26 $\frac{1}{2}$	9 $\frac{3}{4}$	5 $\frac{1}{4}$	Lake Tchad . . .	Major D. F. MacCarthy Morrogh.
25 $\frac{1}{4}$	9 $\frac{1}{2}$	14	Gambia . . .	W. B. Stanley.
24 $\frac{3}{4}$	10	6 $\frac{3}{4}$	Lake Tchad . . .	A. L. Ross.
24 $\frac{3}{4}$	9	9	Nigeria . . .	A. B. Baillie-Hamilton.
24 $\frac{5}{8}$	10 $\frac{1}{4}$	7	Benue . . .	E. J. Wolseley.
24 $\frac{5}{8}$	9 $\frac{5}{8}$	4 $\frac{3}{4}$	Lake Tchad . . .	Major J. B. Cockburn.
♀ 24 $\frac{1}{4}$	7	3 $\frac{3}{4}$	Do. . .	Major D. F. MacCarthy Morrogh.
24	9 $\frac{1}{2}$	6	Do. . .	L. C. Jackson.
24	10	5	N. Nigeria . . .	Lieut.-Col. T. Astley Cubitt.

— Owner's measurements.

KORRIGUM OR SENEGAL HARTEBEE

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Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
24	9	9	Lake Tchad . . .	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 Tchad . . .	S. B. B. Dyer.
♀ 19 $\frac{3}{8}$	6 $\frac{3}{4}$	5 $\frac{3}{4}$	Do.	Do.
♀ 19 $\frac{1}{4}$	6 $\frac{3}{4}$	8	Between Benue and Lake Tchad	Hon. Walter Rothschild.



Skull and Horns of Tiang.

TIANG (*Damaliscus corriganus tiang*).

Apparently only a local race of the korrigum, from which it is distinguished by its slightly inferior dimensions, and certain differences in the black markings on the face and limbs.

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

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
25 $\frac{7}{8}$	9 $\frac{1}{2}$	11 $\frac{1}{2}$	Kordofan . . .	Major C. J. Hawker.
24 $\frac{3}{4}$	10 $\frac{1}{2}$	9 $\frac{5}{8}$	Do.	Capt. A. J. B. Percival.
24 $\frac{1}{2}$	9 $\frac{1}{2}$	9	White Nile . . .	H. Cookson.
23 $\frac{9}{16}$	8 $\frac{3}{4}$	7 $\frac{1}{2}$	Do.	Capt. M. M'Neill.
23	9 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	E. C. Crispin.
22 $\frac{7}{8}$	8 $\frac{3}{4}$	5 $\frac{1}{4}$	Do.	Lord St. Oswald.

— Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
22 $\frac{3}{4}$	8 $\frac{3}{4}$	9	White Nile . . .	British Museum (R. M'D. Hawker).
22 $\frac{5}{8}$	9	7	Sudan . . .	R. J. Collins.
22 $\frac{1}{2}$	8 $\frac{3}{4}$	6 $\frac{1}{2}$	Do. . . .	Capt. G. S. Cameron.
22 $\frac{3}{8}$	9 $\frac{3}{4}$	14	White Nile . . .	Brig.-Gen. B. T. Mahon.
22 $\frac{1}{4}$	9	5 $\frac{1}{2}$	Sudan . . .	Capt. G. S. Nickerson.
22 $\frac{1}{4}$	8 $\frac{1}{2}$	6 $\frac{1}{4}$	White Nile . . .	Major H. N. Dunn.
22	8 $\frac{1}{4}$	7 $\frac{1}{4}$	Do. . . .	J. H. Whitehouse.
22	9	9 $\frac{1}{4}$	Sudan . . .	Marquis Pizzardi.
♀ 22 $\frac{1}{4}$	8 $\frac{3}{4}$	7 $\frac{1}{2}$	Kordofan . . .	Capt. A. J. B. Percival.
♀ 21 $\frac{3}{4}$	7	7	Do. . . .	Col. B. T. Mahon.
♀ -20 $\frac{1}{4}$	6 $\frac{1}{2}$	3	Near Fashoda . .	Hon. F. E. Guest.
♀ 20 $\frac{1}{4}$	6 $\frac{3}{4}$	6 $\frac{3}{8}$	Bahr-el-Ghazal .	British Museum (Consul Petherick).

- Owner's measurements.



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

TOPI (*Damaliscus corriganus jimela*).

Korké of the Gallas.

Mangazi of the Wagandas.

The southern representation of the last, distinguished by its still smaller size (height at shoulder, 46-49 inches), shorter and more slender horns, and the somewhat brindled appearance of the coat, due to patches of longer hairs on the otherwise short fur. General colour a peculiar purple-brown, with the dark markings less defined and less black than in the *korrigum* *D. corriganus typicus*. Height at shoulder about 50 inches. Weight about 250 to 380 lbs.

Distribution.—British East Africa from the Juba to the Sabuki River, and thence to Uganda and Uniamwezi.

Length on front curve.	Circumference.	Tip to Tip.	Locality	Owner.
22½	8½	5¾	Galla Country	D. P. MacGillivray.
21	8	6½	North end of Lake Rudolf	The late H. Andrew.
-20½	8½	7½	Uganda	Dr. A. MacCarthy Morrogh.

- Owner's measurements.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
19½	9½	7¼	Uganda	Lord Hindlip.
19¼	6⅝	3⅝	East Africa	H. C. V. Hunter.
19¼	8¼	8	S. Albert Edward Nyanza	E. S. Grogan.
19	7⅞	8	Lake Rudolf	A. E. Butter.
-19	8¼	7¼	Uganda	Capt. A. W. Jennings Bramley.
19	6¾	8½	East Africa	A. Louw.
18¾	8¼	6¼	North end of Lake Rudolf	A. H. Neumann. ¹
-18½	7½	6	Jubaland	Lieut.-Col. E. G. Harrison.
18½	7¾	5¾	Tana Valley	Capt. H. de Prée.
18½	8¾	8½	East Africa	Sir Edmund G. Loder, Bart.
18½	8⅝	5¼	Do.	J. Carr Saunders.
18½	7⅝	6	North end of Lake Rudolf	Julius Jeppe.
18¼	8¼	5½	?	L. Aylmer.
♀ 17⅝	7½	6½	East Africa	C. Craig.
♂ 16⅝	6⅞	6¼	North end of Lake Rudolf	British Museum (A. E. Butter).

- Owner's measurements.

¹ Determination provisional.

² Albino specimen.



Head of Bontebok.

BONTEBOK (*Damaliscus pygargus*).

Distinguished from the preceding species of the genus by the 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 near the rump, flanks, shoulders, front of limbs, and tail-tuft; rump, upper half of tail, under parts, and much of hinder 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 Vaal River; now nearly exterminated. Although formerly occurring in tens of thousands on the Karoos of Cape Colony and the plains of the Orange River Colony, 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 $\frac{3}{4}$	6 $\frac{3}{4}$	9 $\frac{1}{2}$	?	British Museum.
16 $\frac{1}{2}$	6 $\frac{5}{8}$	8 $\frac{7}{8}$	Bredasdorp . . .	A. C. Campbell.
¹ 15 $\frac{7}{8}$	6 $\frac{7}{8}$	8	Do.	British Museum (F. C. Selous).

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

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-15 $\frac{3}{4}$	6 $\frac{1}{2}$	7 $\frac{1}{16}$	Bredasdorp	Capt. W. Jardine.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.
15 $\frac{1}{4}$	6 $\frac{1}{2}$	7	Do.	W. A. Simpson Hinchliffe.
-15 $\frac{1}{2}$	6 $\frac{1}{2}$	5	Do.	A. Ohlsson.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	9 $\frac{3}{8}$	Do.	A. C. Humbert.
-15 $\frac{1}{2}$	6 $\frac{3}{8}$	9 $\frac{3}{8}$	Do.	Mr. Justice Hopley.
15 $\frac{3}{8}$	6 $\frac{1}{2}$	8 $\frac{1}{4}$	Cape Colony	Sir Victor Brooke's Collection.
-15 $\frac{1}{4}$	6 $\frac{1}{8}$	9	Bredasdorp	P. C. Keytel.
15	6 $\frac{3}{4}$	8 $\frac{1}{2}$	Cape Colony	F. C. Selous.
15	6 $\frac{3}{8}$	7 $\frac{5}{8}$	Do.	Capt. F. Cookson.
15	6 $\frac{1}{4}$	6 $\frac{3}{4}$	Bredasdorp	W. S. Curtis.
-15	6 $\frac{1}{4}$	7 $\frac{5}{8}$	Do.	Julius Jeppe.
-15	6	9 $\frac{1}{8}$	Do.	Dr. Albert von Stephani.
15	6 $\frac{1}{4}$	10	Do.	A. W. Guthrie.
-14 $\frac{1}{2}$	...	...	Do.	S. African Museum.
♀ 14 $\frac{1}{4}$	5 $\frac{3}{8}$	7 $\frac{5}{8}$	Do.	Julius Jeppe.
♀ 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).
♀ -13	5	6 $\frac{1}{8}$	Do.	Abel Chapman.

- Owner's measurements.

¹ Height at shoulder, 36 $\frac{1}{2}$.



Horns of Female and Male Blesbok.

BLESBOK (*Damaliscus albifrons*).

Nunni of the Bechuanas.

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 tinge on the rings of the horns.

Formerly to be numbered by hundreds of thousands, the beautiful blesbok has in the last forty years grown very scarce indeed, being only met with in small numbers on a few Boer farms in the Transvaal and the Orange River Colony. Sixty 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 of a sight he beheld in the blesbok country in 1848. "The plains," he says, "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, and Bechuanaland; now nearly exterminated.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
18 $\frac{1}{4}$	5 $\frac{3}{4}$	12 $\frac{1}{4}$	South Africa . . .	Sir Edmund G. Loder, Bart.
-18	6 $\frac{1}{2}$	10 $\frac{3}{4}$	Orange River Colony .	F. R. N. Findlay.
-17 $\frac{1}{2}$	6 $\frac{1}{2}$	8 $\frac{3}{4}$	Transvaal . . .	J. B. Wheelwright.
17 $\frac{1}{4}$	6 $\frac{3}{4}$	7	Do.	Abe Bailey.
-17 $\frac{1}{4}$	6 $\frac{1}{4}$	10 $\frac{1}{8}$	Orange River Colony .	Capt. W. Jardine.
17 $\frac{1}{4}$	7 $\frac{1}{4}$	6 $\frac{1}{2}$	Do.	B. J. Fitzherbert.
17 $\frac{1}{4}$	6 $\frac{3}{4}$	8 $\frac{1}{2}$	Do.	Sir H. J. Goold-Adams.
-17	...	8 $\frac{1}{2}$	?	Major W. Anstruthur Gray.
17	6 $\frac{3}{4}$	7	?	F. V. Worthington.
17	7	10	?	J. L. Drège.
-16 $\frac{3}{8}$	7	7 $\frac{1}{2}$	Orange River Colony .	Count E. Hoyos.
16 $\frac{3}{4}$	6 $\frac{3}{4}$	7	?	T. Stephenson.
16 $\frac{3}{4}$	6 $\frac{1}{2}$	9 $\frac{3}{8}$	Orange River Colony .	Col. W. H. Sitwell.
-16 $\frac{5}{8}$	6 $\frac{3}{8}$	9 $\frac{1}{2}$	Do.	Julius Jeppe.
♀ -16 $\frac{1}{2}$	6 $\frac{1}{4}$	8 $\frac{3}{4}$	Do.	Do.
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 $\frac{5}{8}$	9 $\frac{1}{2}$	Do.	P. C. Keytel.
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.

- Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16	6 $\frac{3}{4}$	8 $\frac{3}{8}$	Orange River Colony	Major Lord Douglas Compton.
16	6 $\frac{3}{8}$	7	Do.	W. A. Simpson Hinchliffe.
-16	...	...	Do.	South African Museum.
15 $\frac{1}{4}$	6 $\frac{1}{2}$	¹ 10	Driefontein, Orange River Colony	British Museum (F. C. Selous).
♀ 15	5 $\frac{1}{4}$	...	Orange River Colony	Capt. H. D. Livingstone.
♀ -14 $\frac{7}{8}$	4 $\frac{3}{4}$	8 $\frac{1}{4}$	Do.	P. C. Keytel.
♀ 14	4 $\frac{3}{8}$	6 $\frac{5}{8}$	Do.	Hon. R. A. Ward.
♀ 14	5 $\frac{3}{4}$	5 $\frac{1}{2}$	?	T. Stephenson.

- Owner's measurements.

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.

SASSABY or BASTARD HARTEBEEST (*Damaliscus lunatus*).

Incolomo of the Matabili.

Ingalowana of the Basutos.

Inkweko of the Masubias.

Inyundo of the Makalakas.

Kaboli in Barotsiland and Lake
Ngami country.

Luchu of the Masaras.

M'tengo in the Chilala and Chibisa
countries.

Mzanci of the Swazis.

Mzanzi of all Zulu tribes.

Unchuru of the Makubas.

Horns starting obliquely outwards, with a single upward and backward lunate curve. Height at shoulder nearly 4 feet. General colour dark chestnut rufous, 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 ruminant in South Africa. Were it not that this handsome antelope, in common with its near relative the Cape hartebeest, 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.
16 $\frac{5}{8}$	7 $\frac{3}{4}$	13 $\frac{3}{4}$	N.E. Rhodesia	F. H. Melland.
16 $\frac{1}{2}$	8	11	?	J. L. Drège.
16 $\frac{1}{2}$	7 $\frac{1}{2}$	12 $\frac{1}{4}$	N.E. Rhodesia	H. Cookson.
16	7 $\frac{3}{4}$	11 $\frac{1}{4}$	?	A. Hugh Bainbridge.
16	7 $\frac{5}{8}$	12 $\frac{3}{4}$	Chinama, B.C.A.	Hon. Walter Rothschild.
15 $\frac{3}{4}$	7 $\frac{1}{2}$	15 $\frac{1}{2}$	Mashonaland	Sir John Willoughby, Bart.
15 $\frac{3}{8}$	7 $\frac{1}{2}$	11 $\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
15 $\frac{1}{2}$	8 $\frac{1}{4}$	10 $\frac{1}{4}$	?	W. A. Simpson Hinchliffe.
15 $\frac{1}{4}$	...	...	Mashonaland	F. C. Selous.
15 $\frac{1}{4}$	7 $\frac{3}{8}$	9 $\frac{1}{4}$	S.E. Africa	Julius Jeppe.
15 $\frac{1}{4}$	7 $\frac{1}{2}$	13 $\frac{3}{4}$	?	P. C. Keytel.
15 $\frac{1}{4}$	7 $\frac{3}{8}$	10 $\frac{3}{8}$	Pungwe	Capt. W. Jardine.
15 $\frac{1}{4}$	8	12 $\frac{1}{4}$	S.E. Africa	British Museum (Sir Andrew Smith).
15 $\frac{1}{8}$	7 $\frac{1}{4}$	12	Do.	Sir Victor Brooke's Collection.
15	8	13 $\frac{1}{4}$	Rhodesia	Duke of Westminster.
15	7 $\frac{1}{2}$	11	?	R. H. Venables Kyrke.
15	8 $\frac{3}{8}$	11 $\frac{5}{8}$	S.E. Africa	G. Richards.
15	7	11	Do.	A. Moseley.
14 $\frac{7}{8}$	8	10	Lebombo Mountains	F. Vaughan Kirby.
14 $\frac{3}{4}$	7 $\frac{1}{2}$	12 $\frac{3}{4}$	?	A. Gerald Biden.
14 $\frac{3}{4}$	...	...	Transvaal	Abel Chapman.
14 $\frac{3}{4}$	7 $\frac{1}{2}$	12	North of Delagoa Bay	A. Cameron.
14 $\frac{1}{2}$	7 $\frac{5}{8}$	11	Mashonaland	British Museum (F. C. Selous).
♀ 14 $\frac{1}{2}$	6	9	Matabililand	Dr. W. P. Y. Bainbrigge.
♀ 13 $\frac{7}{8}$	6 $\frac{5}{8}$	11 $\frac{1}{2}$	Mashonaland	British Museum (F. C. Selous).

— Owner's measurements.



Horns of Bull Brindled Gnu. From Mr. Julius Jeppe's specimen.

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

Ee-vumba of the Makalakas.

Minyumbwe of the Batongas.

Ikokoni of the Basutos.

Numbo of the Masubias.

Inkone-kone of the Amandebili.

Nyamba of the Chilala and Chis-

Inkongone of the Swazis and Zulus.

enga.

Kokong of the Barotse and Batoka natives.

Unzozo of the Makubas.

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 stiff, upright 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 about 4 feet 3 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 uniformly black tail, and the absence of long hair on the under parts. The general colour varies from grizzled roan to blackish slaty brown, with more or less distinct vertical dark stripes on the sides of the neck and fore-quarters; these stripes being most conspicuous in the lighter-coloured specimens. 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 is, however, still to be met with in parts of Griqualand West and of the Kalahari, as well as in British Bechuanaland; while in Khama's country and Rhodesia, and thence northwards through Central and East Africa, it is



Head of Brindled Gnu.

comparatively abundant, 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 Nyasaland race (*C. taurinus johnstoni*), distinguished by the white chevron on the face. Another race is noticed below.

A.—TYPICAL RACE (*Connochætes taurinus typicus*).

Widest outside.	Widest inside.	Length on front curve.	Breadth of palm.	Tip to Tip.	Locality.	Owner.
...	29	31	¹ 13 $\frac{1}{4}$	15 $\frac{1}{4}$	Sabi Flats	Dr. R. P. Mitchell.
-33 $\frac{1}{2}$	28 $\frac{3}{4}$	...	6 $\frac{1}{2}$	24	Do.	B. Secretan.
32 $\frac{1}{2}$	29	20	4	26 $\frac{1}{2}$	P. E. Africa	F. Vaughan Kirby.
...	28 $\frac{1}{2}$	21 $\frac{5}{8}$	5 $\frac{1}{4}$	17 $\frac{3}{4}$	Matabililand	G. H. M. Banks.
31 $\frac{3}{4}$	28	22 $\frac{1}{4}$	4 $\frac{3}{4}$	18 $\frac{3}{4}$	B. C. Africa	Capt. G. M. P. Hawthorne.
...	28 $\frac{1}{2}$	20 $\frac{3}{4}$	5	16	Pungwe	C. C. Gouldsmith.
30 $\frac{7}{8}$	26 $\frac{3}{4}$	21	4 $\frac{1}{4}$	21 $\frac{1}{2}$	S.E. Africa	F. H. Barber.
-30 $\frac{3}{4}$	27	...	4	20 $\frac{3}{4}$	Do.	H. M. von Archer.
30 $\frac{5}{8}$	26 $\frac{3}{8}$	23 $\frac{1}{2}$	5 $\frac{1}{8}$	16 $\frac{3}{4}$	?	Julius Jeppe.
30 $\frac{1}{2}$	26 $\frac{1}{2}$	23 $\frac{1}{2}$	6 $\frac{1}{2}$	18 $\frac{1}{4}$	S.E. Africa	F. C. Selous.
...	-27	21	4 $\frac{1}{2}$	20 $\frac{1}{2}$	?	Mr. Justice Hopley.
30 $\frac{1}{2}$	26	22 $\frac{1}{4}$	4 $\frac{1}{2}$	18 $\frac{1}{2}$	P. E. Africa	Col. A. Colville.
30 $\frac{1}{4}$	26	22	4 $\frac{1}{2}$	17 $\frac{3}{4}$	Do.	W. A. Simpson Hinchliffe.
...	26 $\frac{1}{2}$	21 $\frac{1}{4}$	4 $\frac{5}{8}$	20 $\frac{1}{2}$	Matabililand	Major R. Hayes-Sadler.
...	-26 $\frac{1}{2}$	31 $\frac{1}{4}$	...	17	Delagoa Bay	H. T. and A. H. Glynn.
30	25 $\frac{3}{4}$	21 $\frac{1}{2}$	4 $\frac{3}{4}$	19 $\frac{1}{4}$	Beira	Dr. S. Martin.
30	26 $\frac{1}{4}$	21 $\frac{1}{2}$	4 $\frac{1}{2}$	18 $\frac{1}{4}$	Do.	Hon. Walter Rothschild.
30	26	21	4 $\frac{1}{2}$	19 $\frac{1}{4}$	Pungwe	Count R. Coudenhove.
...	25 $\frac{1}{2}$	22	4 $\frac{1}{4}$	17	S. Africa	G. Richards.
♀ ...	25	22 $\frac{1}{4}$	4 $\frac{1}{2}$	10	P. E. Africa	F. Vaughan Kirby.
-29 $\frac{5}{8}$	25 $\frac{7}{8}$	24 $\frac{1}{4}$	4 $\frac{1}{4}$	18 $\frac{1}{8}$	Do.	Capt. M. M'Neill.
-29 $\frac{5}{8}$	25	25 $\frac{5}{8}$	5 $\frac{1}{2}$	16 $\frac{3}{8}$	Do.	Dr. Albert von Stephani.
29 $\frac{1}{2}$	25 $\frac{1}{4}$	20 $\frac{1}{2}$	5	20	Zululand	Col. D. Bruce.
29	26	19	4	21 $\frac{1}{4}$	N.E. Rhodesia	H. Cookson.
29	25 $\frac{1}{2}$	...	3 $\frac{3}{4}$	19	Pungwe	H.R.H. Prince Pedro d'Orléans et de Braganza.
29	24 $\frac{3}{4}$	20 $\frac{1}{4}$	4 $\frac{1}{4}$	16 $\frac{3}{4}$	?	A. Hugh Bainbridge.
29	25 $\frac{1}{4}$	21	4 $\frac{1}{2}$	18 $\frac{3}{4}$	Zululand	Lieut.-Col. Hon. W. Coke.
28 $\frac{5}{8}$	24 $\frac{1}{4}$	19 $\frac{1}{2}$	5	19 $\frac{1}{2}$	Do.	A. Cameron.
28 $\frac{5}{8}$	24 $\frac{1}{4}$	22	5 $\frac{1}{2}$	19 $\frac{1}{4}$	S. Africa	Sir Edmund G. Loder, Bart.
28	24	18 $\frac{3}{4}$	4 $\frac{3}{4}$	18 $\frac{1}{2}$	British Central Africa	C. B. C. Storey.

- Owner's measurements.

¹ Circumference.



Head of Nyasa Brindled Gnu.

Shot by R. C. Foster.

Widest outside.	Widest inside.	Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
26	21 $\frac{3}{4}$	13 $\frac{1}{4}$	4 $\frac{1}{4}$	17 $\frac{3}{4}$	British Central Africa	Sir Alfred Sharpe.
♀ 25 $\frac{3}{4}$	21 $\frac{1}{8}$	18 $\frac{3}{4}$	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 $\frac{1}{2}$	British Central Africa	R. H. Storey.
25 $\frac{1}{2}$	21 $\frac{5}{8}$	17 $\frac{1}{2}$	4	15	Barotsiland .	R. T. Coryndon.
25 $\frac{1}{4}$	21 $\frac{1}{2}$	14 $\frac{3}{4}$	4 $\frac{1}{2}$	16	Do. . .	R. C. Forster.
-22 $\frac{1}{2}$	19 $\frac{1}{4}$	23	...	14	B.C.A. . .	P. Barclay.
♀ 17 $\frac{1}{4}$	13 $\frac{3}{4}$	12	2 $\frac{3}{4}$	9 $\frac{1}{2}$	Batoka . . .	R. T. Coryndon.

- Owner's measurements.



Skull and Horns of White-Bearded Gnu.

B.—WHITE-BEARDED BRINDLED GNU (*Connochætes taurinus albojubatus*).

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

A local race of the brindled gnu distinguished by its slightly paler coloration, and the yellowish white throat-fringe, a few whitish hairs being also mingled with the mane.

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	25½	24	5¼	16¾	East Africa	Sir Edmund G. Loder, Bart.
29¼	25¾	21½	4¾	17½	Do.	G. L. Harrison.
29	24¾	21	4¾	18	Do.	H. C. Phipps.
28¾	24¾	21	4¾	17¼	Do.	R. Wahrmann.
28½	25	21	4½	17½	Do.	G. G. Longden.
28¼	24½	21	5	18¾	Do.	Abel Chapman.
28¼	24½	22	5	16	Do.	J. H. Penruddock.

RECORDS OF BIG GAME

Widest outside.	Widest inside.	Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
28 $\frac{1}{4}$	24 $\frac{1}{2}$	21	4 $\frac{3}{4}$	16 $\frac{3}{4}$	East Africa	Capt. R. Meinertzhagen.
28	23 $\frac{1}{2}$	20	4 $\frac{1}{2}$	18 $\frac{3}{4}$	Do.	Capt. V. C. de Crespigny.
27 $\frac{3}{4}$	24 $\frac{1}{4}$	21	5	18 $\frac{3}{4}$	Do.	C. B. C. Storey.
27 $\frac{3}{4}$	23 $\frac{3}{4}$	21 $\frac{1}{4}$	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 $\frac{3}{4}$	23 $\frac{1}{4}$	21	5	16	Do.	Prince P. Demidoff.
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 $\frac{1}{2}$	...	22	6	15 $\frac{1}{2}$	Do.	Lord Delamere.
-27 $\frac{3}{8}$	...	...	...	...	Do.	Berlin Museum.
27 $\frac{1}{4}$	23 $\frac{3}{4}$	18 $\frac{1}{4}$	4 $\frac{5}{8}$	19	Do.	Lord Alex. Thynne.
27 $\frac{1}{4}$	22 $\frac{3}{4}$	23	5 $\frac{1}{2}$	15	Do.	Major J. A. Hannington.
-27 $\frac{1}{8}$	23 $\frac{5}{8}$	20 $\frac{1}{4}$	...	15 $\frac{3}{4}$	Do.	O. Neumann.
27	23 $\frac{5}{8}$	17 $\frac{1}{4}$	4 $\frac{1}{2}$	20 $\frac{1}{2}$	Do.	Major C. S. Cumberland.
27	23 $\frac{1}{4}$	20	5	16 $\frac{1}{2}$	Do.	W. N. McMillan.
27	23 $\frac{1}{2}$	21 $\frac{1}{2}$	6	16 $\frac{1}{4}$	Do.	J. R. Bradley.
27	23 $\frac{5}{8}$	22	5 $\frac{1}{4}$	18	Do.	H. Twyford.
27	23	20	5 $\frac{1}{4}$	13 $\frac{3}{4}$	Do.	Lieut. E. W. Roberts, R.N.
27	23	19 $\frac{1}{2}$	4	17 $\frac{1}{4}$	Do.	Lieut. G. P. Leith, R.N.
27	23 $\frac{1}{4}$	19 $\frac{1}{4}$	4 $\frac{1}{2}$	17 $\frac{1}{2}$	Do.	Marquis Pizzardi.
26 $\frac{3}{4}$	23	16 $\frac{1}{4}$	5	20 $\frac{1}{4}$	Do.	A. Bayley-Worthington.
26 $\frac{3}{4}$	23 $\frac{1}{2}$	19 $\frac{1}{2}$	5	18 $\frac{3}{4}$	Do.	Walter Jones.
26 $\frac{3}{4}$	23 $\frac{1}{4}$	18 $\frac{3}{4}$	4 $\frac{1}{2}$	19	Do.	Major G. Lumsden.
♀ 22 $\frac{3}{4}$	19 $\frac{1}{2}$	16 $\frac{1}{2}$	3 $\frac{1}{4}$	12 $\frac{3}{8}$	Do.	R. E. Wemyss.
♀ 22	18 $\frac{3}{4}$	11 $\frac{3}{4}$	3 $\frac{1}{2}$	17	Do.	Norman B. Smith.

- Owner's measurements.



Horns of White-Tailed Gnu. From Mr. F. H. Barber's specimen.

WHITE-TAILED GNU or **BLACK WILDEBEEST** (*Connochætes gnu*).

This southern species is the true gnu, being formerly known to the Hottentots by that name, while, 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 pure white tail, and the abundant fringe of long hair on the chest and under parts, serve at once to 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 only by herds of a few hundred head preserved in the Orange River Colony. On the plains of the latter country, as well as on the Karoos 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.
-30 $\frac{7}{8}$	¹ 22 $\frac{1}{2}$	14	Kalahari . . .	Dr. F. H. H. Guillemard.
-30	10 $\frac{1}{2}$	17 $\frac{1}{2}$	?	Mr. Justice Hopley.

- Owner's measurements.
¹ Circumference.

RECORDS OF BIG GAME

Length on front curve.	Breadth of Palm.	Tip to Tip.	Locality ¹ .	Owner.
-29½	6¾	7	Orange River Colony	Julius Jeppe.
-28	...	...	Colesburg . . .	F. H. Barber. (See illustration.)
-27¾	7	11	Orange River Colony	Count E. Hoyos.
27½	10	11½	Do.	C. S. Mann.
-27½	...	...	Victoria W., Cape Colony	South African Museum.
-26¾	7	14	?	Major W. Anstruther Gray.
26½	8	14½	South Africa . . .	Sir Edmund G. Loder, Bart.
-26¼	8½	15	Cape Colony . . .	Grahamstown Museum.
-26½	...	11	Orange River Colony	Abel Chapman.
-26	11¾	16¼	Do.	The Maclaine of Lochbuie.
-25½	11½	17	Do.	J. L. Drège.
25¼	7½	21¼	Do.	Major P. A. Cox.
25	6¾	15¼	Do.	A. Payne-Gallwey.
24½	8	16	Do.	W. A. Simpson Hinchliffe.
24½	7¼	18	Do.	Capt. C. Staveley.
24½	8	17¾	Do.	Major C. D. Vaughan.
24¼	7½	19½	Do.	G. B. Plumpton.
24	8½	15	Do.	Hon. Walter Rothschild.
24	8¼	13¼	Do.	C. D. Rudd.
23	7¾	17¼	Do.	A. H. Neumann.
23	7½	15	Do.	Bloemfontein Museum.
23	8	12½	Do.	R. T. Coryndon.
23	7¾	14¾	Do.	B. J. Fitzherbert.
22¾	7¼	15	Do.	F. C. Selous.
22¾	7½	12½	Do.	Sir H. J. Goold-Adams.
♀ 19¾	¹ 13½	10¾	Do.	Dr. W. P. Y. Bainbrigge.
♀ 16	4¾	11½	Do.	Bloemfontein Museum.
♀ 16	5	16¾	Do.	Major C. W. Gartside-Spaight.

- Owner's measurements.

¹ Circumference.



Head of Cape Duiker. From a specimen shot by Mr. F. C. Selous.

CAPE DUIKER (*Cephalophus grimmi*).

Puti of the Bechuanas.

Impunzi of the Matabili.

Gwapi of the Chinyanjas.

Nagi of the M'Kua.

Impungi of the Swazis and Zulus.

Imputi of the Basutos.

Gudda of the Hausas.

Mpewo of the Wagandas.

The Cape duiker, or "diver," is a southern representative of an extensive group of small or medium-sized antelopes, mostly confined to Africa, but also containing one genus and species from India. 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; and the upper cheek-teeth have low crowns, with square grinding surfaces. The African duikers have a single pair of horns, generally present in both sexes, and more or less hidden by a tuft of long hairs growing from the crown of the head; 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 the largest member of a group of three duikers, characterised by the horns (usually absent in the females) inclining upwards at a sharp angle above the plane of the profile of the nose. Other features of the sub-group are the long and pointed ears, the general yellowish or greyish colour, devoid of dark markings, save for a brown nose-spot. Although essentially a southern form, the Cape duiker, which measures about 23 inches at the shoulder, ranges on the west coast as far north as Angola, and on the eastern side of the continent to British East Africa and Somaliland. 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. Absence of water is, however, no bar to its existence, as it thrives in the heart of the Kalahari. It is occasionally hunted with foxhounds; the flesh is but moderately good.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$-6\frac{1}{2}$	...	...	Angola . . .	E. P. Cooper.
6	$1\frac{7}{8}$	...	?	J. Rosen.
-6	$2\frac{3}{8}$	$3\frac{1}{4}$	South Africa . . .	James J. Harrison.
$5\frac{7}{8}$	$1\frac{7}{8}$	$2\frac{1}{2}$	Do. . . .	W. A. Simpson Hinchliffe.
$-5\frac{3}{4}$	...	...	Do. . . .	W. J. Corder.
$-5\frac{3}{8}$	$2\frac{1}{2}$	$2\frac{1}{2}$	Do. . . .	Julius Jeppe.
$-5\frac{3}{8}$	$2\frac{1}{4}$	$2\frac{3}{8}$	Do. . . .	C. S. Mann.
$5\frac{1}{2}$	$2\frac{1}{8}$	$2\frac{7}{8}$	Selinya, Khama's country	F. C. Selous.
$5\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{3}{8}$	Cape Colony . . .	Mr. Justice Hopley.
$-5\frac{1}{2}$	$2\frac{1}{8}$	$2\frac{5}{16}$	?	B. Senior.
$-5\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{4}$	Cape Colony . . .	J. B. Wheelwright.
$5\frac{1}{4}$	$2\frac{1}{4}$	$1\frac{1}{2}$	Zululand . . .	Major L. O. Williams.
$-5\frac{1}{4}$	$2\frac{1}{2}$	$1\frac{3}{4}$	?	P. C. Keytel.
$-5\frac{1}{4}$	$2\frac{1}{8}$	2	Inyamonga, P. E. Africa	F. Vaughan Kirby.
$-5\frac{1}{8}$	$2\frac{1}{8}$	$1\frac{7}{8}$	Bredasdorp, C. Colony	Mr. Justice Hopley.
$5\frac{1}{8}$	2	$2\frac{3}{8}$	Transvaal . . .	H. T. and A. H. Glynn.
$5\frac{1}{8}$	$2\frac{5}{16}$	$2\frac{3}{8}$	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	$2\frac{1}{4}$	$2\frac{3}{8}$	Ngamiland . . .	Mervyn G. Williams.

- Owner's measurements.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
5	2 $\frac{1}{2}$	3 $\frac{1}{4}$	Northern Rhodesia	F. Smitheman.
♀ 4 $\frac{3}{4}$	2 $\frac{3}{8}$	2 $\frac{3}{4}$	?	P. C. Keytel.
4 $\frac{1}{2}$	...	2 $\frac{7}{8}$	Algoa Bay . . .	British Museum (F. C. Selous).
♀ 4	1 $\frac{3}{8}$	1 $\frac{1}{4}$	S.W. Africa . . .	Th. Rehbock.
♀ 3 $\frac{3}{8}$	1 $\frac{1}{2}$	1 $\frac{3}{8}$	Transvaal . . .	Julius Jeppe.

ABYSSINIAN DUIKER (*Cephalophus abyssinicus*).

Abyssinian name, *Midaku*.

Belonging to the same sub-group as the Cape duiker, and agreeing with the crowned duiker (*C. coronatus*) in size, this species differs from the latter by the general colour of the fur being greyish brown, instead of bright yellow. It was discovered by the traveller Rüppell, and its habits have been well described by Dr. W. T. Blandford in his *Geology and Zoology of Abyssinia*. It is perhaps only a race of the Cape species.

Distribution.—The highlands of Abyssinia.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
4 $\frac{1}{4}$	2 $\frac{1}{4}$	3	Harar . . .	D. P. MacGillivray.
4 $\frac{1}{2}$	2 $\frac{1}{4}$	1 $\frac{3}{4}$	Abyssinia . . .	W. F. Whitehouse.
4 $\frac{1}{2}$	2	2	Galla country . . .	Lord Hindlip.
4 $\frac{1}{8}$	2 $\frac{1}{8}$	1 $\frac{7}{8}$	Abyssinia . . .	P. H. G. Powell-Cotton.
4 $\frac{1}{2}$	2	1 $\frac{3}{4}$	Do. . . .	F. Gillett.
-3 $\frac{9}{16}$	2 $\frac{3}{16}$	2 $\frac{1}{8}$	Do. . . .	Prince A. de Lucinge.
3 $\frac{1}{2}$	2 $\frac{1}{4}$	2	Gondokoro . . .	Dr. A. MacCarthy Morrogh.
-3 $\frac{1}{2}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	Abyssinia . . .	Sir Victor Brooke's Collection.
-3 $\frac{3}{16}$	2	1 $\frac{1}{2}$	Galla country . . .	Viscount Edmond de Poncins.
2 $\frac{3}{4}$	1 $\frac{7}{8}$	1 $\frac{1}{4}$	Abyssinia . . .	British Museum.

- Owner's measurements.



Head of Blue Duiker.

BLUE DUIKER (*Cephalophus monticola*).*Ipiti* of the Zulu tribes.

In the great majority of the duikers, that is to say all except the three 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 sub-group characterised by the smoky-brown or blackish coloration, 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.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
2½	1¾	1½	Tushila Plain, B.C.A.	Hon. Walter Rothschild.
-2½	...	1½	Cape Colony	F. Vaughan Kirby.
-2¼	...	...	Knysna, Cape Colony	South African Museum.
2 1/16	1 1/16	1 7/8	Pondoland	J. Rosen.
-2 1/8	1 5/8	1 3/4	Knysna, Cape Colony	J. L. Drège.
-2 1/2	1 1/2	1 5/8	Do.	Mr. Justice Hopley.
2	..	1 3/4	Natal	F. C. Selous.
2	1 5/8	1 3/4	Benguela	G. W. Penrice.
-2	1 1/2	1 3/4	?	P. C. Keytel.
2	1 3/4	1 1/4	N. Rhodesia	L. De Fries.
1 5/4	1 5/8	1 3/8	Benguela	Hon. Walter Rothschild.
♀ 1 1/16	1 1/16	1 1/8	Knysna	Lieut. Hon. R. O. B. Bridgeman, R.N.

- Owner's measurements.

SUDAN BLUE DUIKER (*Cephalophus monticola æquatorialis*).

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
1½	1¾	1½	Sudan	Capt. C. Leigh.

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 Major Hamilton Smith in 1827.

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

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
1⅝	2⅓	2	Fanti	Hon. Walter Rothschild.

RED or NATAL DUIKER (*Cephalophus natalensis*).

Rooi-Bosch-bokje of the Boers. *Msumbi* of the Swazis and Malonga.
Mkumbi of the Zulus. *Izikupu* of the Basutos.
Chisimbi of the Lower Zambesi natives.

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, 17 inches) and completely uniform coloration, having no dark markings on either the face or body.

Distribution.—Natal, Transvaal, and Mashonaland (including all the forest and bush country of the East Coast), also seen by Messrs. F. Vaughan Kirby and James J. Harrison near the Lualwa River, Mozambique Province.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3⅞	2¾	2	?	Julius Jeppe.
3¾	2⅞	2¼	Shupanga Forest	F. Vaughan Kirby.
3⅝	3¼	3¼	Natal	C. S. Mann.
3⅞	2¾	2¼	?	J. Rosen.

- Owner's measurements.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
3 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{1}{8}$	Sabi Flats	James J. Harrison.
-3 $\frac{1}{4}$	2 $\frac{1}{2}$	2	?	P. C. Keytel.
-3 $\frac{1}{4}$	2 $\frac{7}{8}$	2 $\frac{3}{8}$	?	Julius Jeppe.
-3 $\frac{1}{4}$	2 $\frac{5}{8}$	2 $\frac{1}{4}$	Spitzkop	H. T. and A. H. Glynn.
¹ 3	2 $\frac{3}{4}$	...	N. Makualand	Hon. Walter Rothschild.
-♀ 2 $\frac{3}{4}$	1 $\frac{7}{8}$	1	Foothills of Kahlamba	F. Vaughan Kirby.
-♀ 1 $\frac{3}{4}$	1 $\frac{3}{4}$	$\frac{3}{4}$	?	P. C. Keytel.
♀ 1 $\frac{5}{8}$	...	1	Near Durban	F. C. Selous.

¹ Determination provisional.

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 Cameroons ; there being a northern and a southern race.

Length on front.	Girth.	Tip to Tip.	Locality.	Owner.
3 $\frac{1}{4}$	2 $\frac{1}{8}$	2	West Africa	Hon. Walter Rothschild.
2 $\frac{7}{8}$	2 $\frac{1}{4}$	1 $\frac{1}{4}$	^{N-T.} Sierra Leone	Lt.-Col. P. S. Wilkinson.

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.

- Owner's measurements.

YELLOW-BACKED DUIKER (*Cephalopus sylvicultor*).

This species is distinguished from most of the other members of the genus by its large size, coupled with its blackish coloration, and the presence of a yellowish crest on the back and a similarly coloured longitudinal patch on the rump. Height at shoulder, 34 inches. It is represented in N. Rhodesia by *C. coxi*.

Distribution.—The West Coast of Africa from Liberia to Angola.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
7	3½	...	Sierra Leone . . .	Capt. C. E. Palmer.
6⅞	3	3	N.E. Rhodesia . . .	Dr. Albert von Stephani.
6¾	...	4½	Fanti	British Museum.
6⅝	3⅜	3⅝	Luapulu River, N.E. Rhodesia	G. M. E. Leyer.
6¼	3½	...	Ashanti	C. Beddington.
5½	3⅜	4⅛	Gaboon	Sir Edmund G. Loder, Bart.
5½	3⅞	3½	Do.	Major W. Anstruther Gray.
5	3⅜	4¼	Angola	Hon. Walter Rothschild.
5	3⅜	4⅛	Do.	G. W. Penrice.
4¾	3¼	...	Johnston's Falls . . .	J. Yule.

Some of the above specimens are *C. coxi*.

HARVEY'S DUIKER (*Cephalopus 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.

Distribution.—East Africa.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
1 3⅝	3¼	...	Mau Forest, East Africa . .	Hon. Walter Rothschild.
3⅝	2⅞	2½	Do.	F. J. Jackson.
3½	2¾	2⅜	East Africa	Rear-Admiral R. A. J. Montgomerie.
2⅝	3⅞	1⅜	Do.	E. N. Buxton.
2	2	...	Kilimanjaro	F. W. Belt.

— Owner's measurements.

¹ *Cephalopus isaaci*.

RED-FLANKED DUIKER (*Cephalophus rufilatus*).

This species stands about 14 inches, and is orange-rufous in colour, with the front of the face, the dorsal stripe, 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.
$3\frac{7}{8}$	$2\frac{7}{8}$	$2\frac{5}{8}$	Gambaga, Gold Coast	British Museum (Capt. W. Giffard).
$3\frac{1}{2}$	$2\frac{1}{2}$	2	Nigeria . . .	Capt. P. A. Clive.
$3\frac{1}{2}$	$2\frac{5}{8}$	$4\frac{3}{8}$	Do. . . .	Hon. E. Stanley.
3	$2\frac{7}{8}$	$1\frac{1}{2}$	Okutu, S. Borgu .	Capt. B. R. M. Glossop.
$2\frac{7}{8}$	$2\frac{1}{2}$	$2\frac{3}{8}$	Lagos	Capt. W. A. Ross.
$2\frac{5}{8}$	$2\frac{1}{4}$	$1\frac{3}{4}$	Lokoja, Nigeria .	Lieut.-Col. P. S. Wilkinson.
$2\frac{5}{8}$	$2\frac{1}{2}$	$1\frac{3}{4}$	Nigeria	H. V. Venables Kyrke.
$-2\frac{5}{8}$	$2\frac{1}{2}$	...	Do.	A. Noel Woods.
$2\frac{7}{8}$	$2\frac{1}{2}$	$1\frac{1}{4}$	Lagos	C. Vyvyan.
$2\frac{1}{4}$	$2\frac{1}{8}$	$1\frac{7}{8}$	Togoland	Hon. Walter Rothschild.

- Owner's measurements.

CROWNED DUIKER (*Cephalophus coronatus*).

A species standing about 15 or 16 inches in height, of a bright yellowish fawn colour, showing a faint tinge of black.

Distribution.—West Africa.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{7}{8}$	Nigeria	Major J. A. Burdon.
$4\frac{1}{2}$	$2\frac{1}{2}$	$1\frac{1}{4}$	Do.	The late Capt. G. H. F. Abadie.
$4\frac{7}{16}$	$2\frac{1}{2}$	$1\frac{3}{8}$	Okutu, S. Borgu .	Capt. B. R. M. Glossop.
$4\frac{1}{8}$	$2\frac{1}{4}$	2	Nigeria	N. F. Bayne.
$4\frac{1}{8}$	$2\frac{1}{4}$	$2\frac{1}{4}$	Do.	Capt. W. D. Wright.
$4\frac{1}{8}$	$2\frac{1}{16}$	$2\frac{1}{4}$	Near Borgu, West Africa	Capt. N. C. Welch.
4	$1\frac{3}{4}$	1	Between Benue and Lake Tchad	Hon. Walter Rothschild.
$3\frac{9}{16}$	2	$1\frac{7}{8}$	Lokoja, Niger . .	Lieut.-Col. P. S. Wilkinson.



Frontlet and Horns of Four-horned Antelope.

FOUR-HORNED ANTELOPE or **CHOUSINGHA** (*Tetraceros quadricornis*).

This antelope is the Oriental representative of the African duikers, from which it is distinguished by the following features. Typically there are two pairs of horns, and the face-glands form deep slits on the sides of the face instead of a long naked line; the females being hornless. 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 unfrequently 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.		
5	...	...	...	...	...	Jhalawar . .	H.H. Maharaj Rana Bahadur of Jhalawar.
4½	2½	2½	1½	2½	1	Lulitpur . .	General Walker.
4½	2¼	2¾	2¼	3	...	?	Capt. J. C. B. Statham.
4¾	2½	2½	2¾	1½	2¾	?	Sir Edmund G. Loder, Bart.

- Owner's measurements.

RECORDS OF BIG GAME

Length of horns on front.		Circumference.		Tip to Tip.		Locality.	Owner.
Rear.	Fore.	Rear.	Fore.	Rear.	Fore.		
$-4\frac{1}{8}$	$1\frac{1}{2}$	...	...	...	..	?	J. D. Inverarity.
4	$2\frac{1}{2}$	$1\frac{7}{8}$	$1\frac{7}{8}$	3	$1\frac{1}{2}$	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.
$-3\frac{3}{4}$	...	...	...	...	...	?	Indian Museum.
$-3\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$1\frac{3}{4}$	$2\frac{3}{8}$	...	Central Provinces .	Lt.-Col. R. W. Mapleton.

- Owner's measurements.



Head of Four-horned Antelope.



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 fulvous or rufous fawn, scarcely more rufous on the sides than on the back. Height at the shoulder, 14 or 15 inches.

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

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$3\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{3}{8}$	?	Hon. Walter Rothschild.
$3\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{8}$	Abyssinia . . .	V. Bell.
3	1	1	Do. . . .	Sir Edmund G. Loder, Bart.
1^3	...	$1\frac{1}{8}$	Do. . . .	H. Boughton Leigh.
$2\frac{3}{4}$	...	$1\frac{3}{8}$	Do. . . .	P. H. G. Powell-Cotton.
$-2\frac{5}{8}$	$1\frac{1}{2}$	1	Do. . . .	J. B. Wheelwright.
$2\frac{3}{8}$	...	$1\frac{3}{4}$	Do. . . .	Sir Victor Brooke's Collection.
$2\frac{1}{2}$	$1\frac{1}{2}$	...	North Kassala . .	Col. Ralph Vivian.
$2\frac{1}{2}$	1	$1\frac{1}{4}$	?	P. C. Keytel.
$2\frac{3}{8}$	...	$1\frac{5}{8}$	?	British Museum.

— Owner's measurements.

¹ Determination provisional.



Skull of Phillips's Dik-dik.



Head of Swayne's Dik-dik.

SOMALI DIK-DIKS (*Madoqua swaynei*, *M. phillipsi*, and *M. guentheri*).

General native name, *Sakáro*.

Different districts of Somaliland are inhabited by the three species of dik-diks above named. The first of these is allied to Salt's dik-dik but is of smaller size; 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 under-mentioned Kirk's dik-dik, from which it is distinguished by the form of the nasal bones in the skull.

Height at shoulder about 14 inches. Weight, ♂ 6 lbs.;
♀ 5 lbs. (T. W. H. Clarke).

<i>Sakáro Guyn</i> (<i>Madoqua swaynei</i>).	<i>Distribution</i> .—	Berbera District.
<i>Sakáro Gol-Ass</i> (<i>Madoqua phillipsi</i>).	„	Northern Somaliland.
<i>Sakáro Gussuli</i> (<i>Madoqua guentheri</i>).	„	Plateau of Central Somaliland.

Length on front.	Girth.	Tip to Tip.	Owner.
¹ 3 $\frac{5}{8}$	1 $\frac{5}{8}$	2	Col. H. D. Olivier.
3 $\frac{1}{2}$	1 $\frac{1}{4}$	1 $\frac{5}{8}$	J. Kenneth Foster.
3 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{3}{4}$	W. W. Ashley.
¹ -3 $\frac{1}{4}$	...	1 $\frac{1}{4}$	C. V. A. Peel.

- Owner's measurements.

¹ *M. guentheri*.

Length on front.	Girth.	Tip to Tip.	Owner.
$3\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	Lieut.-Col. C. F. Blane.
$1\frac{1}{3}\frac{1}{8}$	...	$1\frac{3}{8}$	Julius Jeppe.
$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{3}{4}$	A. E. Pease.
$-3\frac{1}{8}$	...	...	J. Brander Dunbar.
3	...	1	Sir Edmund G. Loder, Bart.
-3	...	$1\frac{3}{4}$	Viscount Edmond de Poncins.
$-2\frac{1}{8}\frac{5}{8}$	$1\frac{1}{2}$	$1\frac{1}{4}$	Do.
$-2\frac{7}{8}$	$1\frac{1}{4}$	$1\frac{1}{2}$	The late Capt. J. Johnston-Stewart.
$2\frac{7}{8}$	$1\frac{3}{8}$	$1\frac{5}{8}$	Lord Delamere.
$2\frac{7}{8}$	$1\frac{1}{2}$	$1\frac{3}{8}$	Lord Hindlip.
$2\frac{1}{8}\frac{5}{8}$	$1\frac{1}{2}$	$\frac{7}{8}$	Lieut.-Col. E. G. Harrison.
$2\frac{3}{4}$	1	1	T. W. H. Clarke.
$2\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{1}{8}$	A. E. Butter.
$2\frac{3}{4}$	$1\frac{1}{2}$	...	C. Liddell.
$1\frac{2}{3}\frac{3}{4}$	...	$1\frac{1}{16}$	Major W. Anstruther Gray.
$2\frac{3}{4}$	$1\frac{1}{8}$	1	P. C. Keytel.
$1\frac{2}{3}$	$1\frac{1}{8}$	$1\frac{3}{4}$	Julius Jeppe.
$-2\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{4}$	F. Gillett.

- Owner's measurements.

¹ M. phillipsi.

The following are the dimensions of a specimen of *M. guentheri*:—

Length, $23\frac{1}{4}$. Height, $15\frac{1}{4}$. Horns, $2\frac{1}{2}$. Weight, $8\frac{1}{4}$ lbs.
Shot at Njemps, 26 : 9 : 96, by F. J. Jackson.



Kirk's Dik-dik.

KIRK'S DIK-DIK (*Madoqua 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. Of the other members of the group, *M. damarensis* differs by its superior size, and *M. guentheri* by the still greater development of the trunk. Weight about 7 lbs. They form the sub-genus *Rhynchotragus*.

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 $\frac{5}{8}$	1 $\frac{1}{8}$	Rift Valley . . .	C. Stuart Betton.
3 $\frac{1}{2}$	1 $\frac{3}{4}$	...	East Africa . . .	Prince P. Demidoff.
3 $\frac{7}{8}$	1 $\frac{3}{4}$	1 $\frac{5}{8}$	Do.	J. B. Wheelwright.
¹ 3 $\frac{3}{4}$	...	1 $\frac{1}{2}$	Do.	F. C. Selous.
3 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	Do.	Hon. Walter Rothschild.
3	1 $\frac{1}{2}$	1 $\frac{3}{4}$	E. of Lake Chomo .	Lord Hindlip.
3	...	1 $\frac{1}{2}$	East Africa . . .	F. J. Jackson.
¹ 2 $\frac{1}{8}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	?	Do.

- Owner's measurements.

¹ *M. cavendishi*.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$2\frac{1}{3}$	$1\frac{5}{8}$	$1\frac{3}{4}$	German East Africa	A. V. Willcox.
$2\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	Tana Valley . .	Capt. C. Hankey.
$2\frac{3}{4}$	...	$1\frac{5}{8}$	East Africa . .	British Museum.
$2\frac{3}{4}$	...	$1\frac{3}{4}$	Lake Elmeteita .	Rhys Williams.
$1\frac{2}{3}$	..	$1\frac{3}{4}$	Lake Baringo . .	Do.

¹ M. cavendishi.

DAMARA DIK-DIK (*Madoqua damarensis*).

Characteristics mentioned under heading of the preceding species.

Distribution.—Damaraland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$-3\frac{1}{4}$	$1\frac{1}{2}$	$1\frac{1}{2}$	?	P. C. Keytel.
-3	...	...	?	Capt. M. Jurich.
$-2\frac{5}{8}$	$1\frac{5}{8}$	$1\frac{5}{8}$	Omararu . . .	J. B. Wheelwright.
$-2\frac{5}{8}$	$1\frac{5}{8}$	$1\frac{7}{8}$	Do. . . .	Capt. W. Jardine.
$-2\frac{1}{2}$	...	...	Damaraland . . .	South African Museum. (Type specimen.)
$-2\frac{1}{2}$	$1\frac{1}{2}$	$1\frac{1}{2}$	Do. . . .	A. Ohlsson.
2	...	$1\frac{1}{8}$	Angola	South African Museum.

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

Further information is desirable as to the right of this form to specific distinction.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$3\frac{3}{8}$	$1\frac{3}{8}$	$1\frac{1}{2}$	Basa Land . . .	Hon. Walter Rothschild.
$2\frac{1}{10}$	$1\frac{3}{8}$	$1\frac{1}{8}$	Abyssinia . . .	Do.

- Owner's measurements.



Head of Cape Oribi from Pungwe, South-East Africa.

CAPE ORIBI (*Oribia scoparia*).

Also known as *Oribia oribi*.

Inla of the Swazis and Zulus. *Pulukudukamani* of the Basutos.
Kamunda of the Barotse and Batoka natives.

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 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 Cape species the horns of the bucks are comparatively smooth and slender, with only their basal two inches slightly ridged; the tail being tufted and moderately bushy, with its terminal two-thirds black. Height at shoulders, 24 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.
-7½	2¾	2⅝	Zomba, B. C. A.	D. MacAlpine.
7⅜	2⅝	2¼	Angola	G. W. Penrice.
6½	...	2¾	Near Ladysmith	Lieut.-Col. P. J. R. Crampton.
-6½	..	1¾	Batoka Plateau	E. Folley.
-6½	...	3¾	?	J. L. Drège.
6¼	2¼	...	E. Griqualand	British Museum (J. Ff. Darling).
6	2½	2¼	Spitzkop	H. T. and A. H. Glynn.
-6	...	...	Natal	South African Museum.
6	2	2⅝	Angola	C. H. Pemberton.
6	...	2⅝	Do.	Do.
-6	...	2⅝	Do.	E. P. Cooper.
-5⅜	2	2½	?	Mr. Justice Hopley.
5¾	2⅝	2⅝	British Central Africa	J. H. Hayes.
5¾	2	3¼	Barotsiland	H. Timmins.
5¾	2	2¼	Do.	Lady Sarah Wilson.
5⅝	2	2¾	Bengueolo	F. Smitheman.
5⅝	2½	1⅞	Transvaal	F. R. N. Findlay.

- Owner's measurements.



Skulls of Abyssinian Oribi. Shot by P. H. G. Powell-Cotton.

ABYSSINIAN ORIBI (*Oribia montana*).

Fäckō of the Abyssinians.

Mori or *Lōyīk*. of the Dinkas.

Very similar in most characters to the Cape species, but with a shorter and less bushy tail, the tip of which has only a few sparse black hairs. Height at shoulder, $22\frac{1}{2}$ 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.

Viscount Edmond de Poncins states that a fine male weighed 30 lbs. 13 oz., and stood $19\frac{1}{2}$ inches at the shoulder.

Distribution.—Abyssinia and Bogosland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$5\frac{3}{8}$	2	$2\frac{3}{8}$	Abyssinia . . .	Julius Jeppé.
$5\frac{1}{2}$	$2\frac{1}{2}$	$2\frac{3}{4}$	?	Capt. R. Meinertzhagen.
$5\frac{1}{4}$	2	$2\frac{3}{8}$	Sudan . . .	Brig.-Gen. B. T. Mahon.
5	$2\frac{1}{2}$	$2\frac{1}{4}$	Galla country . .	Lord Hindlip.
5	...	$2\frac{1}{2}$	Abyssinia . . .	Sir Edmund G. Loder, Bart.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{7}{8}$	$2\frac{3}{8}$	2	Hawash, Abyssinia	Prince A. de Lucinge.
$4\frac{3}{4}$	$2\frac{3}{8}$	$2\frac{1}{4}$	White Nile	Major C. J. Hawker.
$4\frac{5}{8}$	2	2	Sudan	Prince Colloredo Mansfeld.
$4\frac{5}{8}$	2	$2\frac{5}{8}$	Gondokoro	Dr. A. MacCarthy Morrogh.
$4\frac{1}{2}$	$1\frac{3}{4}$	$2\frac{1}{8}$	White Nile	C. Cookson.
$4\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{4}$	White Nile	Capt. the Hon. M. P. Macnaghten.
$4\frac{1}{2}$	2	3	Do.	Capt. P. E. Vaughan.
$4\frac{1}{2}$	2	$2\frac{1}{8}$	Do.	Capt. A. C. Jeffcoat.
$4\frac{1}{2}$	2	2	Sudan	Major J. H. Rivers.
$4\frac{1}{2}$	$1\frac{1}{2}$	$2\frac{1}{2}$	White Nile	H. Cookson.
$4\frac{1}{2}$	2	$1\frac{3}{4}$	Uganda	Douglas M. Douall.
$4\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{1}{2}$	Jubaland	Lieut.-Col. E. G. Harrison.
$4\frac{1}{2}$	2	2	Hawash, Abyssinia	Viscount Edmond de Poncins.
$4\frac{1}{2}$	...	$1\frac{7}{8}$	Abyssinia	Major W. Anstruther Gray.
$4\frac{3}{8}$	2	$2\frac{3}{8}$	Do.	P. H. G. Powell-Cotton.
$4\frac{3}{8}$	$2\frac{1}{2}$	$1\frac{3}{4}$	White Nile	Major R. M. Sanders.
$4\frac{3}{8}$	$1\frac{3}{4}$	$2\frac{3}{8}$	Do.	C. Logan.
$4\frac{3}{8}$	$1\frac{3}{4}$	$2\frac{1}{2}$	Dombelas, Abyssinia.	British Museum.

- Owner's measurements.

WEST AFRICAN ORIBI (*Oribia nigricaudata*).

The present species is 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, 20 inches.

Distribution.—The open country of Senegal and Gambia.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$4\frac{3}{4}$	$2\frac{1}{2}$	$2\frac{1}{4}$	Lake Tchad	S. B. B. Dyer.
$4\frac{3}{16}$	$1\frac{7}{8}$	2	Nigeria	F. Dwyer.
$4\frac{1}{8}$	$1\frac{3}{4}$	$2\frac{1}{4}$	Do.	H. V. Bastow.
4	$1\frac{3}{4}$	2	Do.	Capt. H. A. Porter.
4	...	$2\frac{3}{4}$	Do.	Major J. A. Burdon.
4	$1\frac{3}{4}$	$2\frac{3}{4}$	Do.	S. C. Peck.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner
3 $\frac{7}{8}$	1 $\frac{5}{8}$	2 $\frac{1}{4}$	Nigeria . . .	Capt. F. P. Crozier.
3 $\frac{1}{2}$	1 $\frac{7}{8}$	1 $\frac{3}{4}$	Do. . . .	Major A. H. Festing.
3 $\frac{3}{4}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	Borgu	The late Capt. G. H. F. Abadie.
3 $\frac{5}{8}$	1 $\frac{5}{8}$	2 $\frac{1}{4}$	Nigeria . . .	Lieut.-Col. P. S. Wilkinson.

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

Still imperfectly known, but distinguished from all the 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. Discovered in 1887 by Mr. J. G. Haggard.

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 $\frac{1}{4}$	3 $\frac{1}{4}$	Do.	Capt. R. Meinertzhagen.
6	2 $\frac{1}{2}$	2 $\frac{3}{8}$	Do.	H. Twyford.
5 $\frac{3}{4}$	2 $\frac{1}{2}$	2 $\frac{1}{4}$	Do.	R. Wahrmann.
-5 $\frac{3}{4}$	2 $\frac{3}{4}$	2 $\frac{5}{8}$	Tana River	Lieut.-Col. E. G. Harrison.
5 $\frac{3}{4}$	2 $\frac{1}{2}$	2	Do.	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 $\frac{3}{8}$	2 $\frac{1}{2}$	Do.	Julius Jeppe.
5 $\frac{3}{8}$	...	2 $\frac{3}{8}$	Do.	Dr. A. Paget.
¹ 5 $\frac{1}{8}$	2 $\frac{1}{4}$	2	East Central Africa . . .	Hon. Walter Rothschild.
¹ 5 $\frac{1}{8}$	1 $\frac{1}{2}$	2 $\frac{3}{8}$	North end of Lake Albert . .	Col. Trevor Ternan.
4 $\frac{1}{2}$	2 $\frac{3}{8}$	3	East Africa	L. Aylmer.

- Owner's measurements.

¹ Determination provisional.



Head of Zanzibar Suni.

ZANZIBAR SUNI (*Nesotragus moschatus*).

The two elegant little antelopes included in the genus *Nesotragus* 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, and extending at least as far as the back of the head, as also by the large size of the open spaces in the skull below the sockets of the eyes, and by the nasal bones. In the present species the horns are short and slender, and the colour, inclusive of the tail-tip, is fawn-grey. Height at shoulder about 13 inches.

Distribution.—Islets near Zanzibar and adjacent coast from Kilimanjaro to Mozambique.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$-3\frac{7}{8}$	$1\frac{7}{8}$	$1\frac{5}{8}$	Zanzibar	Dr. Albert von Stephani.
$-3\frac{3}{8}$	...	$1\frac{5}{8}$	Do.	F. C. Selous.
$3\frac{1}{4}$	$1\frac{1}{2}$	2	Do.	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).
$-3\frac{1}{8}$	...	$1\frac{1}{8}$	Do.	Lieut.-Col. E. G. Harrison.
$2\frac{1}{8}$	$1\frac{3}{8}$	$1\frac{5}{8}$	Kikuyu	F. J. Jackson.
$2\frac{5}{8}$	$1\frac{3}{8}$	$1\frac{3}{4}$	Do.	J. R. Bradley.
$2\frac{5}{8}$	$1\frac{1}{4}$	$1\frac{3}{4}$	Zanzibar	Sir Victor Brooke's Collection.

— Owner's measurements.



Skull and Horns of Livingstone's Suni.

LIVINGSTONE'S SUNI (*Nesotragus livingstonianus*).*Lumswi* of the Shupanga.*Intilengana* of the Amatonga.

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

Two specimens killed by 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 $\frac{1}{8}$ "
" height at croup	14 $\frac{3}{4}$ "	14 $\frac{1}{4}$ "
Girth of neck	6 $\frac{1}{2}$ "	6 "
" behind the shoulder	14 $\frac{1}{8}$ "	13 $\frac{5}{8}$ "

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

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
5	1 $\frac{7}{8}$	2 $\frac{1}{4}$	?	J. Rosen.
4 $\frac{5}{8}$	2	2 $\frac{1}{4}$	?	Julius Jeppe.
4 $\frac{1}{2}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	Shupanga Forest	F. Vaughan Kirby.

— Owner's measurements.

Length on front.	Circumference.	Tip to Tip	Locality.	Owner.
$-4\frac{1}{2}$	...	$1\frac{3}{4}$	?	F. J. Newnham.
$4\frac{3}{8}$	$2\frac{1}{8}$	...	Gungunyana's country	British Museum (H. T. Glynn).
$-4\frac{3}{8}$	...	...	Delagoa Bay . . .	F. H. Barber.
$-4\frac{1}{4}$	...	...	?	O. R. Dunell.
$-4\frac{1}{4}$	...	$1\frac{3}{4}$	?	P. C. Keytel.
$4\frac{5}{16}$	...	$1\frac{7}{8}$	Inhambani . . .	Major J. S. Hamilton.
$4\frac{1}{8}$	...	1	Delagoa Bay . . .	F. C. Selous.
$-4\frac{1}{8}$	...	2	Do. . . .	J. B. Wheelwright.
$3\frac{3}{4}$	$1\frac{1}{2}$	$1\frac{3}{4}$	Zambesi	Sir Edmund G. Loder, $\frac{5}{2}$ Bart.
$31\frac{1}{8}$	$1\frac{3}{4}$	$2\frac{5}{16}$	Delagoa Bay . . .	Hon. Walter Rothschild.

- Owner's measurements.



Head of Grysbok, from a specimen shot by Mr. F. C. Selous.

GRYSBOK (*Rhaphiceros melanotis*).

Isikupi of the Basutos.

Kulu of the Makua.

From the other members of the oribi group the grysbok and its cousin the steinbok are readily distinguished by the horns rising nearly vertically from the skull, in which the open spaces below the eye-sockets are unusually small. Curiously enough, the grysbok retains the lateral hoofs, which have disappeared in the steinbok. In addition to this feature, the former is distinguished by the fur showing a large admixture of white, instead of being uniformly coloured. Height at shoulder, 22 inches. Weight, 24 lbs.

Distribution.—South Africa, extending as far north as the Zambesi 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 $\frac{5}{8}$	...	1 $\frac{3}{4}$	Do.	P. C. Keytel.
4 $\frac{1}{2}$	1 $\frac{3}{4}$	2	Do.	Lieut.-Col. H. J. G. Lloyd.
4	...	...	Caledon, C.C. . . .	South African Museum.
3 $\frac{3}{4}$	1 $\frac{3}{4}$	2 $\frac{1}{4}$	Knysna, C.C. . . .	Lieut. 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. (See illustration.)
3 $\frac{1}{4}$	1 $\frac{1}{2}$	2 $\frac{3}{4}$	Knysna, C.C. . . .	Mr. Justice Hopley.
3 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	Do.	Sir H. J. Goold-Adams.

— Owner's measurements.



Head of Steinbok.

STEINBOK (*Rhaphiceros campestris*).*Ishak* of the Swahilis.*Impulupudi* of the Basutos.*Ingaina* of the Swazis.*Phuduhudu* of the Bechuanas.*Timba* of the Barotse and Batoka natives.*Umgwena* of the Matabili.

As mentioned above, 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, and frequently with the tip of the muzzle and a horseshoe-mark on the crown brown. Height at withers about $19\frac{1}{2}$ inches. Weight about 25 lbs.

Distribution.—Africa south of the Zambesi on the east, and the Cuneni on the west; northwards of the Tana to Nyasaland represented by Neumann's steinbok (*R. campestris neumanni*), distinguished by the absence of dark markings on the head. Probably owing to its small size, the steinbok has managed to escape the fate that has befallen so many of the 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 thus exist in the heart of the Kalahari, where water may not occur for a distance of fully fifty miles.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-6 $\frac{3}{8}$	...	...	Graaf Reinett . . .	F. H. Barber.
6	2	2 $\frac{1}{4}$	N. Transvaal . . .	Hon. Walter Rothschild.
-5 $\frac{1}{8}$	...	...	Natal	C. S. Mann.
-5 $\frac{3}{8}$	...	...	Kikumbulin	W. Russell Bowker.
-5 $\frac{3}{8}$	1 $\frac{7}{8}$	3	?	Mr. Justice Hopley.
5 $\frac{1}{8}$	...	2 $\frac{3}{8}$	Near Middelburg . . .	Capt. E. H. E. Abadie.
-5 $\frac{3}{8}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	?	J. Whitaker.
-5 $\frac{3}{8}$	2	1 $\frac{1}{4}$	?	Julius Jeppe.
1 $\frac{5}{8}$	...	1 $\frac{9}{10}$	Kimberley	F. C. Selous.
-5 $\frac{1}{2}$	...	1 $\frac{3}{4}$	East Africa	C. Steuart Betton.
-5 $\frac{1}{2}$	...	3 $\frac{1}{2}$	Do.	Capt. M. M'Neill.
5 $\frac{7}{10}$	...	2 $\frac{9}{10}$	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. Plumptre.
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.	Lord R. Wellesley.
-5 $\frac{1}{4}$	...	...	?	South African Museum.
-5 $\frac{1}{4}$	1 $\frac{3}{8}$	2 $\frac{7}{8}$	Cape Colony	F. R. N. Findlay.
5 $\frac{1}{8}$	1 $\frac{3}{4}$	1 $\frac{7}{8}$	East Africa	F. C. Selous.
5	1 $\frac{5}{8}$	2 $\frac{1}{2}$	Do.	Lt. E. W. Roberts, R.N.

- Owner's measurements.

¹ Killed with hounds.



Skull and Horns of Sharpe's Steinbok.

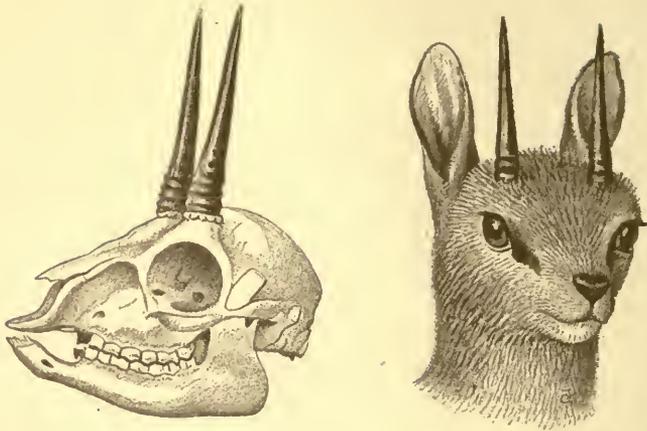
SHARPE'S STEINBOK (*Rhaphiceros sharpei*).

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 Barotsiland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$1\frac{1}{6}$	$1\frac{5}{8}$	$1\frac{3}{8}$	Barotsiland . . .	Dr. Kirkman, South African Museum.
$1\frac{7}{10}$	$1\frac{1}{4}$	$2\frac{1}{8}$	N.W. Rhodesia . . .	L. De Fries.
$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{3}{8}$	Do.	R. C. Forster.
$1\frac{1}{4}$	$1\frac{1}{4}$	$1\frac{5}{8}$	N.E. Rhodesia . . .	Hon. Walter Rothschild.

— Owner's measurements.



Skull and Head of Klipspringer, from specimens shot in Somaliland by
Lieut.-Col. H. G. C. Swayne.

The KLIPSPRINGER (*Oreotragus saltator*).

Alakud of the Somalis.

Chipomco of the Chilalas.

Chinkomo of the Chinyanjas.

Ingululu of the Makalakas.

Ikumi of the Basutos.

Klipbok of the Boers.

Ligoka of the Zulus and Swazis.

Njerere in the Batoka country.

Sassa of the Abyssinians.

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 Abyssinia. The species has

been divided into several local forms, the typical southern race having relatively short ears, with little black on them. To bag these exceedingly active and shy little antelopes, the sportsman, especially in the steep mountain ranges of Cape Colony, must be prepared for a long and difficult stalk under a blazing sun. Except when they require its hair for stuffing saddles, the Boers leave the klipspringer alone; which is doubtless one reason that it is still comparatively abundant. Its venison is of excellent quality.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
$5\frac{3}{8}$	$2\frac{1}{8}$	$2\frac{7}{8}$	Mashonaland . . .	The late H. H. Eyre.
$5\frac{1}{8}$	$2\frac{1}{8}$	$2\frac{5}{8}$	Transvaal . . .	F. Vaughan Kirby.
5	$2\frac{1}{4}$	$3\frac{1}{4}$	Do. . . .	Hon. Walter Rothschild.
$4\frac{1\frac{1}{2}}{6}$	$2\frac{1}{4}$	...	?	J. Rosen.
$-4\frac{5}{8}$	$2\frac{1}{4}$	$2\frac{1}{2}$	Transvaal . . .	Julius Jeppe.
$-4\frac{5}{8}$	$2\frac{1}{2}$	$3\frac{7}{8}$	Do. . . .	Capt. J. S. Topping.
$4\frac{1}{2}$	$2\frac{5}{16}$	$2\frac{1}{16}$	Witberg, Cape Colony .	H. A. Bryden.
$4\frac{1}{2}$	2	$3\frac{1}{4}$	East Africa . . .	E. Gedge.
$4\frac{1}{2}$	$2\frac{1}{4}$	$2\frac{3}{8}$	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.
$-4\frac{1}{4}$	$3\frac{3}{8}$	$2\frac{1}{2}$	South Africa . . .	A. Ohlsson.
$-4\frac{1}{4}$	$1\frac{5}{8}$	$2\frac{7}{8}$	Do. . . .	Mr. Justice Hopley.
$4\frac{1}{4}$	$2\frac{1}{4}$	$2\frac{5}{8}$	Somaliland . . .	R. A. M'Clymont.
$4\frac{1}{8}$	2	$2\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
$4\frac{1}{8}$	$2\frac{1}{2}$	$1\frac{3}{4}$	North Nyasaland . . .	James Yule.
4	$1\frac{1}{2}$	2	East Africa . . .	Lord Delamere.
4	$1\frac{7}{8}$	$2\frac{1}{2}$	Do. . . .	A. H. Wheeler.
4	$2\frac{1}{8}$	$1\frac{1}{4}$	Matabililand . . .	W. W. Ashley.
4	$2\frac{1}{2}$	$1\frac{7}{8}$	South Africa . . .	H. and C. Beddington.
$3\frac{7}{8}$	$1\frac{7}{8}$	$2\frac{1}{4}$	Abyssinia . . .	P. H. G. Powell-Cotton.
$3\frac{3}{4}$	...	$1\frac{7}{8}$	Do. . . .	British Museum.

- Owner's measurements.



Frontlet and Horns of the Waterbuck.

The WATERBUCK (*Cobus ellipsiprymnus*).

Chuzu in the Chilala and Chizenga countries. *M'dongoma* or *Matutwi* in the Barotse country.

Kring-gaat of the Dutch. Swahili name, *Kuru*.

Li Tumogha of the Matabili. *Tumoga* of the Bechuanas.

Na'Toro of the 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, no 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. Never, apparently, very abundant, this handsome antelope, whose head and horns form one of the chief prizes of the South African hunter, has had its range much curtailed of late years. Its present strongholds are the unhealthy districts between the Sabi and Zambesi, the affluents of the latter river, and the Chobi, Okavango, and other rivers above Lake Ngami.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
36 $\frac{1}{4}$	8 $\frac{3}{4}$	20 $\frac{1}{4}$	Delagoa Bay . . .	F. H. Barber. (See illustration.)
-35 $\frac{1}{4}$	9	14	?	Mr. Justice Hopley.
-34 $\frac{1}{2}$	...	...	Limpopo Valley, S.E. Africa	H. T. and A. H. Glynn.
33 $\frac{1}{2}$	9 $\frac{1}{4}$	21 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.
-33 $\frac{1}{2}$	10 $\frac{3}{8}$	21 $\frac{3}{8}$	Do.	F. Vaughan Kirby.
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.
-33	8 $\frac{3}{4}$	17 $\frac{1}{4}$	Do. . . .	A. Ohlsson.
-33	...	...	Lake Ngami . . .	South African Museum.
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. Weston Jarvis.
32 $\frac{1}{2}$	9 $\frac{1}{2}$	29 $\frac{1}{2}$	Barotsiland . . .	R. T. Coryndon.
31 $\frac{3}{4}$	9 $\frac{1}{4}$	24	Zululand . . .	Major L. O. Williams.
-31 $\frac{3}{4}$	8 $\frac{1}{4}$	21 $\frac{3}{8}$	North of Pungwe . . .	Count E. Hoyos.
31 $\frac{1}{2}$	9 $\frac{1}{4}$	13 $\frac{1}{4}$	P. E. Africa . . .	J. Pinto Leite.

- Owner's measurements.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-31½	9	17	?	Julius Jeppe.
-31½	...	16¾	Batoka Plateau . . .	S. M. L. O'Keefe.
31¼	10½	13¾	Pungwe	Earl of Dunmore.
31¼	9¾	19¼	?	Sir Edmund G. Loder, Bart.
31	9½	22	Zululand	R. D. Talbot.
31	8¾	32	Zambesi	R. H. Storey.
-31	9	...	Transvaal	Abel Chapman.
31	9½	22	Mashonaland	F. C. Selous.
-31	9¾	17	E.C. Africa	James J. Harrison.
30¾	9¼	24¼	Ngamiland	Mervyn G. Williams.
30¾	8	23¼	Pungwe	Major Lord Douglas Compton.
30½	8¾	25	B.C. Africa	S. Robins.
-30½	9½	11¼	Komati River, S. Africa .	Count E. Hoyos.
-29¾	...	...	Somaliland	Dr. Donaldson Smith.
-29 ⁹ / ₁₆	9 ⁷ / ₁₆	19 ¹¹ / ₁₆	Danakil	Prince A. de Lucinge.
-29½	9½	14	East Africa	Lieut. A. A. Ellison, R.N.
29	8½	32¾	Do.	Rhys Williams.
29	9½	26	Do.	E. Gedge.
29	9½	16½	Do.	Col. W. H. Williams.
28¾	8½	23	Lake Baringo	H. Hyde-Baker.
27¾	8	18	Somaliland	A. E. Butter.

- Owner's measurements.



Skull and Horns of Defassa Waterbuck, from a Semliki specimen.

DEFASSA WATERBUCK (*Cobus defassa*).

Gürümes of the Gallas.

Tambiir of the Dinkas.

Nsama of the Wagandas.

Katambou of the Sudanese.

Distinguished from the common waterbuck (*C. ellipsiprymnus*) by the presence of a large white patch on the lower part of the buttocks, instead of a white elliptical ring extending higher up. Four more or less distinct local races of this species may be recognised. First, the West African defassa, or sing-sing (*C. defassa unctuosus*), of Senegal and

Gambia, characterised by its rufous colour and the small amount of white in the region of the eye. Second, Crawshay's defassa (*C. defassa crawshayi*), from British Central Africa, with a dusky coloration. Third, the Angola defassa (*C. defassa penricei*), from the interior of Benguela, Angola, in which the colour is so dark as to be almost black. And, fourth, the Abyssinian defassa (*C. defassa typicus*), extending from Western Abyssinia through Sennar, Kordofan, and the valley of the White Nile to Uganda and British and German East Africa, in which the ears are longer and more pointed, and there is more white in the region of the eye than in the other races; the general colour being rufous. These four races are frequently regarded as distinct species, but they are so evidently local modifications of a single variable form that it is preferable to include them under a single specific heading.

A.—ABYSSINIAN DEFASSA (*Cobus defassa typicus*).

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
¹ -35½	...	...	Near Toru	Major C. G. H. Sitwell.
34	9¾	13¾	Uganda	J. Rosen.
32½	8¾	20½	Do.	The late Capt. J. A. Whittle.
32¼	8	20½	Sudan	Brig.-Gen. B. T. Mahon.
32	9	20	Do.	Major C. S. Cumberland.
32	10	16½	Do.	Capt. H. S. Toppin.
31¾	8¾	16½	Do.	Capt. J. P. V. Hawkesley.
31½	8	15¼	Do.	F. W. Greswolde-Williams.
31¾	8	20¾	Do.	S. H. Whitbread.
31¾	9	21	Semliki Valley	Capt. R. A. Markham.
31¼	9½	21	Gondokoro	Capt. A. W. Jennings Bramley.
-31¼	8½	31½	Sudan	Capt. F. A. Dickinson.
31	8½	14¾	Do.	Lieut.-Col. J. W. Yardley.
30¾	8½	34	Do.	W. F. Wailes-Fairbairn.
30½	8½	18	Do.	Capt. H. S. Logan.
30½	8	15	Do.	C. Logan.
30½	8¾	25	East Africa	Earl of Warwick.
30½	8¼	19½	Sudan	Major R. M. Sanders.

- Owner's measurements.

¹ Mr. F. R. Hicks favours me with this measurement.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-30 $\frac{1}{8}$	8 $\frac{3}{4}$	18 $\frac{7}{8}$	Sudan	Sir W. Garstin.
30	8 $\frac{1}{4}$	18	Do.	R. M'D. Hawker.
30	8 $\frac{1}{2}$	22	Do.	W. N. McMillan.
30	8 $\frac{1}{2}$	21	Do.	Capt. G. S. Nickerson.
29 $\frac{3}{4}$	8 $\frac{1}{2}$	21 $\frac{1}{2}$	East Africa	F. C. Havemeyer.
29 $\frac{3}{4}$	8 $\frac{3}{4}$	15 $\frac{1}{4}$	Sudan	Capt. A. J. B. Percival.
29 $\frac{1}{2}$	8 $\frac{3}{4}$	17	Do.	Capt. C. Leigh.
29 $\frac{1}{2}$	8 $\frac{3}{4}$	18 $\frac{5}{8}$	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 $\frac{3}{8}$	8 $\frac{5}{8}$	29 $\frac{3}{8}$	Do.	Count T. Palfy.
29 $\frac{1}{4}$	9	18 $\frac{3}{4}$	East Africa	Lord Hindlip.
29 $\frac{1}{4}$	8	17 $\frac{1}{2}$	Sudan	Douglas M'Douall.
-29 $\frac{1}{4}$	8 $\frac{5}{8}$	17	Lake Abaya	O. Neumann.
29	8	18 $\frac{1}{2}$	Sudan	Capt. G. L. Cameron.
29	8 $\frac{1}{2}$	15 $\frac{3}{4}$	White Nile	G. H. Cheetham.
29	8 $\frac{3}{4}$	21 $\frac{1}{2}$	British East Africa	Major E. J. Tickell.
29	8	16 $\frac{5}{8}$	Abyssinia	P. H. G. Powell-Cotton.
-29	8	6 $\frac{1}{2}$	Do.	Julius Jeppé.
29	8 $\frac{1}{2}$	20 $\frac{3}{4}$	Abyssinian Sudan	Prince Colloredo Mansfeld.
29	8	28 $\frac{1}{2}$	East Africa	H. C. Phipps.
28 $\frac{3}{4}$	9	19 $\frac{1}{2}$	Sudan	Col. A. Colville.
28 $\frac{3}{4}$	8 $\frac{1}{2}$	17 $\frac{1}{4}$	Do.	Count E. Hoyos.
28 $\frac{3}{4}$	9 $\frac{1}{4}$	11 $\frac{3}{4}$	Do.	C. Bulpett.
28 $\frac{1}{2}$	9	19	Uganda	P. B. Vander-Byl.
28 $\frac{1}{2}$	8	22 $\frac{3}{4}$	White Nile	Major C. E. Wilson.
28 $\frac{1}{2}$	8 $\frac{3}{4}$	20	Do.	Major C. J. Hawker.
28 $\frac{1}{4}$	9 $\frac{1}{4}$	17 $\frac{1}{4}$	Abyssinia	A. E. Butter.
28 $\frac{1}{4}$	8 $\frac{1}{4}$	19 $\frac{1}{2}$	White Nile	E. H. Goschen.
28	8 $\frac{1}{2}$	14 $\frac{1}{4}$	Do.	Capt. A. C. Jeffcoat.
28	7 $\frac{3}{4}$	15	Do.	Col. W. H. Sitwell.

- Owner's measurements.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
28	7 $\frac{3}{4}$	18 $\frac{1}{2}$	White Nile . . .	C. Adeane.
28	8 $\frac{1}{4}$	9 $\frac{1}{2}$	Do. . . .	W. D. James.
28	8 $\frac{1}{2}$	12 $\frac{3}{4}$	Wadelai . . .	Major M. L. Carleton.
28	8 $\frac{1}{2}$	15	East Africa . . .	A. H. Wheeler.
27 $\frac{7}{8}$	7 $\frac{1}{2}$	30	Do. . . .	Sir Robert Harvey, Bart.
27 $\frac{1}{4}$	8 $\frac{1}{2}$	15 $\frac{1}{4}$	Do. . . .	C. Craig.
27 $\frac{1}{2}$	8 $\frac{7}{8}$	19 $\frac{1}{2}$	Do. . . .	J. K. Baas.
27 $\frac{1}{2}$	9	8 $\frac{1}{2}$	Do. . . .	W. W. Ashley.
27 $\frac{1}{2}$	...	...	Do. . . .	R. J. Church.
27 $\frac{1}{2}$	9 $\frac{1}{4}$	22 $\frac{3}{4}$	Do. . . .	G. L. Harrison.

B.—CRAWSHAY'S DEFASSA (*Cobus defassa crawshayi*).

Idcitrae of the Barotsi

Ingonduma of the Matokos.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
29	9	22	Lake Mweru . . .	Hon. Walter Rothschild.
24 $\frac{1}{2}$	8 $\frac{3}{8}$	13	N.W. Rhodesia . . .	R. T. Coryndon.
23 $\frac{3}{4}$	8	10 $\frac{3}{4}$	Do. . . .	A. L. Francis.
23 $\frac{1}{2}$	8	11 $\frac{3}{4}$	Do. . . .	R. C. Forster.
23 $\frac{1}{4}$	8 $\frac{1}{2}$	13	Do. . . .	F. V. Worthington.
23 $\frac{1}{4}$	8	13 $\frac{3}{4}$	Do. . . .	Julius Jeppe.
23	9	13 $\frac{1}{2}$	N.E. Rhodesia . . .	H. Cookson.
22 $\frac{3}{4}$	8	17 $\frac{1}{2}$	Do. . . .	James Yule.

C.—WEST AFRICAN DEFASSA, or SING-SING (*Cobus defassa unctuosus*).*Gumbasa* of the Hausas.

Height at shoulder, 47 to 48 ins.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
31½	10¼	19¾	Sierra Leone	C. Cary Barnard.
29½	7¼	23	Nigeria	Lieut.-Col. P. S. Wilkinson.
29½	8¼	17½	Do.	R. Marmon.
27¾	8	15	Gambia	H. North.
27⅝	8¼	17¼	Nigeria	W. F. Gowers.
27½	8	9	Do.	A. C. Aubin.
27	8½	15¼	Do.	K. V. Elphinstone.
26½	8	13¾	Do.	A. Noel Woods.
26	7½	20	Do.	J. C. Parker.
25⅝	6⅝	18	Gambia	H. L. Stephen.
25½	7¾	13¾	Nigeria	Capt. H. A. Porter.
25½	7	18½	Do.	Capt. J. F. Loder-Symonds.
25½	8½	17½	Sierra Leone	Major A. Pearse.
25	...	15	Gambia	Sir Edmund G. Loder, Bart.
24¾	8½	13¾	Do.	Julius Jeppe.
24½	8¼	19	Do.	H. C. Goddard.

D.—ANGOLA DEFASSA (*Cobus defassa penricei*).

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
29	8¾	18½	Benguela	G. W. Penrice.
-28½	8¾	20	Do.	E. P. Cooper.
-28¼	8¼	11½	Do.	A. Ohlsson.
28	8	22½	Do.	G. W. Penrice.
25¼	8¾	10¾	Do.	W. C. Neilson.
24½	8	9½	Do.	Hon. Walter Rothschild.
20¼	6⅞	12¼	Do.	Julius Jeppe.

- Owner's measurements.



Head of Mrs. Gray's Kob.

MRS. GRAY'S KOB (*Cobus maria*).

With this species we come to the smaller waterbucks, or kobs ; the present animal being distinguished by the long slender darkly curved horns, which are ridged nearly to the tips, and the blackish-brown body-colour of the old bucks. This dark colour is relieved by a whitish patch in front of the withers, the yellowish ears, a yellowish-

white patch in front of and behind each eye, and the yellowish muzzle, chin, and throat. The limbs and much of the under parts are wholly dark-coloured. Height at shoulder about 38 inches. The young males and females of all ages are chestnut-coloured.

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

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
32 $\frac{1}{4}$	7 $\frac{1}{4}$	16 $\frac{1}{4}$	Bahr-el-Ghazal . . .	Julius Jeppe.
32	6 $\frac{7}{8}$	...	Near Junction of Bahr-el-Gebel and White Nile	Major H. N. Dunn.
-31 $\frac{1}{4}$	7 $\frac{3}{8}$	18 $\frac{1}{2}$	Bahr-el-Ghazal . . .	Sir W. Garstin.
30 $\frac{5}{8}$	7	14	Do. . . .	Capt. H. Gordon.
30 $\frac{1}{2}$	7	9	Do. . . .	R. A. Colvin.
-30 $\frac{1}{2}$	6 $\frac{1}{2}$	17	?	Berlin Museum.
30 $\frac{1}{4}$	7	14 $\frac{3}{4}$	Bahr-el-Zaref . . .	Capt. C. E. Hills.
-30	7 $\frac{1}{4}$	13 $\frac{1}{2}$ $\frac{3}{8}$	White Nile . . .	Capt. M. M'Neill.
-29 $\frac{7}{8}$	6 $\frac{3}{8}$	9 $\frac{1}{2}$	Do. . . .	Imperial Museum, Vienna.
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 $\frac{1}{4}$	6 $\frac{1}{4}$	18 $\frac{1}{4}$	Near Junction of Bahr-el-Gebel and White Nile	Major H. N. Dunn.
29	7 $\frac{3}{4}$	12 $\frac{3}{4}$	?	Col. E. G. T. Bainbridge.
29	7	16	Tonga Island, White Nile	Capt. W. Hayes-Sadler.
28 $\frac{1}{2}$	7 $\frac{1}{2}$	20 $\frac{1}{4}$	Sudan	Capt. H. H. S. Morant.
28	6 $\frac{3}{4}$	14 $\frac{3}{4}$	?	E. C. Crispin.
27 $\frac{6}{8}$	6 $\frac{1}{4}$	21 $\frac{1}{2}$	Bahr-el-Ghazal . . .	Major R. M. Sanders.
27 $\frac{1}{2}$	6 $\frac{1}{2}$	...	White Nile . . .	E. N. Buxton.
27 $\frac{1}{4}$	7	17 $\frac{3}{4}$	?	Major C. E. Wilson.
27	7 $\frac{3}{4}$	17 $\frac{1}{2}$	Bahr-el-Ghazal . . .	Hon. Walter Rothschild.
27	6 $\frac{3}{4}$	15 $\frac{3}{4}$	White Nile . . .	Capt. the Hon. M. P. Macnaghten.
27	8	14 $\frac{1}{4}$	Do. . . .	Durban Museum (H. Miller).
27	7 $\frac{1}{2}$	18	Do. . . .	C. E. Dupuis.
27	7 $\frac{1}{4}$	13 $\frac{1}{2}$	Do. . . .	L. P. Cockerill.
26 $\frac{3}{4}$	6 $\frac{3}{4}$	13 $\frac{3}{4}$	Arwan, Bahr-el-Ghazal	British Museum (Consul J. Petherick).

- Owner's measurements.



Head of White-eared Kob.

WHITE-EARED KOB (*Cobus leucotis*).

Hamaraia dyl of the Sudanese.

Teel of the Dinkas.

The old bucks of this smaller species 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 distinguished 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. Moreover, the

direction of the hair 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.

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 $\frac{1}{4}$	12 $\frac{1}{4}$	Do. . .	Capt. A. J. B. Percival.
23 $\frac{1}{4}$	6 $\frac{1}{4}$	10 $\frac{3}{8}$	White Nile . .	C. Bulpette.
22 $\frac{7}{8}$	7 $\frac{1}{2}$	15 $\frac{3}{4}$	Do. . .	Capt. G. L. Cameron.
22 $\frac{1}{4}$	7	6 $\frac{5}{8}$	Do. . .	Dr. Albert von Stephani.
22	6 $\frac{1}{2}$	10	Do. . .	F. W. Greswolde-Williams.
21 $\frac{3}{4}$	6 $\frac{1}{2}$	13 $\frac{1}{2}$	Do. . .	Major J. H. Rivers.
21 $\frac{3}{4}$	6 $\frac{1}{2}$	9 $\frac{3}{4}$	Do. . .	E. C. Crispin.
21 $\frac{5}{8}$	7 $\frac{7}{8}$	13 $\frac{1}{4}$	Do. . .	Paris Museum.
21 $\frac{1}{2}$	7 $\frac{1}{4}$	12 $\frac{1}{4}$	Do. . .	Brig.-Gen. B. T. Mahon.
21 $\frac{1}{2}$	6 $\frac{3}{4}$	12	Do. . .	R. M'D. Hawker.
21 $\frac{1}{2}$	6 $\frac{3}{4}$	10 $\frac{1}{2}$	Bahr-el-Ghazal . .	Sir W. Garstin.
21 $\frac{1}{4}$	6 $\frac{7}{8}$	11	White Nile . .	Capt. 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	6 $\frac{3}{4}$	10 $\frac{1}{2}$	Do. . .	R. A. Colvin.
21	7 $\frac{1}{2}$	10 $\frac{1}{4}$	Do. . .	E. N. Buxton.
21	6 $\frac{1}{2}$	10	Do. . .	Capt. G. S. Nickerson.
21	6 $\frac{1}{4}$	13 $\frac{3}{4}$	Do. . .	C. Logan.
20 $\frac{3}{4}$	6	8 $\frac{1}{4}$	Do. . .	Major H. N. Dunn.
20 $\frac{3}{4}$	6	9 $\frac{3}{4}$	Do. . .	British Museum (Capt. H. N. Dunn).
20 $\frac{3}{4}$	6 $\frac{1}{2}$	11 $\frac{1}{4}$	Do. . .	Capt. C. S. Timins.
20 $\frac{3}{4}$	7	7	Do. . .	W. N. M'Millan.
20 $\frac{1}{2}$	7	12	Do. . .	Lieut. W. B. Drury, R.N.
20 $\frac{1}{2}$	6 $\frac{1}{4}$	11	Do. . .	A. L. Butler.

- Owner's measurements.
¹ Determination provisional.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-20½	7	11·15	White Nile . . .	Prince Henry of Liechtenstein.
-20¼	...	8½	Do. . .	Major W. Anstruther Gray.
20¼	7	7½	Do. . .	Capt. R. B. Airey.
20	6¼	8¼	Do. . .	Capt. R. A. Markham.
20	6½	13¼	Do. . .	Col. E. G. T. Bainbridge.
20	6¼	10¼	Do. . .	Count E. Hoyos.
20	6½	12¼	Do. . .	P. Niedieck.
20	6½	10½	Do. . .	Hon. N. Charles Rothschild.
-20	7	7½	Do. . .	Berlin Museum.
20	6	11	Do. . .	Major C. S. Cumberland.
20	6½	9	Do. . .	Sir Savile Crossley, Bart.

- Owner's measurements.

VAUGHAN'S KOB (*Cobus vaughani*).

Nearly allied to the last, but the dark areas of the old bucks bright foxy red, much as in the Uganda kob. The red extends into the bases of the ears, and there is rather less white on the face than in the latter species.

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



Frontlet and Horns of Buffon's Kob.

BUFFON'S KOB (*Cobus cob*).

Maria of the Hausas.

In common with the Uganda kob and puku kob, this species has the back of the ears rufous like the body; and it agrees with the former of these in having the horns less than twice the length of the head, the hair short, and the front of the fore-legs black; its peculiar distinctive features being the presence of a white line over each eye and its comparatively small size, the approximate height at the shoulder being from 32 to 33 inches.

Distribution.—West Africa, from the Gambia to Nigeria.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
20½	6¾	10½	Nigeria . . .	Capt. W. H. Wilkin.
20½	7¼	10	Lake Tchad . . .	L. C. Jackson.
20¾	6¼	12¼	Nigeria . . .	A. B. Baillie-Hamilton.
20	7	7	Do.	W. F. Gowers.
-20	...	12	Benue	Capt. W. de L. Williams.

- Owner's measurements.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
20	7 $\frac{3}{8}$	14 $\frac{1}{2}$	Lake Tchad . . .	Major J. B. Cockburn.
19 $\frac{3}{4}$	7	7 $\frac{3}{4}$	Nigeria . . .	A. Noel Woods.
19 $\frac{3}{4}$	7 $\frac{3}{8}$	9	Lake Tchad . . .	Brig.-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.	Lieut.-Col. T. Astley Cubitt.
19 $\frac{1}{2}$	6 $\frac{1}{4}$	6 $\frac{1}{2}$	Do.	R. W. Fox.
19 $\frac{1}{4}$	6 $\frac{3}{4}$	13	Lake Tchad . . .	J. C. Parker.
19	6 $\frac{3}{4}$	13 $\frac{1}{2}$	Nigeria . . .	A. Noel Woods.
19	6 $\frac{1}{2}$	11	Lake Tchad . . .	S. B. B. Dyer.
18 $\frac{3}{4}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	Nigeria . . .	Capt. J. S. Brogden.
18 $\frac{3}{4}$	5 $\frac{3}{4}$	6 $\frac{1}{2}$	Do.	Major F. Lyon.
18 $\frac{3}{4}$	6	10 $\frac{3}{4}$	Do.	W. D. Barber.
18 $\frac{5}{8}$	6 $\frac{1}{4}$	9 $\frac{3}{4}$	Do.	J. Penoyne.
18 $\frac{1}{2}$	6 $\frac{1}{2}$	11	Do.	Major H. R. Beddoes.
18 $\frac{1}{2}$	6	8 $\frac{1}{2}$	Benue River . . .	Major J. A. Burdon.
18	6 $\frac{3}{8}$	9 $\frac{1}{4}$	Cameruns . . .	Sir Edmund G. Loder, Bart.
18	6	8 $\frac{3}{4}$	Nigeria . . .	R. S. M'Clintock.
17 $\frac{3}{4}$	6	12	Do.	Capt. J. F. Loder-Symonds.
17 $\frac{3}{4}$	6 $\frac{3}{4}$	8 $\frac{3}{4}$	Do.	Dr. F. W. Chesnaye.
17 $\frac{3}{4}$	6 $\frac{3}{4}$	10	Do.	A. C. Aubin.
17 $\frac{5}{8}$	7 $\frac{3}{8}$	6	Do.	Capt. J. K. Cochrane.
17 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	Do.	K. V. Elphinstone.
17 $\frac{1}{2}$	6 $\frac{1}{4}$	8 $\frac{3}{8}$	Cameruns . . .	Hon. Walter Rothschild.
17 $\frac{1}{2}$	5 $\frac{3}{4}$	9 $\frac{1}{4}$	Lake Tchad . . .	Major D. F. MacCarthy Morrogh.
17 $\frac{1}{2}$	6 $\frac{1}{2}$	10 $\frac{3}{4}$	Sierra Leone . . .	C. Cary Barnard.

- Owner's measurements.



Skull and Horns of Uganda Kob.

UGANDA KOB (*Cobus thomasi*).

Waganda name, *Nsuna*, *N'Sunu*, or *Sunu*.

The East African representative of Buffon's kob, from which it 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 $35\frac{1}{2}$ inches.

Distribution.—East Africa, from Kavirondo to Uganda.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-24 $\frac{1}{4}$	7 $\frac{1}{2}$	12	Wadelai	Capt. G. A. S. Cape.
23 $\frac{1}{2}$	7 $\frac{1}{4}$	6 $\frac{3}{4}$	Mruli	Capt. J. Ponsonby.
22 $\frac{3}{4}$	7 $\frac{1}{2}$	11 $\frac{1}{2}$	Uganda	Major C. A. Sykes.
22 $\frac{1}{2}$	7 $\frac{3}{4}$	14 $\frac{1}{4}$	Do.	Capt. W. S. Nicolson.
22 $\frac{1}{4}$	8 $\frac{1}{2}$	15 $\frac{1}{2}$	Do.	Capt. R. H. Price.
22	7 $\frac{1}{2}$	12 $\frac{3}{4}$	Do.	Capt. A. J. Whittle.
22	7	7 $\frac{3}{4}$	Do.	P. B. Vander-Byl.
21 $\frac{3}{4}$	7 $\frac{3}{4}$	9	Do.	Capt. R. A. Markham.
21 $\frac{1}{2}$	7 $\frac{1}{2}$	10 $\frac{1}{2}$	Do.	F. J. Jackson.
21 $\frac{1}{2}$	8	9 $\frac{3}{4}$	Do.	Douglas M'Douall.
-21 $\frac{1}{4}$	...	12 $\frac{7}{8}$	Do.	C. Steuart Betton.
21 $\frac{1}{8}$	7 $\frac{1}{4}$	7 $\frac{3}{4}$	Wadelai	Major M. L. Carleton.
21	6 $\frac{3}{4}$	5	Uganda	G. L. Harrison.
21	7	12 $\frac{1}{2}$	Do.	Sir H. D. Tichborne, Bart.
20 $\frac{3}{4}$	6 $\frac{3}{4}$	10 $\frac{1}{4}$	Nile Valley	Julius Jeppe.
20 $\frac{1}{2}$	5 $\frac{7}{8}$	6 $\frac{1}{2}$	Uganda	Hon. Walter Rothschild.
20 $\frac{1}{2}$	6 $\frac{3}{4}$	11 $\frac{1}{2}$	Do.	C. Craig.
-20 $\frac{1}{4}$	7 $\frac{1}{4}$	7 $\frac{1}{2}$	Do.	Dr. A. MacCarthy Morrogh.
20 $\frac{1}{4}$	7 $\frac{1}{4}$	9 $\frac{5}{8}$	Do.	Lord Hindlip.
20 $\frac{1}{4}$	6 $\frac{3}{4}$	11	Nile Valley	Major W. Anstruther Gray.
20 $\frac{1}{8}$	7	9 $\frac{3}{4}$	North end of Lake Albert	Col. Trevor Ternan.
-20	6 $\frac{3}{4}$	11	Senliki	Sir W. Garstin.

- Owner's measurements.



Head and Fore-quarters of Lechwe (*Cobus leche*). From a photograph by
Mr. Poulett-Weatherley.

LICI or LECHWE KOB (*Cobus leche*).

Umbundu of the Angolas.

Leché, Lee-gwee of the Makololo.

Lechwe in the Barotsi and Lake
Ngami countries.

Inya of the Masubias.

Oonya of the Makubas.

Mumembé (male), *Ngia* (female) in
the Chilala and Chibisa countries.

Bainanja of the Mushu Kulumbwe.

In this handsome antelope the horns are longer than in its allies, considerably exceeding twice the length of the head, while the front of the fore-legs is black, and the hair long. Height at shoulder, 40 or 41 inches.

Like the puku, this kob 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, from which, however, in addition to the features already mentioned, it may always be distinguished by its lighter and more graceful build. 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 created 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. The lechwe seldom ventures into the deep rivers from fear of the crocodiles, but among the reed-beds, the shallow lagoons, and flooded flats it is a familiar figure. It is often to be found, in the less accessible regions, in vast herds. An excellent swimmer, it can progress by a succession of splashing bounds at great speed through the lagoons and shallows. It is extremely tenacious of life.

Distribution.—Zambesia and Barotsiland.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
34½	...	...	?	F. H. Barber.
33½	7	26¼	Lake Bangweolo	Poulett-Weatherley.
32¼	9¼	26½	Barotsiland	C. M. Rolker.
31½	7	18	N.W. Rhodesia	Col. C. Harding.
30¾	8½	19¼	Kafue River	Sir Edmund G. Loder, Bart.
30	8¼	20½	British Central Africa	J. H. Hayes.
29¾	7¾	20¼	Barotsiland	R. C. Forster.
29¼	8¼	20½	Do.	Major J. Carden.
29	8	19¾	Do.	P. B. Vander-Byl.
28¾	8	28½	Do.	R. T. Coryndon.
28¾	7¼	12½	Do.	H. H. Williams.
28	8¼	16½	N.W. Rhodesia	George Grey.
27¾	7½	18¼	Barotsiland	South African Museum.
27¾	8	14	Okavango Valley	Sir H. J. Goold-Adams.
27¼	...	13½	?	P. C. Keytel.

— Owner's measurements.

BLACK LECHWE

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Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
27½	10¾	19½	Chobi Valley . .	British Museum (F. C. Selous).
27½	8	20½	Barotsiland . .	Lord H. Seymour.
27½	8	14¾	Chobi Valley . .	F. C. Selous.
27	8½	14½	Barotsiland . .	F. V. Worthington.
27	8	13½	Do. . .	Norman B. Smith.
27	7¾	19½	Do. . .	Major C. A. Sykes.

BLACK LECHWE (*Cobus smithemani*).

Nearly allied to the last, but the upper parts of the adult males blackish brown.

Distribution.—Lake Mweru district.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
24½	7	14½	N.E. Rhodesia . .	C. Francis.
23½	5¾	11¾	Lake Bangwelu . .	Hon. Walter Rothschild.
22	7	16	N.E. Rhodesia . .	Capt. J. Harington.
—22	...	...	Do. . .	T. H. Sneyd.
21¾	6½	18¾	Do. . .	Hon. Walter Rothschild.
21¾	6¾	14	Do. . .	H. Cookson.
20	6½	15¾	Do. . .	Glasgow Museum (Hon. N. C. Rothschild).

— Owner's measurements.



Skin, Skull, and Horns of Black Lechwe.



Skull and Horns of Puku.

PUKU KOB (*Cobus vardoni*).

Impuku of the Masubias. *Puku* in Ngamiland.
Muntinya in Barotsiland. *Seula* in the Chilala and Chibisa countries.

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 and Rhodesia. Everywhere rare, and found only in small herds.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20 $\frac{3}{4}$	7 $\frac{7}{8}$	17	N.E. Rhodesia	Hon. Walter Rothschild.
20 $\frac{1}{4}$	8 $\frac{1}{2}$	12 $\frac{1}{4}$	Luswesi Valley, Lake Bangweolo	F. Smitheman.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-19½	...	12¾	...	J. Rosen.
19¼	6½	4	N.E. Rhodesia . . .	H. Cookson.
19¼	7½	9¼	?	T. G. Davey.
19½	6¾	8½	?	J. Carr Saunders.
19	7¾	5¾	Barotsiland . . .	Major J. Carden.
18¾	6¾	8½	Do. . . .	R. T. Coryndon.
18¾	7	6½	?	J. L. Drège.
18¾	6	6	British Central Africa	Dr. A. MacCarthy Morrogh.
18½	6½	9¼	?	S. R. Price.
18½	8	12	N.E. Rhodesia . . .	F. H. Melland.
18¼	7¼	8	?	G. W. Spencer Smith.
18	7	11¼	N.W. Rhodesia . . .	Col. C. Harding.
18	7¾	6	?	George Grey.
17¾	7¼	8	Ulanga River . . .	R. Berridge.
17½	6¾	7¼	N.W. Rhodesia . . .	A. L. Francis.
-17½	...	10½	Zambesi	Capt. W. Jardine.
-17½	...	11¾	Batoka Plateau . . .	E. Folley.
17¾	6¼	18	Kabampo Valley . . .	Sir H. J. Goold-Adams.
17¼	6¼	malformed 11½	Barotsiland . . .	F. V. Worthington.
17	7	4½	Ulanga River . . .	A. Mathews.
17	6	8¼	Lake Mweru . . .	James Yule.
17	6½	9½	Chobi River . . .	Imperial Museum, Vienna.
17	6¾	8¼	Barotsiland . . .	C. M. Rolker.
17	7	9¾	Do. . . .	R. C. Forster.
17	7	8	Do. . . .	Lord H. Seymour.
♀ 5½	3½	5¼	Loru River . . .	J. Gibson Hall.

- Owner's measurements.

LODER'S PUKU (*Cobus vardoni loderi*).

A variety of the puku, at present known only by the under-mentioned specimen of the skull.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
21	8	8¼	?	Sir Edmund G. Loder, Bart.



Head of Vaal Rhebok.

GREY or VAAL RHEBOK (*Pelea capreolus*).*Iliza* of the Swazis.*Pshiatla* of the Basutos.*Peeli* of the Bechuanas.

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 or 30 inches. The chief essential distinctions between this antelope and the reedbucks 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 and exciting sport ; and although its somewhat stiff and stilty 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. The most peculiar feature of the vaal rhebok is the soft and woolly nature of the grey coat ; the horns afford but insignificant trophies, and the flesh is of poor quality for the table.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
-11½	...	...	Spitzkop . . .	F. H. Barber.
-11½	...	...	Cape Colony . . .	South African Museum.
11½	2½	6¼	?	Surgeon H. E. Fryer, R.N.
-11	...	...	?	M. E. Bowker.
10¾	2	2½	Basutoland . . .	Julius Jeppe.
-10¾	...	6	Cape Colony . . .	E. T. Murray.
-10½	2½	4¾	Transvaal . . .	H. T. and A. H. Glynn.
-10¼	...	3¾	?	P. C. Keytel.
10¼	2	3¾	Near Middelburg . . .	Capt. E. H. E. Abadie.
-9½	...	3¼	?	Major W. Anstruther Gray.
-9¾	2	4¼	Basutoland . . .	Lord Milner.
9¼	2½	2¾	?	Dr. Oakeshott.
-9¼	2¼	2½	Near Cape Town . . .	Capt. W. Jardine.
9	2¾	2¾	?	Mr. Justice Hopley.
-9	2¼	3½	Natal	C. S. Mann.
-8¾	2¾	3¾	?	A. Ohlsson.
8¾	2½	2¾	Cape Colony . . .	R. H. Venables Kyrke.
8¾	2½	2¾	South Africa . . .	British Museum (Dr. Burchell).
8½	2½	2	?	G. Richards.
8¾	2	3¼	?	Sir Edmund G. Loder, Bart.
8¼	2	2¾	?	F. C. Selous.

- Owner's measurements.



Head of Reedbuck.

The REEDBUCK (*Cervicapra arundinum*).

Bushmaat of the Sudanese.

Bemba of the Masaras.

Insegce of the Amandebili.

Im-vvee of the Masubias.

Um-vvee of the Makubas.

Inhlango of the Swazis.

Iklabu of the Basutos.

Impoyo of the Lower Zambesi tribes.

Mziki of the Zulus and Matabili.

Natafwi in the Mashukulumbwi country.

Mutobo in Barotsiland.

Sibughat in Ngamiland.

Mpoyo in the Chilala and Chibisa countries.

N'tobe of the M'Kua.

The reedbucks, none of which are so large as the waterbucks, differ from the latter and the kobys 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, too, is more bushy and shorter, the lateral hoofs are relatively smaller, and the horns, which are of medium length and stoutness, curve regularly upwards, and in some cases also forwards. Till very late in life the basal portion of the horns is of a pasty consistence, and owner's measurements on the field very often include this. The present species, the true reitbok 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 inclining markedly forwards. Reedbuck are generally met with in small family parties, and when excited or alarmed utter a characteristic shrill whistle. As their flesh is of fair quality, and their shooting by no means difficult, they are much sought after by sportsmen.

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; and some of the rivers where they are still fairly abundant are the Lotsani in Bamangwato and those of Ngami-land and the country between Mashonaland and the east coast.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
1-18	...	...	South Africa . . .	F. Vaughan Kirby.
17½	6½	17½	Barotsiland . . .	Percy C. Reid.
16¾	5¾	13¾	Zululand . . .	C. S. Mann.
16½	6	12¾	Do.	Hon. Walter Rothschild.
16¾	6¾	19½	Mpimbi, B.C.A. . .	Major F. Trollope.
16¼	6	16¾	Matabililand . . .	R. C. Batley.
16¼	6½	10	?	Julius Jeppe.
16¼	5½	20½	Barotsiland . . .	R. T. Coryndon.
16	5½	11½	South Africa . . .	A. Ohlsson.
16	7½	9½	Barotsiland . . .	Col. C. Harding.

— Owner's measurements.

¹ This was seen and measured by Mr. Kirby. It had one horn only; the other was shot off.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
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.
-15 $\frac{7}{8}$	6 $\frac{7}{8}$	10 $\frac{1}{8}$	Zululand	F. R. N. Findlay.
¹ 15 $\frac{3}{4}$	6 $\frac{1}{2}$	13 $\frac{1}{2}$	Transvaal	Julius Jeppe.
15 $\frac{3}{4}$	6	19	Tanganyika	Hon. Walter Rothschild.
-15 $\frac{1}{2}$	5	10 $\frac{1}{2}$	N.E. Rhodesia	F. Russell-Roberts.
-15 $\frac{1}{2}$	6 $\frac{5}{8}$	15 $\frac{1}{2}$	Transvaal	F. Vaughan Kirby.
-15 $\frac{1}{2}$	4 $\frac{7}{8}$	12 $\frac{1}{4}$	?	Capt. W. Jardine.
-15 $\frac{1}{2}$	...	...	Damaraland	South African Museum.
-15 $\frac{1}{2}$	...	12	Baloka Plateau	S. M. L. O'Keiffe.
-15 $\frac{3}{8}$	...	...	Transvaal	Abel Chapman.
15 $\frac{1}{4}$	6 $\frac{1}{4}$	13 $\frac{3}{8}$	Barotsiland	F. V. Worthington.
15 $\frac{1}{4}$	6	13 $\frac{1}{2}$	Do.	Norman B. Smith.
15 $\frac{1}{4}$	6	13 $\frac{3}{4}$	Rhodesia	George Grey.
15 $\frac{1}{4}$	6	15	?	P. C. Keytel.
-15 $\frac{1}{4}$	...	...	?	F. H. Barber.
15 $\frac{1}{8}$	6 $\frac{5}{8}$	11 $\frac{1}{4}$	Manica Plateau, N. of Zambesi	F. C. Selous.
15	6 $\frac{1}{2}$	9 $\frac{3}{4}$	Mashonaland	Sir John Willoughby, Bart.
15	5 $\frac{1}{2}$	11	N.W. Rhodesia	G. T. Hutchinson.
14 $\frac{3}{4}$	6	14 $\frac{1}{4}$	B.C.A.	S. Robins.
14 $\frac{3}{4}$	6	15 $\frac{1}{8}$	Zomba, B.C.A.	C. C. Bowring.
14 $\frac{3}{4}$	5 $\frac{1}{2}$	9 $\frac{1}{2}$	British Central Africa	Capt. J. S. Brogden.
14 $\frac{3}{4}$	6 $\frac{1}{4}$	15 $\frac{1}{4}$	N.W. Rhodesia	R. C. Forster.
-14 $\frac{1}{4}$	6	10	Angola	C. H. Pemberton.
-13 $\frac{1}{2}$	6	10 $\frac{3}{8}$	Do.	H. A. Bryden.
12 $\frac{1}{2}$	6 $\frac{1}{4}$	11 $\frac{1}{4}$	G. East Africa	Lord Hindlip.
12 $\frac{1}{4}$	5 $\frac{1}{4}$	9 $\frac{1}{2}$	Congo	H. M. Stephenson.
12	7	8	Angola	W. C. Neilson.

- Owner's measurements.

¹ Abnormal head.



Head of Mountain Reedbuck.

MOUNTAIN REEDBUCK or **ROOI RHEBOK** (*Cervicapra fulvorufula*).

Inhlang-amatshe of the Swazis and Zulus.

This reedbuck, which measures about 28 inches at the shoulder, is distinguished by the absence of a distinct forward hook to the tips of the horns, and the general greyish fawn-colour of the hair, which has, however, in some cases a more or less distinctly rufous tinge.

Distribution.—Eastern Africa to the south of the Zambesi, particularly Natal, Zululand, and Bechuanaland; represented farther north by the under-mentioned 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, and throughout Mashonaland and Matabililand, rooi rhebok are still abundant. Those from the Manica plateau, north of the Zambesi, may be the East African race.

The reedbuck discovered by Mr. Vaughan Kirby in the Lydenburg range of the Transvaal departs from the ordinary type of the mountain reedbuck in exhibiting a tendency to partial albinism. Whether this peculiarity entitles it to be regarded as a distinct race (*Cervicapra fulvorufula subalpina*) must, for the present, remain a moot point.

A reedbuck from East Africa, described by Mr. Walter Rothschild from a single skin as a distinct species, appears to be, at most, nothing more than a local race of the rooi rhebok (*Cervicapra fulvorufula chanleri*). In the type specimen the nose shows a dark streak like the one often seen in the rooi rhebok and common reedbuck.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-8 $\frac{3}{4}$	4 $\frac{3}{4}$	4 $\frac{3}{4}$	Humansdorp . . .	F. Vaughan Kirby.
-8 $\frac{5}{16}$	5 $\frac{1}{2}$	5	?	P. C. Keytel.
-8 $\frac{1}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{4}$	Transvaal . . .	F. R. N. Findlay.
7 $\frac{3}{4}$	4 $\frac{3}{4}$	4 $\frac{3}{4}$	?	Hon. Walter Rothschild. (Shot by F. C. Selous.)
-7 $\frac{3}{4}$	...	2 $\frac{1}{2}$	Transvaal . . .	J. L. Drège.
-7 $\frac{1}{2}$	4	3 $\frac{1}{2}$	Lebombo Range, S. A.	Count E. Hoyos.
-7 $\frac{1}{2}$	...	...	?	H. T. and A. H. Glynn.
7 $\frac{3}{4}$	4 $\frac{1}{4}$	3	Zululand . . .	A. H. Neumann.
7 $\frac{1}{4}$	5	3	Near Bloemfontein .	R. Rankin.
-7 $\frac{1}{4}$	4 $\frac{1}{2}$	2 $\frac{1}{2}$	?	Mr. Justice Hopley.
-7 $\frac{1}{2}$	4 $\frac{1}{4}$	5 $\frac{3}{4}$	?	Julius Jeppe.
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	4 $\frac{9}{16}$	5 $\frac{1}{4}$	?	B. Senior.

- Owner's measurements.

The following specimens belong to the East African form:—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
6 $\frac{3}{4}$	3	2 $\frac{3}{8}$	East Africa . . .	A. E. Butter.
6 $\frac{3}{8}$	4 $\frac{1}{4}$	3 $\frac{1}{4}$	Do.	J. R. Bradley.
6 $\frac{1}{4}$	4 $\frac{1}{2}$	2 $\frac{5}{8}$	Do.	Sir Robert Harvey, Bart.
6 $\frac{1}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{8}$	Do.	S. L. Hinde.
6 $\frac{1}{2}$	3 $\frac{1}{2}$	3	E. of Lake Margerhita . . .	Lord Hindlip.
6	3 $\frac{3}{8}$	5 $\frac{1}{4}$	East Africa	G. L. Harrison.
-6	3 $\frac{3}{8}$	2 $\frac{3}{4}$	Rift Valley	C. Steuart Betton.
-6	4 $\frac{3}{8}$	5 $\frac{7}{16}$	?	Capt. M. M'Neill.
5 $\frac{7}{8}$	3 $\frac{3}{8}$	4 $\frac{1}{2}$	East Africa	Major J. A. Hannynnton.
5 $\frac{3}{4}$	3 $\frac{5}{8}$	3 $\frac{1}{2}$	Do.	W. W. Ashley.
5 $\frac{3}{4}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	Do.	Marquis of Waterford.
-5 $\frac{3}{4}$	4	4	Do.	C. S. Mann.
5 $\frac{5}{8}$	4 $\frac{3}{8}$	4	N.E. of Lake Chomo . . .	British Museum (Lord Hindlip).
5 $\frac{5}{8}$	4	4	?	Lord Delamere.
5 $\frac{5}{8}$	3 $\frac{1}{2}$	4 $\frac{3}{8}$	?	Major A. E. Smith.
5 $\frac{1}{2}$	4	3 $\frac{5}{8}$	Mau Escarpment	Rhys Williams.
5 $\frac{1}{2}$	...	3 $\frac{1}{2}$	East Africa	Lieut.-Col. E. G. Harrison.
5 $\frac{1}{2}$	4	2 $\frac{3}{4}$	Do.	A. Bayley-Worthington.
5 $\frac{1}{2}$	3 $\frac{1}{2}$	5	Do.	T. D. M. Cardeza.
5 $\frac{1}{2}$	3 $\frac{1}{2}$	2 $\frac{3}{4}$	Do.	Hon. Guy Wilson.

- Owner's measurements.



Ward's Bohor Reedbuck.

BOHOR REEDBUCK (*Cervicapra redunca*).

Waganda name, *Njaza*.

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 a hook. General colour uniformly bright fawn, usually 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.



Skull and Horns of Abyssinian Bohor Reedbu

The following five races are recognised :—

Cervicapra redunca typica.—West Africa, north of forest region. Horns short and stout, very thick at base, curved in front, points turned inwards.

Cervicapra redunca coltoni.—Kordofan, White Nile, and Isle of Meroe. Horns long and thin, much curved outwards and backwards, with the points curled straight over or directly outwards.

Cervicapra redunca bohor.—Central Abyssinia. Horns longer, stouter, and not so curved as in *coltoni*.

Cervicapra redunca donaldsoni.—East of Lado and Western Somaliland. Horns long, slender, curved outwards, and points much turned inwards.

Cervicapra redunca wardi.—Uganda and East Coast of Africa. Horns short, stout, curved outwards, and the points much turned inwards.

A. The following specimens belong to the typical race :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{3}{4}$	6 $\frac{1}{2}$	2 $\frac{7}{8}$	Lake Tchad . . .	S. B. B. Dyer.
10	5 $\frac{3}{4}$	5 $\frac{3}{4}$	N. Nigeria . . .	J. C. Parker.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
9 $\frac{3}{4}$	5 $\frac{3}{4}$	5	N. Nigeria . . .	A. A. Smith.
9 $\frac{1}{2}$	5 $\frac{1}{4}$	7 $\frac{3}{4}$	Do. . . .	A. Noel Woods.
9 $\frac{1}{2}$	5	3 $\frac{1}{2}$	Ganda, Nigeria . . .	Major J. W. Carroll.
9 $\frac{1}{4}$	5	4 $\frac{1}{8}$	Do. . . .	Capt. W. C. N. Hastings.
9 $\frac{1}{8}$	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. . . .	S. C. Peck.
8 $\frac{3}{4}$	6	4	Nigeria	Capt. G. W. Denison.
8 $\frac{3}{4}$	5 $\frac{1}{2}$	5	Do. . . .	Hon. Walter Rothschild.
8 $\frac{3}{4}$	5 $\frac{3}{4}$	4 $\frac{5}{8}$	Gambia	Lieut. A. A. Ellison, R.N.
8 $\frac{3}{4}$	5 $\frac{1}{8}$	5 $\frac{1}{2}$	Lake Tchad . . .	Major J. B. Cockburn.
8 $\frac{3}{8}$	5	5 $\frac{3}{8}$	Nigeria	R. W. Fox.
8 $\frac{1}{4}$	5 $\frac{3}{8}$	5 $\frac{3}{8}$	Do. . . .	S. H. Christy.
8 $\frac{1}{4}$	5 $\frac{3}{8}$	4 $\frac{3}{8}$	Do. . . .	Capt. F. P. Crosier.
8	5 $\frac{1}{4}$	3 $\frac{1}{2}$	Ibi, Benue River, West Africa	Julius Jeppe.
8	5	5 $\frac{3}{8}$	Gambia	Guy H. Sangster.
8	5	3 $\frac{1}{2}$	N. Nigeria	W. D. Barber.

N. Ashanti -

B. The following belong to *Cervicapra redunca bohori* :—

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 . . .	P. H. G. Powell-Cotton.
10 $\frac{5}{8}$	5 $\frac{1}{2}$	5	Abyssinia	D. P. MacGillivray.
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 $\frac{1}{4}$	5 $\frac{3}{4}$	5 $\frac{1}{2}$	Abyssinia	Hon. Walter Rothschild.

C. The under-mentioned specimens are referable to *Cervicapra redunca cottoni* :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{1}{2}$	4 $\frac{3}{4}$	15	Blue Nile	G. L. Harrison.
14 $\frac{3}{8}$	5 $\frac{1}{2}$	13	Sudan	Prince Colloredo Mannsfeld.
13 $\frac{3}{4}$	6	12	River Dinder	Capt. J. C. Graham.
13	5 $\frac{1}{2}$	9 $\frac{1}{2}$	Sudan	Col. A. Colville.
12 $\frac{3}{4}$	5 $\frac{1}{4}$	8 $\frac{1}{4}$	Near Kassala	Carl Hagenbeck.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12½	4½	11	River Dinder . . .	Capt. J. S. Cavendish.
12½	6	12½	Sudan . . .	W. N. McMillan.
12¾	6	7¾	Do. . . .	Capt. A. C. Jeffcoat.
12¼	5	14¾	Do. . . .	R. A. Colvin.
12¼	5¼	10¼	Do. . . .	C. Bulpett.
12	5½	12¼	Do. . . .	Hon. Walter Rothschild.
12	5¾	7¾	White Nile . . .	Capt. the Hon. M. P. Macnaghten.
11¾	5	13¾	Do. . . .	Capt. A. J. B. Percival.
11¾	5¼	11½	Do. . . .	H. Cookson.
11¾	5	9¾	Near Kassala . . .	Hon. Walter Rothschild.
11½	5	8¼	White Nile . . .	R. M'D. Hawker.
11½	5¼	8	Blue Nile . . .	Count J. Potocki.
11¼	5¼	14¾	White Nile . . .	Major H. N. Dunn.
11	5¼	10¾	Do. . . .	Major R. M. Sanders.
-11	4¾	13¾	Sudan . . .	Prince Henry of Liechtenstein
-10¾	...	...	Bahr-el-Gebel . . .	Sir W. Garstin.
10½	6½	9	Sudan . . .	C. E. Dupuis.

D. The following specimens are referable to *Cervicapra redunca wardi*:—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13¾	5½	8½	East Africa . . .	British Museum.
13½	5½	4½	Do. . . .	Col. J. R. Macdonald.
12½	5½	5¾	Do. . . .	British Museum (Sir John Kirk).
-12	5¼	10	Gondokoro . . .	Dr. A. MacCarthy Morrogh.
11½	6¼	9¼	East Africa . . .	Lord Hindlip.
10¾	4½	5½	Do. . . .	Sir Robert Harvey, Bart.
10½	4¾	7	Do. . . .	Dr. A. Paget.
10	5½	6¼	Mau Downs . . .	F. J. Jackson.
10	7¼	4¾	East Africa . . .	C. Craig.
10	5¼	4¾	Do. . . .	G. G. Longden.
10	5¾	5	Do. . . .	Capt. R. Meinertzhagen.

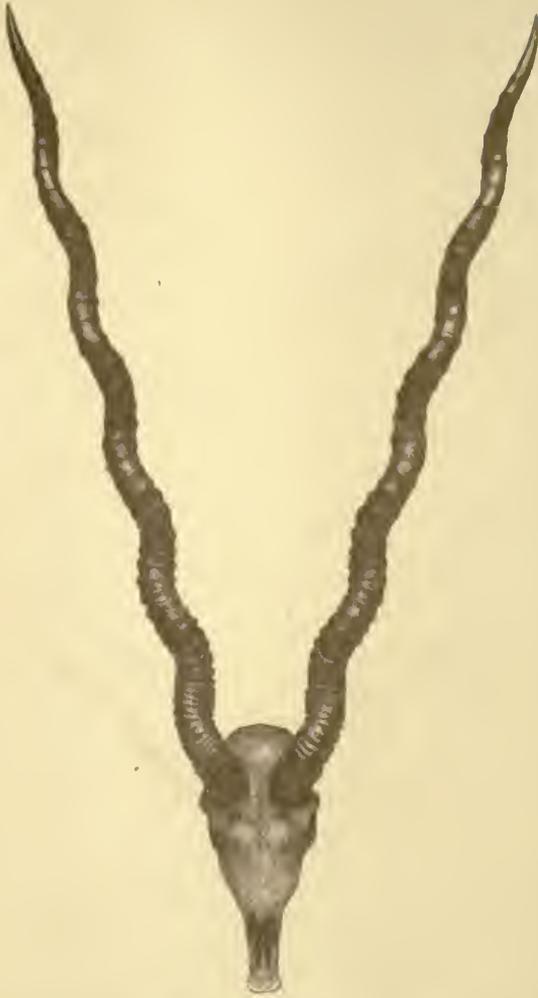
- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$9\frac{3}{4}$	6	$8\frac{1}{2}$	East Africa . . .	H. Twyford.
$9\frac{3}{4}$	$5\frac{1}{2}$	$5\frac{1}{2}$	Do.	E. J. L. Berkeley.
$9\frac{3}{4}$	$4\frac{7}{8}$	$4\frac{1}{3}$	Do.	Dr. Albert von Stephani.
$9\frac{1}{2}$	$5\frac{1}{2}$	$6\frac{1}{2}$	Do.	R. Fenwick.
$9\frac{1}{2}$	$5\frac{1}{2}$	$6\frac{1}{2}$	Do.	Major M. L. Carleton.
$9\frac{1}{2}$	5	$9\frac{1}{2}$	Do.	Capt. J. Harington.
$9\frac{3}{8}$	5	$5\frac{1}{2}$	Do.	Capt. J. Ponsonby.

- Owner's measurements.



Head of Reedbuck, with horns of an unusually divergent type.
Shot by Mr. G. L. Harrison.



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

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 sub-family or group of antelopes, embracing, among others, the saiga, the gazelles, the pala, and spring-

buck. All these are small or medium-sized antelopes, with hairy muzzles, generally short tails, and tall, narrow-crowned cheek-teeth, like those of sheep. With the exception of the springbuck and the majority of the gazelles, horns 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 face-glands, a short and compressed tail, and well-developed 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.

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.
—30½	...	...	?	Capt. J. MacRae-Gilstrap.
¹ —28¾	...	...	Jeypore . . .	Lieut.-Gen. Sir B. Blood.
28¼	5	17¾	Near Delhi . . .	A. O. Hume. (See illustration.)
—28	...	20	Do. . . .	Lieut.-Col. P. Durrell Pank.
—28	5	15	Near Ahmedabad . .	T. Le Mesurier.
—27⅞	...	...	Jeypore	Lieut.-Gen. Sir B. Blood.
27	5⅜	19⅜	Patcala	Major W. Cox.
—27	5	19½	Bikanir	Capt. Harry V. Brooke.
26⅞	4¾	26	Ulwar	Major L. Impey.
26¾	4¾	25¼	Bhurtapore, N.W.P.	Major-Gen. Sir E. T. H. Hutton.
—26¾	4¾	...	Bikanir	Major-Gen. A. A. A. Kinloch.
—26¾	...	...	Do.	Major H. J. Jones.
26½	5¼	27¾	N.W.P.	Capt. C. B. Oldfield.
26⅝	5	17⅞	Sirsa, Punjab . . .	A. O. Hume.
26⅞	5¼	22	Bikanir	Col. G. D. F. Sullivan.
26¼	5	23¼	Oudh	E. St. J. Lawson.
26	5	21¾	Bikanir	Major H. W. Codrington.
26	5½	19¼	Do.	H.H. the Maharaja of Bikanir.

— Owner's measurements.

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

RECORDS OF BIG GAME

Length straight.	Circumference.	Tip to Tip.	Locality.	Owner.
25 $\frac{3}{4}$	4 $\frac{3}{4}$	19	Jeypore . . .	Hon. A. Holland-Hibbert.
-25 $\frac{5}{8}$	4 $\frac{1}{2}$	16	Berar . . .	F. L. Crawford.
25 $\frac{3}{8}$	5 $\frac{1}{4}$	19	?	Lady Jenkins.
25 $\frac{1}{2}$	4 $\frac{7}{8}$	18	Punjab . . .	Lieut.-Col. R. H. Rattray.
25 $\frac{3}{8}$	5 $\frac{1}{2}$	14 $\frac{1}{2}$	Sirsa, Punjab . .	British Museum (Hume Collection).
-25 $\frac{3}{8}$	5	19	?	Count E. Hoyos.
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 $\frac{1}{8}$	4 $\frac{7}{8}$	22 $\frac{1}{4}$	Bikanir . . .	H.H. the Maharaja of Bikanir.
-25	5 $\frac{1}{4}$	13 $\frac{1}{2}$	?	Bombay Natural History Society.
-25	...	...	?	Lucknow Museum.
24 $\frac{3}{4}$	5	20	Jeypore . . .	Major J. B. Buchanan.
24 $\frac{3}{4}$	4 $\frac{1}{2}$	17 $\frac{1}{4}$	Dholpur . . .	A. J. Coppinger.
-24 $\frac{3}{4}$	...	...	Sauger . . .	Col. H. G. Mainwaring.
-24 $\frac{1}{2}$	5	18 $\frac{3}{4}$	C. India . . .	Col. R. W. Mapleton.
24 $\frac{1}{2}$	5 $\frac{3}{8}$	20 $\frac{1}{4}$	Bikanir . . .	H.H. the Maharaja of Bikanir.
24 $\frac{3}{8}$	5 $\frac{1}{4}$	16 $\frac{1}{4}$	?	H.H. the Crown Prince of Bhopal.
24 $\frac{1}{4}$	5 $\frac{1}{2}$	18 $\frac{1}{2}$	?	Col. the Hon. C. E. Bingham.
24 $\frac{1}{4}$	5	18 $\frac{1}{2}$	?	Marquis of Ailsa.

- Owner's measurements.



Skull and Horns of Pala, from a specimen shot by Mr. A. H. Neumann.

The PALA or IMPALA (*Æpyceros melampus*).

Inzero of the Masubias.

Luondo and *Mpala* in Barotsiland,

Swalah of the Swahilis.

Ngamiland, Chilala, and Chibisa.

Palah of the Waganda.

The graceful pala differs from other members of the gazelle group by the absence of the lateral hoofs; its specific name (black-footed) being taken from the pair of tufts of black hair 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 about 33 inches. The Boer name of rooibok (red buck) is happily chosen. Weight about 110 lbs.

Distribution.—Southern and South-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 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. Half a century ago, or even less, they were to be found in similar numbers among the covert on the banks of every river in the Transvaal and Bechuanaland; but now it is not till the northern border of the former country that they are 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.

On front curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight.	Circumference.			
31½	25	6½	13	East Africa . . .	E. M. Crosfield.
30½	...	5¾	23½	Do. . . .	Capt. E. Berry.
30	24¾	6½	20¾	Do. . . .	Count C. Podstatzky.
30	24	6¼	17½	Do. . . .	Lord Delamere.
29½	25	6	24	Do. . . .	H. Hyde-Baker.
29½	23¾	6½	15¾	Do. . . .	A. E. Butter.
29¼	24½	6	19½	Do. . . .	Count E. Hoyos.
29¼	23¾	6¾	16¼	Do. . . .	W. W. Ashley.
29¼	24¼	6¼	16¼	Do. . . .	A. J. A. Douglas.
29	22½	6	9¾	Do. . . .	Dr. A. Paget.
28¾	24	6½	17¼	Do. . . .	Major L. Boyd Moss.
28¾	23½	6¼	19	Do. . . .	Sir Edmund G. Loder, Bart.
28¾	24	6	16⅞	Do. . . .	C. Stewart Betton.
28½	22	6¼	11½	Do. . . .	Capt. J. S. Cavendish.
28½	23¼	6½	16½	Do. . . .	Capt. E. F. Hausburg.
28¼	24¾	6¼	24½	Do. . . .	Capt. R. Meinertzhagen.
28¼	23	6½	11¼	Do. . . .	J. R. Bradley.
28	22¾	6¾	25	Do. . . .	Earl of Warwick.
28	23	6¼	13	Do. . . .	Walter Jones.
28	24¼	6¾	17¼	Do. . . .	R. Hayne.

- Owner's measurements.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
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	23	5 $\frac{3}{4}$	22 $\frac{3}{4}$	Do. . . .	A. H. Neumann. (See illustration.)
28	22 $\frac{1}{2}$	6	12	Do. . . .	F. J. Jackson.
28	21	5 $\frac{7}{8}$	12 $\frac{1}{4}$	Do. . . .	G. E. Smith.
28	...	6	20	Do. . . .	Major W. Anstruther Gray.
27 $\frac{3}{4}$	21	6	9 $\frac{1}{2}$	Do. . . .	Lieut.-Col. W. A. W. Lawson.
27 $\frac{3}{4}$	23 $\frac{1}{4}$	6	13 $\frac{1}{2}$	Do. . . .	Capt. H. F. T. Fisher.
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 $\frac{1}{2}$	21	5 $\frac{7}{8}$	14 $\frac{1}{4}$	South Africa . . .	British Museum (Dr. Burchell).
27 $\frac{1}{2}$	23 $\frac{1}{4}$	5 $\frac{7}{8}$	15 $\frac{1}{2}$	East Africa . . .	Julius Jeppe.
27 $\frac{1}{2}$	22 $\frac{1}{4}$	6 $\frac{1}{4}$	14 $\frac{3}{4}$	Do. . . .	A. Brocklehurst.
27 $\frac{1}{2}$	22 $\frac{7}{8}$	6 $\frac{1}{4}$	10 $\frac{1}{2}$	Do. . . .	Capt. C. U. Price.
27 $\frac{1}{2}$	23 $\frac{1}{8}$	6	18 $\frac{3}{4}$	Do. . . .	A. Bayley-Worthington.
27 $\frac{1}{2}$	23 $\frac{1}{2}$	5 $\frac{3}{8}$	21 $\frac{1}{2}$	Do. . . .	H. C. Phipps.
27 $\frac{3}{8}$	21 $\frac{5}{8}$	6	12	Do. . . .	G. M. Spencer Smith.
27 $\frac{3}{8}$	24	6	15	Do. . . .	Major C. S. Cumberland.
27 $\frac{1}{4}$	22 $\frac{1}{2}$	5 $\frac{3}{4}$	10 $\frac{1}{2}$	Do. . . .	Capt. J. A. Hannynnton.
27 $\frac{1}{4}$	21	6 $\frac{1}{4}$	8 $\frac{1}{2}$	Do. . . .	A. H. Wheeler.
27	22 $\frac{1}{4}$	6	16	Do. . . .	Hon. Walter Rothschild.
27	22 $\frac{1}{4}$	6	10 $\frac{3}{4}$	Do. . . .	Major A. E. Smith.
27	21 $\frac{1}{2}$	6	16 $\frac{3}{4}$	Do. . . .	F. H. Barber.
26 $\frac{3}{4}$	22 $\frac{1}{4}$	6 $\frac{1}{4}$	14 $\frac{3}{4}$	Do. . . .	W. J. Chapman.
26 $\frac{3}{4}$	22 $\frac{1}{2}$	6	13 $\frac{1}{2}$	Do. . . .	P. B. Vander-Byl.
26 $\frac{3}{4}$	21 $\frac{3}{4}$	5 $\frac{1}{4}$	14 $\frac{3}{4}$	Do. . . .	J. R. Baas.
26 $\frac{3}{4}$	21	6 $\frac{1}{2}$	16 $\frac{1}{2}$	Do. . . .	W. F. Wailes-Fairbairn.
26 $\frac{1}{2}$	21 $\frac{1}{2}$	6	11	Do. . . .	G. L. Harrison.
26 $\frac{1}{2}$	22 $\frac{1}{2}$	6 $\frac{1}{4}$	18 $\frac{1}{2}$	Do. . . .	Major G. Lumaden.
26 $\frac{1}{2}$	20	10	6 $\frac{1}{2}$	Do. . . .	C. B. C. Storey.

RECORDS OF BIG GAME

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
26½	21	5¾	10¼	East Africa . . .	B. C. Ransome.
-26½	20½	6	15½	Do.	W. Wailes-Fairbairn.
26¼	23	6¼	18¾	Do.	T. P. A. Holford.
26¼	19¾	5¾	22¼	Do.	C. W. Hobley.
26	21	6¼	13	Do.	Major E. J. Tickell.
26	20¾	6	16½	Do.	Norman B. Smith.
26	21¼	6	19½	Do.	G. Chetwynd.
26	22	6	18	Do.	T. D. M. Cardeza.
26	21¾	5¾	17	Do.	R. Wahrmann.
26	22	6½	14½	Do.	Col. D. M. Lumsden.
-25½	20	6	14	Matamiri Bush . .	F. Vaughan Kirby.
24½	19¾	5¾	12¾	South Africa . . .	British Museum.
24¼	...	...	...	Transvaal	Abel Chapman.
24	20	5½	12	Chobi Valley . . .	F. C. Selous.

The following specimens belong to the Angola race :—

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight.				
23¾	19¾	6	14¾	Angola	C. W. Sharp.
23¼	...	5½	15	Do.	A. H. Harrison.
23¼	18¾	6	12¼	Kaokoland	Capt. F. Cookson.
23¼	18½	5¾	9¾	Angola	W. C. Neilson.
21¼	18	5¼	19¼	S.W. Africa	A. N. Henderson.
-21¼	18	6½	11	Angola	E. P. Cooper.
21	17¾	5¾	11¾	Do.	Hon. Walter Rothschild.
21	17¾	6	9¾	Do.	Rowland Ward.

- Owner's measurements.

The following specimens belong to the British Central African race:—

On front curve.	Length.		Tip to Tip.	Locality.	Owner.
	Straight.	Circumference.			
22	18 $\frac{1}{4}$	5 $\frac{1}{4}$	11	British Central Africa . . .	A. V. Willcox.
21	18 $\frac{1}{2}$	4 $\frac{3}{4}$	11 $\frac{3}{4}$	Do.	Capt. J. S. Brogden.
20	16	5 $\frac{1}{4}$	8 $\frac{1}{2}$	N.E. Rhodesia	F. H. Melland.
20	16	5	6 $\frac{1}{2}$	Do.	H. Cookson.
19 $\frac{3}{4}$	16 $\frac{1}{2}$	5 $\frac{1}{2}$	6 $\frac{3}{8}$	N.W. Rhodesia	Major J. Carden.



Head of Pala.



1Horns 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.

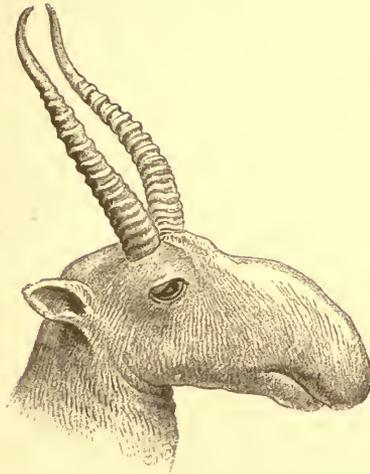
Distribution.—The steppes of Southern Russia and South-Eastern Siberia. Formerly the range extended to the confines of Poland, but the species is now restricted to the Kalmuk Steppes between the rivers Don and Volga and Siberia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{3}{4}$	5 $\frac{1}{2}$	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.
12 $\frac{3}{4}$	5	2	?	Imperial Museum, Vienna.
12 $\frac{1}{2}$	5	4 $\frac{1}{4}$	Siberia	Dublin Museum.

— Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12 $\frac{1}{4}$	5	5 $\frac{7}{8}$	Siberia	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.



Horns of Chiru.

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 a near ally of 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.

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.

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 .	A. O. Hume.
27 $\frac{5}{8}$	5 $\frac{1}{2}$	11 $\frac{1}{4}$	Tibet	Sir Robert Harvey, Bart.
27 $\frac{1}{8}$	5 $\frac{7}{8}$	15 $\frac{3}{8}$	North of Beansi Pass .	A. O. Hume.
27	6	14 $\frac{1}{2}$	?	Hon. Walter Rothschild.
-27	5 $\frac{5}{8}$	14 $\frac{1}{4}$	Tibet	Capt. K. Channer.
-27	...	12	?	J. D. Inverarity.
-26 $\frac{3}{4}$	6	13 $\frac{3}{4}$	Tibet	Dr. Albert von Stephani.
26 $\frac{3}{4}$	5 $\frac{5}{8}$	12 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
-26 $\frac{3}{4}$	...	17 $\frac{1}{4}$	Tibet	F. M. Bailey.
-26 $\frac{1}{2}$	...	...	Chang-chenmo . . .	Lieut.-Col. A. E. Ward.
-26	5 $\frac{3}{4}$	11	Tibet	J. Ff. Darling.
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 $\frac{1}{2}$	5 $\frac{3}{4}$	13 $\frac{3}{4}$	?	W. H. Wilson.
25 $\frac{3}{8}$	5 $\frac{5}{8}$	12 $\frac{1}{2}$	North of Leh . . .	British Museum (Hume Collection).
25	5 $\frac{3}{4}$	11 $\frac{1}{2}$	Chang-chenmo . . .	H. Z. Darrah. (See illustration.)
-25 $\frac{1}{4}$	5	10 $\frac{3}{4}$	Tibet	P. H. G. Powell-Cotton.
24 $\frac{3}{4}$	5	11	?	E. L. Phelps.
24 $\frac{3}{4}$	5 $\frac{1}{2}$	15 $\frac{1}{2}$	Chinese Tibet . . .	Capt. J. A. Stewart-Balmain.
24 $\frac{5}{8}$	5 $\frac{5}{8}$	11 $\frac{3}{4}$	Tibet	Sir Robert Harvey, Bart.
-24 $\frac{1}{2}$	4 $\frac{3}{4}$	...	Do.	Major-General A. A. A. Kinloch.
24 $\frac{1}{2}$	5	12 $\frac{3}{4}$	Do.	Capt. H. H. P. Deasy.
24 $\frac{1}{4}$	4 $\frac{3}{4}$	18 $\frac{1}{4}$	?	D. L. R. Lorimer.
24 $\frac{1}{4}$	5 $\frac{1}{4}$	13 $\frac{1}{2}$	?	Capt. W. F. Corbett.
-24 $\frac{1}{4}$	5 $\frac{1}{8}$	13 $\frac{3}{4}$	Tibet	B. H. Shaw Stewart.
-24	5 $\frac{1}{8}$	16 $\frac{1}{2}$	?	Major H. W. Codrington.
-24	...	...	Chang-chingris . . .	Otho Shaw.
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.
-24	...	...	Chang-chenmo . . .	Major H. Trevor.
-24	...	...	?	Indian Museum.
-24	...	...	?	H.H. the Maharaja of Travancore.

- Owner's measurements.



Horns of Springbuck, from Mr. F. H. Barber's specimen.

The SPRINGBUCK (*Antidorcas euchores*).

Although nearly allied to the gazelles, both in bodily form, coloration, and the shape of the horns, 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. Owing to the dark nose-streak stopping short at the level of the eyes, the springbuck has more white on the face than is the case with the majority of gazelles; and the white on the rump, which includes the tail and joins that of the middle of the back, also occupies a larger area. Height at shoulder, 30 inches.

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 Botletli 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.
¹ 19	5	20 $\frac{1}{4}$	Kalahari . . .	The late W. F. Webb.
-18 $\frac{3}{8}$	...	12 $\frac{1}{2}$	?	P. C. Keytel.
-17	...	...	Middelburg Flats . . .	F. H. Barber. (See illustration.)
16 $\frac{3}{4}$	6	6	?	J. Rosen.
-16 $\frac{1}{2}$	...	...	Bechuanaland . . .	Vryburg Club.
16	6	7	?	W. A. Simpson Hinchliffe.
-16	...	6 $\frac{1}{2}$	Griqualand West . . .	Capt. G. S. Leslie.
15 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{1}{4}$	?	Hon. T. Thynne.
15 $\frac{1}{2}$	6 $\frac{1}{4}$	5	?	Julius Jeppe.
-15 $\frac{1}{2}$	6 $\frac{1}{2}$	...	?	Dr. Maloney.
15 $\frac{1}{2}$	6 $\frac{3}{8}$	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 $\frac{3}{8}$	5 $\frac{1}{2}$	7	?	Major W. Anstruther Gray.
15 $\frac{3}{8}$	6 $\frac{1}{4}$	5 $\frac{7}{8}$	Ovampo Flats . . .	Capt. F. Cookson.
15	5 $\frac{3}{4}$	7	?	George Grey.
15	5 $\frac{1}{2}$	8 $\frac{1}{4}$	?	Major E. J. Lugard.
-15	6	6 $\frac{1}{4}$	?	A. Ohlsson.
-15	...	...	Langberg, Kimberley . .	South African Museum.
-15	...	10	?	Major James Grant.
14 $\frac{1}{4}$	5 $\frac{3}{4}$	4 $\frac{1}{2}$	?	C. L. Blundell.

- Owner's measurements.

¹ A malformed specimen.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{1}{4}$	6 $\frac{1}{4}$	5	?	C. Ansell.
14 $\frac{1}{4}$	6	2 $\frac{3}{4}$	?	C. Challis.
14	5 $\frac{3}{4}$	4 $\frac{1}{4}$	?	British Museum.
14	6	3	?	Hon. J. C. Lyttelton.
14	5 $\frac{1}{2}$	5	?	F. E. Potter.
13 $\frac{7}{8}$	6	5 $\frac{3}{8}$	Griqualand . . .	F. C. Selous.
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 $\frac{3}{8}$	5 $\frac{1}{2}$	4 $\frac{1}{4}$	Angola . . .	C. W. Sharp.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	5	Do. . . .	A. H. Harrison.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	5	Ngamiland . . .	H. A. Bryden.
♀ 13 $\frac{1}{2}$	4	6 $\frac{3}{4}$	?	Julius Jeppe.
♀ 13	...	...	Middelburg Flats . . .	F. H. Barber.
- ♀ 13	...	...	South Africa . . .	Alfred Ebdon.
♀ 11 $\frac{1}{2}$	3	6 $\frac{1}{4}$	Angola . . .	C. W. Sharp.

- Owner's measurements.



Head of Goa.

The GOA or TIBETAN GAZELLE (*Gazella picticaudata*).

The true gazelles form a large group of delicately built antelopes. They are of medium or rather small size, with the muzzle of ordinary shape, the neck not unduly elongated, and no fold containing a crest of long erectile hairs down the middle of the back. To suit the nature of their haunts, their coloration is generally of a sandy hue, with the under parts white, and the face in most cases marked with parallel dark and light longitudinal streaks; dark bands being also frequently present on the rump and on the flanks to separate the tawny of the back from the white beneath. The knees are very generally furnished with brush-like tufts of long, stiff hairs; and the tail is either short or of medium length. With the exception of four species, horns are present in both sexes; those of the males being stout, distinctly ridged, and generally of about the same length as the head, although occasionally much longer. Except at the tips, they curve backwards, so as to present an anteriorly convex lower portion, above which they are generally more or less curved forwards and upwards. Gazelles have a wider geographical distribution than any other genus of antelopes, and are, for the most part, inhabitants of more or less desert regions, or their confines.

The Tibetan goa belongs to a small and aberrant group of the genus, in which the tail is very short, the usual dark and light streaks on the face are wanting, and the females are hornless. As a species, it 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 white rump and the absence of face-glands. 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 $\frac{1}{4}$	3 $\frac{5}{8}$	2	Hanle, Spiti . . .	Hon. Walter Rothschild.
13 $\frac{3}{4}$	3 $\frac{3}{4}$	3	Ladak . . .	Major G. F. Mockler.
13 $\frac{1}{2}$	3 $\frac{5}{8}$	5 $\frac{1}{4}$	N. of Sikkim . . .	British Museum (Hume Collection).
-13 $\frac{1}{4}$	4	...	Tibet . . .	Major-General A. A. A. Kinloch.
-13 $\frac{1}{4}$	3 $\frac{1}{2}$	3	Ladak . . .	Major H. W. Codrington.
13 $\frac{3}{8}$	4 $\frac{3}{4}$	3 $\frac{3}{4}$	Do. . . .	Capt. Neill Malcolm.
13 $\frac{3}{8}$	4	3 $\frac{5}{8}$	Tibet	H. C. V. Hunter.
-13 $\frac{1}{8}$	3 $\frac{5}{8}$	6 $\frac{1}{4}$	S. E. of Hanle . . .	P. H. G. Powell-Cotton.
-13	3 $\frac{3}{4}$	5 $\frac{3}{4}$	Tibet	Bombay Natural History Society.
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 $\frac{1}{8}$	?	W. T. Hodgson.
-13	...	...	?	Indian Museum.
13	3 $\frac{3}{4}$	5 $\frac{3}{8}$	N. of Sikkim . . .	Major A. Pearse.
-12 $\frac{1}{2}$ $\frac{5}{8}$	3 $\frac{5}{8}$	4	Tibet	Officers' Mess, 3rd Goorka Rifles.
12 $\frac{7}{8}$	3 $\frac{7}{8}$	4 $\frac{3}{4}$	Hills N. of Kumaon	A. O. Hume.
12 $\frac{7}{8}$	3 $\frac{7}{8}$	4 $\frac{3}{8}$	?	British Museum (B. H. Hodgson).
12 $\frac{3}{4}$	4	6 $\frac{1}{4}$	Ladak	Baroda State Museum.
12 $\frac{3}{4}$	4	4 $\frac{3}{4}$	Do. . . .	Lord Stavordale.
12 $\frac{5}{8}$	3 $\frac{1}{2}$	2 $\frac{1}{4}$	Do. . . .	K. C. Zarzhetsky.
12 $\frac{5}{8}$	4 $\frac{3}{4}$	5 $\frac{1}{8}$	Near Hanle . . .	H. Z. Darrah.
12 $\frac{1}{2}$	3 $\frac{7}{8}$	2 $\frac{1}{2}$	?	Capt. Lord C. Fitzmaurice.
12 $\frac{3}{4}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	South of Hanle . . .	Col. F. C. Lister-Kay.
12 $\frac{1}{4}$	3 $\frac{1}{2}$	6 $\frac{1}{4}$	Ladak	David T. Hanbury.
-12 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	Tibet	Paris Museum (Prince Henri d'Orléans).
12 $\frac{1}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{2}$	Do. . . .	Capt. F. G. T. Deshon.
12 $\frac{1}{4}$	3 $\frac{1}{2}$	6 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
12 $\frac{1}{8}$	3 $\frac{5}{8}$	5	Ladak	Sir F. E. S. Adair.

- Owner's measurements.

PRZEWALSKI'S GAZELLE (*Gazella 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; no tufts of hair on the knees.

Distribution.—Mongolia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{1}{4}$	4 $\frac{3}{8}$	2 $\frac{3}{4}$	?	British Museum.
10	4	4 $\frac{5}{8}$	?	H.R.H. Henri de Bourbon, Comte de Bardi.
9 $\frac{3}{4}$	4 $\frac{1}{8}$	4 $\frac{3}{8}$	North of Pekin	British Museum (R. Swinhoe).
8 $\frac{11}{16}$	3 $\frac{3}{8}$	4 $\frac{3}{8}$	North China	Paris Museum (Père A. David).

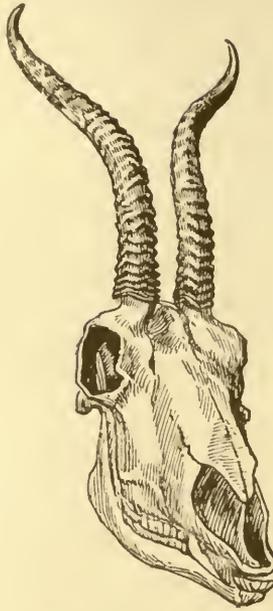
- Owner's measurements.

MONGOLIAN GAZELLE (*Gazella gutturosa*).

Jaeisw or *Sava-keek* in Turkestan. *Hwang-yang* in Mongolia.

Belonging to the same group of the genus as the goa, this larger species takes its scientific title from the peculiar swollen condition of the throat of the male during the pairing season. In addition to its size (height at shoulder about 30 inches), the species is characterised by the comparatively slight backward curvature of the horns, which are not hooked at the tips; the general colour being pale fawn, with the rump, flanks, and the whole of the limbs white.

Distribution.—Northern and Eastern Mongolia, part of Turkestan, and the southern borders of Russian Transbaikalia. This gazelle was discovered by the Russian traveller Pallas, who described it so long ago as the year 1777.



Skull and Horns of Mongolian Gazelle, from a specimen shot by Prince Demidoff.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{3}{4}$	5	6.34	Lob Nor . . .	A. O. Hume.
-15 $\frac{1}{2}$	...	5	Maralbashi . . .	H. Lennard.
-15 $\frac{1}{2}$	4 $\frac{1}{2}$	7 $\frac{1}{2}$	Dscheran . . .	Dr. Albert von Stephani.
14 $\frac{3}{4}$	4 $\frac{7}{8}$	3	Chinese Turkestan . . .	Major C. S. Cumberland.
-14 $\frac{1}{2}$	3 $\frac{1}{10}$	4 $\frac{3}{4}$	Lob Nor . . .	Paris Museum (Prince Henri d'Orléans).
13 $\frac{3}{4}$	4 $\frac{7}{8}$	4 $\frac{1}{2}$	Chinese Turkestan . . .	E. L. Phelps.
13 $\frac{3}{4}$	5	4	Do. . .	J. V. Phelps.
13 $\frac{3}{4}$	4 $\frac{1}{2}$	6	Saissan, West Siberia	British Museum (Dr. O. Finsch).
13 $\frac{1}{2}$	4 $\frac{3}{8}$	6 $\frac{3}{8}$	?	Lieut.-Col. W. D. Bruce.

- Owner's measurements.



Skulls and Horns of Yarkand and Persian Races of the Goitred Gazelle. The specimens in the right top corner and lower central figure alone belong to the Persian race. All five are in the Collection of Mr. A. O. Hume.

GOITRED GAZELLE (*Gazella subgutturosa*).

A near relation of the Mongolian species, but distinguished by the much longer tail, of which the upper surface is crested with black, and the presence of dark and light markings on the face. These face-markings differ, however, from those of all other species save the Marica gazelle (*G. marica*) of Arabia, in that the upper portion of the face, in adult individuals of the typical race, is pure white, so that the central dark band is interrupted on the forehead. From the Marica the goitred gazelle may be distinguished by its superior size (height at shoulder from 26 to 27 inches), and the absence of horns in the female. The larynx is swollen, forming a peculiar prominence on the front of the upper part of the throat.

There are three distinct local races of this gazelle, the ordinary Caspian and Persian *G. subgutturosa typica*, the Yarkand *G. s. yarcandensis*, distinguished by its superior dimensions and darker face-markings, and the Altai *G. s. sairensis*, in which the bodily size is large, but the horns are relatively small.

Distribution.—Western Asia from Asia Minor and Caucasia in the west to Turkestan, and Mongolia 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.
14 $\frac{3}{4}$	4 $\frac{1}{2}$	9 $\frac{1}{2}$	?	Hon. Walter Rothschild.
14 $\frac{1}{2}$	4	4 $\frac{1}{2}$	Baluchistan . . .	Capt. T. W. Greenfield.
-14 $\frac{1}{4}$	5 $\frac{1}{4}$	6	Near Tiflis . . .	Clive Phillipps-Wolley.
14 $\frac{1}{4}$	4 $\frac{1}{4}$	3	Wana Plain, Waziristan	A. J. Grant.
-13 $\frac{5}{8}$	4 $\frac{5}{8}$	5	Persia . . .	Imperial Museum, Vienna.
13 $\frac{1}{4}$	4 $\frac{1}{4}$	4	Khelat . . .	A. O. Hume.
13	4 $\frac{3}{4}$	4 $\frac{1}{4}$	Persia . . .	E. Rennie.
-12 $\frac{7}{8}$	3 $\frac{3}{4}$	7	Syria . . .	Dr. Albert von Stephani.

A. *The following specimens belong to the Altai race:—*

11 $\frac{3}{4}$	4 $\frac{1}{2}$	6	Altai . . .	Sir Edmund G. Loder, Bart.
11	4 $\frac{3}{4}$	4 $\frac{3}{4}$	Do. . .	St. George Littledale.
11	4 $\frac{1}{2}$	6 $\frac{1}{4}$	Do. . .	A. Louw.
10 $\frac{7}{8}$	4	6 $\frac{5}{8}$	Do. . .	P. B. Vander-Byl.
10 $\frac{1}{2}$	4	5 $\frac{1}{2}$	Do. . .	Hon. Walter Rothschild.
10	4 $\frac{5}{8}$	6	Do. . .	Prince E. Demidoff.
10	4	4	Do. . .	J. R. Bradley.
9 $\frac{7}{8}$	4 $\frac{1}{8}$	6 $\frac{1}{4}$	Do. . .	Lord Elphinstone.

- Owner's measurements.

B. *The under-mentioned specimens belong to either the Yarkand or Altai races :—*

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16 $\frac{5}{8}$	4 $\frac{1}{2}$	6 $\frac{3}{4}$	Kuldja . . .	Sir Edmund G. Loder, Bart.
16	5	3 $\frac{1}{4}$	Yarkand . . .	A. O. Hume.
15 $\frac{7}{8}$	5	3 $\frac{1}{4}$	Do.	Do.
14	4 $\frac{3}{4}$	5.75	Do.	Do.
14	5	5 $\frac{3}{4}$	Eastern Turkestan . . .	Col. J. Biddulph.
13 $\frac{1}{2}$	4 $\frac{3}{4}$	6 $\frac{3}{8}$	Maralbashi . . .	David T. Hanbury.
13 $\frac{3}{8}$	5 $\frac{3}{16}$	7 $\frac{1}{8}$	Altai	Paris Museum (Prince Henri d'Orléans).
13	4 $\frac{5}{8}$	7 $\frac{1}{8}$	Maralbashi . . .	P. Church.
12 $\frac{3}{4}$	4 $\frac{3}{8}$	3 $\frac{3}{8}$	Altai	St. George Littledale.
12	...	2	Maralbashi . . .	H. Lennard.

- Owner's measurements.



Skull and Horns of Yarkand Goitred Gazelle from Kuldjá, in the possession of Sir Edmund G. Loder, Bart.



Head of Dorcas Gazelle.

DORCAS GAZELLE (*Gazella dorcas*).

This well-known species brings us to the more typical group of gazelles, in the members of which the central dark face-band is continued uninterruptedly up the forehead, and horns are developed in both sexes. Among the special characteristics of the present species may be noted the circumstance that the white area of the rump does not invade the fawn of the back, 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. Height at shoulder, 21 to 22 inches; total length about 42 inches. General colour pale fawn, of rather variable tint, with the face-markings distinct.

Distribution.—Morocco, Algeria, and thence eastwards through Egypt into Palestine and Syria; southwards to Nigeria and the Sudan. To the Arabs of Algeria this gazelle is known as rhozal or hemar.

DORCAS GAZELLE

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Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{3}{8}$	4 $\frac{1}{4}$	2 $\frac{3}{4}$	Kordofan	F. P. Nathan.
13 $\frac{1}{8}$	4	3 $\frac{1}{2}$	Syria	H. H. Youssouf Kamal.
13 $\frac{1}{8}$	4 $\frac{1}{4}$	3 $\frac{1}{2}$	Algeria	Sir Edmund G. Loder, Bart.
13	4	3 $\frac{1}{2}$	El Obeid, Kordofan	Capt. J. G. A. Massy.
12 $\frac{3}{4}$	3 $\frac{7}{8}$	4	Algeria	A. Louw.
12 $\frac{3}{4}$	4	4 $\frac{5}{8}$	Kordofan	Capt. J. C. Graham.
12 $\frac{5}{8}$	3 $\frac{3}{8}$	4 $\frac{5}{8}$	Sudan	Brig.-Gen. B. T. Mahon.
12 $\frac{1}{2}$	3 $\frac{5}{8}$	5 $\frac{1}{8}$	Algeria	Viscount Edmond de Poncins.
12 $\frac{1}{2}$	3 $\frac{5}{8}$	3 $\frac{3}{4}$	Southern Sahara	J. I. S. Whitaker.
12 $\frac{1}{2}$	4	2 $\frac{3}{4}$	Kordofan	Major C. J. Hawker.
12 $\frac{1}{2}$	4 $\frac{1}{2}$	3	Do.	Major C. S. Cumberland.
12 $\frac{3}{8}$	3 $\frac{3}{8}$	...	Southern Sahara	British Museum.
12 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	Do.	A. E. Pease.
12 $\frac{1}{8}$	4 $\frac{1}{4}$	3 $\frac{1}{2}$	Kordofan	Capt. J. H. Rivers.
12	4	3 $\frac{3}{4}$	Southern Sahara	J. H. Thomas.
11 $\frac{7}{8}$	4	4	Kordofan	Major G. Lumsden.
11 $\frac{7}{8}$	3 $\frac{5}{8}$	4 $\frac{1}{2}$	?	Sir Victor Brooke's Collection.
11 $\frac{7}{8}$	4	2	Kordofan	Capt. C. E. Hills.
11 $\frac{3}{4}$	3 $\frac{3}{4}$	5 $\frac{1}{8}$	?	Julius Jeppe.
11 $\frac{3}{4}$	4	4	?	E. N. Buxton.
♀ 11 $\frac{1}{4}$	2 $\frac{3}{8}$	5 $\frac{3}{4}$	Kordofan	Capt. J. H. Rivers.
10 $\frac{3}{4}$	4 $\frac{1}{4}$	2 $\frac{1}{4}$	Lake Tchad	Capt. J. K. Cochrane.
10 $\frac{5}{8}$	4	3	N. Nigeria	Capt. G. B. Gosling.
♀ 9 $\frac{7}{8}$	...	...	Algeria	A. E. Pease.

- Owner's measurements.

EDMI or ATLAS GAZELLE (*Gazella cuvieri*).

From the dorcas the present species may be readily distinguished by its superior size, the imperfectly lyrate form of the horns, which diverge more or less regularly upwards, the presence of a black spot on the tip of the muzzle, and the rough character of the hair. 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 pure white. Height at shoulder from 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 $\frac{5}{8}$	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 $\frac{1}{2}$	3 $\frac{7}{8}$	3 $\frac{1}{2}$	Algeria	A. E. Pease.
14 $\frac{1}{4}$	3 $\frac{7}{8}$	5 $\frac{1}{2}$	Do.	A. Louw.
14 $\frac{1}{4}$	4	3 $\frac{1}{4}$	Do.	F. H. Barber.
♀ 13 $\frac{7}{8}$	3 $\frac{1}{2}$	7 $\frac{1}{8}$	Do.	E. N. Buxton.
-13 $\frac{5}{8}$	4 $\frac{1}{4}$	5 $\frac{1}{2}$	Do.	Viscount Edmond de Poncins.
13 $\frac{3}{8}$	4 $\frac{1}{2}$	7 $\frac{1}{8}$	Do.	Hon. G. Gordon.
-13 $\frac{1}{8}$	4 $\frac{3}{8}$	2 $\frac{7}{8}$	Do.	Dr. Albert von Stephani.
12 $\frac{3}{4}$	4 $\frac{3}{8}$	3 $\frac{5}{8}$	Do.	E. N. Buxton.
-12 $\frac{3}{4}$	...	...	Do.	Capt. J. Marriott.
-12 $\frac{3}{4}$	...	4 $\frac{1}{4}$	Do.	Major W. Anstruther Gray.
12 $\frac{1}{2}$	3 $\frac{3}{4}$	4 $\frac{3}{4}$	Do.	A. Ohlsson.
♀ 11	2 $\frac{1}{2}$	5 $\frac{7}{8}$	Do.	J. I. S. Whitaker.

- Owner's measurements.

ARABIAN GAZELLE (*Gazella arabica*).

Belonging to the same sub-group of the genus as the edmi, this elegant gazelle may be differentiated from that species by its smaller size, smoother hair, and darker coloration, the general tint of the upper parts being dark smoky fawn, with the central face-band rufous fawn, and a black spot on the tip of the muzzle. Height at shoulder, 24 or 25 inches.

Distribution.—Western Arabia, where it is known as ghasal, its Syrian title being ariel or aiel. In spite of its being one of the commonest of the gazelles, and also one which can easily be obtained in captivity, very little authentic information is forthcoming as to its habits, and even its range is not yet fully determined.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{3}{4}$	4 $\frac{3}{8}$	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 $\frac{3}{8}$	South Arabia	Sir Victor Brooke's Collection.
♀ 4 $\frac{1}{2}$	1 $\frac{3}{4}$	2 $\frac{1}{2}$	?	Lieut.-Col. H. G. C. Swayne.

— Owner's measurements.



Head of Indian Gazelle.

INDIAN GAZELLE (*Gazella bennetti*).

Closely allied to the Arabian species, this gazelle (the chinkara of the natives and the ravine-deer of many Anglo-Indian sportsmen) is of smaller dimensions and much lighter colour; the height at the shoulder varying from 23 to 24 inches, and the general colour of the upper parts being dull fawn.

Distribution.—Peninsular India, thence extending westward through Baluchistan to the shores of the Persian Gulf. In the *Book of Antelopes* Messrs. Sclater and Thomas remark that, like the lion and the hunting-leopard, this gazelle belongs to an African type, and appears to have been originally a migrant from the west into India, whence it has spread over the greater part of the peninsula. It should, however, be remembered that extinct gazelles and hunting-leopards occur in the north of India.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{3}{4}$	4 $\frac{3}{4}$	5 $\frac{1}{2}$	?	Major P. C. Palin.
15 $\frac{3}{4}$	4 $\frac{1}{2}$	...	Ferozepore . . .	Mess, 14th Sikhs.
-15 $\frac{1}{2}$	...	...	?	Major H. J. Jones.

- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-15	5	...	Rajputana . . .	H. H. Maharaj Rana Bahadur of Jhalawar.
14 $\frac{3}{4}$	4 $\frac{1}{2}$	8	Punjab . . .	C. H. Shanau.
14 $\frac{1}{2}$	4 $\frac{1}{2}$	8 $\frac{5}{8}$	Dholpur . . .	L. M. le Champion.
-14 $\frac{1}{4}$	...	...	Ferozepore District .	Captain Harry V. Brooke.
-14 $\frac{1}{4}$	...	6 $\frac{3}{8}$	Dholpur . . .	Mrs. W. W. Baillie.
-14 $\frac{1}{8}$	...	...	Sirsa District, Punjab	Major H. Trevor.
-14 $\frac{1}{8}$	...	4	?	Major W. Anstruther Gray.
14	4 $\frac{7}{8}$	5 $\frac{3}{4}$	Ferozepore District .	Capt. Harry V. Brooke.
-14	...	...	Near Lahore . . .	Measured by General Kinloch.
-13 $\frac{7}{8}$	4 $\frac{1}{4}$	6 $\frac{1}{2}$	Do. . . .	C. P. Down.
13 $\frac{3}{4}$	4 $\frac{1}{2}$	7	?	Sir Victor Brooke's Collection.
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 $\frac{3}{8}$	Mutra, N.W.P. . .	Major G. F. Mockler.
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	3 $\frac{1}{2}$	6	Bikanir	Lieut.-Col. H. C. Morland.
13	3 $\frac{3}{4}$	6	?	Lieut.-Col. R. H. Ratray.
12 $\frac{3}{4}$	4 $\frac{1}{4}$	5	Goorgaon, Punjab .	A. O. Hume.
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 $\frac{3}{4}$	6 $\frac{3}{4}$	Bikanir	Major H. W. Codrington.
12 $\frac{3}{4}$	4	6	Jodhpore	H. H. the Maharaja of Bikanir.
12 $\frac{3}{8}$	4	5 $\frac{1}{2}$	Simrol, Bengal . .	British Museum (Colonel Evans).
♀ 7 $\frac{1}{8}$	$\frac{5}{8}$	2 $\frac{1}{4}$	?	Sir Victor Brooke's Collection.

- Owner's measurements.



Head of Speke's Gazelle.

SPEKE'S GAZELLE (*Gazella spekei*).*Dhero* of the Somalis.

From the edmi and its allies, with which it agrees in its leading characteristics, this very peculiar gazelle is readily distinguished by the development of a flabby corrugated elevation on the skin of the nose; the general colour of the upper parts being 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 probably 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 is therefore probably capable of distension during life.

Distribution.—The plateau in the interior of Somaliland.

Length on front curve.	Circumference.	Tip to Tip.	Owner.
-12½	...	3½	P. C. Keytel.
-12¾	4¾	4	Dr. Albert von Stephani.
-12	3¾	5¼	Viscount Edmond de Poncins.

- Owner's measurements.

Length on front curve.	Circum- ference.	Tip to Tip.	Owner.
11 $\frac{3}{4}$	3 $\frac{3}{4}$	4 $\frac{5}{8}$	Lieut.-Col. H. G. C. Swayne.
11 $\frac{5}{8}$	3 $\frac{3}{4}$	2 $\frac{1}{2}$	Lieut.-Gen. Sir Arthur Paget.
11 $\frac{1}{2}$	4 $\frac{3}{8}$	2 $\frac{3}{4}$	T. W. H. Clarke.
11 $\frac{1}{2}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Capt. A. H. W. Temple.
11 $\frac{1}{4}$	4	4 $\frac{1}{4}$	Col. H. D. Olivier.
11 $\frac{1}{4}$	4	4	W. H. Cobb.
11 $\frac{1}{4}$	4 $\frac{1}{8}$	4	Capt. H. W. Thorpe.
11 $\frac{1}{4}$	4	4	Major P. C. Elliott-Lockhart.
11 $\frac{1}{8}$	4	5 $\frac{1}{4}$	C. Liddell.
11	4	4 $\frac{1}{2}$	J. H. Whitehouse.
11	4	4	A. H. Straker.
11	3 $\frac{7}{8}$	5	Lieut.-Col. H. C. Morland.
11	4 $\frac{1}{8}$	3 $\frac{5}{8}$	Lord Delamere.
11	4	3 $\frac{7}{8}$	Capt. A. du B. O'Neill.
11	4	2 $\frac{3}{4}$	R. E. Drake Brockman.
10 $\frac{3}{4}$	3 $\frac{1}{4}$	3 $\frac{3}{4}$	Sir Edmund G. Loder, Bart.
10 $\frac{3}{4}$	4 $\frac{5}{8}$	5 $\frac{1}{4}$	Capt. B. R. M. Glossop.
10 $\frac{3}{4}$	4	4	R. M'D. Hawker.
10 $\frac{3}{4}$	3 $\frac{7}{8}$	3	C. N. Welsh.
10 $\frac{3}{4}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	E. Lort-Phillips.
10 $\frac{3}{4}$	4	3 $\frac{3}{4}$	Capt. B. Vincent.
10 $\frac{3}{4}$	4	4 $\frac{3}{4}$	A. Louw.
- ♀ 9 $\frac{7}{8}$	...	...	J. Menges.
♀ 9 $\frac{1}{2}$	2 $\frac{7}{8}$	3 $\frac{1}{4}$	T. W. H. Clarke.

- Owner's measurements.



Head of Pelzeln's Gazelle.

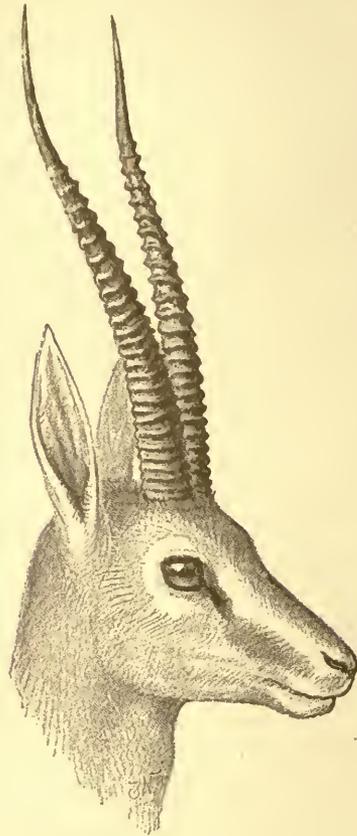
PELZELN'S GAZELLE (*Gazella pelzelni*).

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 lateral 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. It is termed by the natives dhero, in common with Speke's gazelle.

Length on front curve.	Circumference.	Tip to Tip.	Owner.
-13 $\frac{3}{10}$	...	...	J. Menges.
-13 $\frac{1}{8}$	4 $\frac{1}{2}$	3 $\frac{1}{2}$	P. C. Keytel.
12 $\frac{7}{8}$	3 $\frac{1}{2}$	5 $\frac{5}{8}$	Capt. H. M'Lear.
12 $\frac{1}{4}$	3 $\frac{3}{4}$	4 $\frac{1}{4}$	Lieut.-Col. H. G. C. Swayne.
12 $\frac{1}{4}$	4 $\frac{1}{8}$	5 $\frac{1}{2}$	Lord Delamere.
-12 $\frac{3}{10}$	3 $\frac{7}{8}$	4	Capt. M. M'Neill.
12 $\frac{1}{8}$	3 $\frac{5}{8}$	4 $\frac{1}{4}$	The late W. Babington.
-12	3 $\frac{1}{8}$	4 $\frac{3}{4}$	Count E. Hoyos.
12	3 $\frac{3}{4}$	4 $\frac{1}{2}$	Capt. A. G. Stevenson.
12	3 $\frac{3}{4}$	4 $\frac{1}{2}$	Capt. G. Campbell.
12	3 $\frac{3}{4}$	5 $\frac{1}{4}$	Viscount Edmond de Poncins.
12	3 $\frac{1}{2}$	5 $\frac{1}{4}$	Capt. C. R. Kelly.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	T. W. H. Clarke.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{1}{4}$	Lieut.-Col. H. C. Morland.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	5	Capt. W. H. Williamson.
11 $\frac{1}{2}$	3 $\frac{3}{4}$	4 $\frac{5}{8}$	W. F. Whitehouse.
11 $\frac{1}{2}$	3 $\frac{1}{2}$	4 $\frac{1}{2}$	G. W. Denison.
11 $\frac{1}{4}$	4 $\frac{1}{8}$	5 $\frac{1}{2}$	A. H. Straker.
11 $\frac{1}{4}$	3 $\frac{5}{8}$	4 $\frac{3}{8}$	Rowland Ward.
11 $\frac{1}{4}$	4	3 $\frac{1}{2}$	Sir Edmund G. Loder, Bart.
11 $\frac{1}{8}$	3 $\frac{5}{8}$	4 $\frac{1}{4}$	Major G. F. T. Leather.
11 $\frac{1}{8}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Lieut.-Gen. Sir Arthur Paget.
11 $\frac{1}{8}$	3 $\frac{1}{2}$	4 $\frac{1}{4}$	Hon. Walter Rothschild.
11	3 $\frac{1}{2}$	4 $\frac{1}{4}$	Capt. Neill Malcolm.
11	3 $\frac{3}{4}$	4 $\frac{1}{8}$	A. S. Trevor.
11	3 $\frac{3}{4}$	3 $\frac{3}{4}$	R. M'D. Hawker.
♀ 8 $\frac{5}{8}$	...	...	J. Menges.
♀ 8 $\frac{1}{4}$	2 $\frac{1}{8}$	3 $\frac{1}{2}$	W. F. Whitehouse.

- Owner's measurements.



Head of Loder's Gazelle.

LODER'S GAZELLE (*Gazella leptoceros*).

Arab name, *Rhim*.

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. Agreeing with the preceding members of the group in the white of the rump not invading the haunches, this species is easily recognisable by the long and slender form of the horns, and the very pale tone of the coloration 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. Height at shoulder about 28 inches. Weight, 34 lbs.

Distribution.—The sandy tracts of the interior of Algeria, Tunisia, and Western Egypt, thence extending southwards into Nubia and Sennar. The native name is rhem or rhim (reem).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15 $\frac{7}{8}$	3 $\frac{1}{2}$	6 $\frac{1}{4}$	South of Biskra . . .	Dr. Dawtrey Drewitt.
15 $\frac{3}{4}$	4	4 $\frac{1}{4}$	Southern Tunisia . . .	J. I. S. Whitaker.
15 $\frac{3}{4}$	3 $\frac{3}{4}$	8 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
14 $\frac{7}{8}$	4 $\frac{1}{8}$	8 $\frac{5}{8}$	Algiers	Dr. Albert von Stephani.
14 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{1}{2}$	South of Biskra . . .	F. H. Barber.
14 $\frac{1}{2}$	3 $\frac{1}{2}$	3	?	P. C. Keytel.
14 $\frac{7}{10}$	3 $\frac{5}{8}$	4 $\frac{3}{4}$	Algeria	Julius Jeppe.
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.
14	3 $\frac{5}{8}$	5 $\frac{1}{4}$	Tue Erg	A. E. Pease.
14	3 $\frac{3}{4}$	4 $\frac{3}{4}$	Algeria	Mr. Justice Hopley.
13 $\frac{5}{8}$	3 $\frac{3}{4}$	5 $\frac{1}{2}$	Do. . . .	W. E. Pease.
13 $\frac{1}{2}$	3 $\frac{3}{4}$	8 $\frac{3}{4}$	Southern Tunisia . . .	Sir Edmund G. Loder, Bart.
13 $\frac{1}{4}$	3 $\frac{3}{4}$	3 $\frac{3}{4}$	Sahara	Viscount Edmond de Poncins.
13 $\frac{1}{4}$	3 $\frac{1}{2}$	3 $\frac{3}{4}$	Do. . . .	A. Louw.
13 $\frac{1}{4}$	3 $\frac{1}{2}$	5 $\frac{3}{4}$	Southern Tunisia . . .	J. I. S. Whitaker.
13 $\frac{1}{4}$	4 $\frac{1}{4}$	5 $\frac{1}{8}$	Fayoum, Egypt . . .	Capt. S. S. Flower.
♀ 11 $\frac{3}{4}$	2	3 $\frac{3}{8}$	?	Julius Jeppe.
♀ - 11 $\frac{5}{8}$	...	...	Southern Tunisia . . .	J. Menges.

— Owner's measurements.

ISABELLA GAZELLE (*Gazella isabella*).*Gannai* of the natives.

In all the foregoing gazelles with horns in both sexes, the horns themselves have their tips slightly curved either inwards or upwards, and never bent back so as to form a right angle with the basal portion. On the other hand, the present species and the Muscat gazelle (*G. muscatensis*), while resembling the foregoing in the shape of the white rump-patch and the comparatively light tint of the flank-band, differ by the tips of the horns being hooked inwards or upwards so as to form nearly or completely a right angle. From its ally the present species differs by the pale fawn colour of the upper parts; the lateral bands and other markings being also fawn, instead of blackish. Height at shoulder about 25 inches.

Distribution.—The Red Sea littoral from Suakin to Massowa, and through the interior to Bogosland, Barca, and Taka.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
10 $\frac{3}{4}$	3 $\frac{7}{8}$	4 $\frac{5}{8}$	Sudan . . .	Major C. Levita.
10 $\frac{1}{4}$	4 $\frac{1}{4}$	3 $\frac{5}{8}$	El Obeid . . .	Capt. J. G. A. Massy.
10 $\frac{1}{2}$	3 $\frac{3}{4}$	4	White Nile . . .	Hon. F. E. Guest.
10 $\frac{1}{2}$	3 $\frac{7}{8}$	6 $\frac{1}{4}$	Sudan . . .	P. C. Lord.
10 $\frac{1}{4}$	4 $\frac{1}{4}$	2 $\frac{1}{2}$	Kordofan . . .	Hon. Walter Rothschild.
10 $\frac{1}{4}$	3 $\frac{3}{4}$	2 $\frac{3}{4}$	Anseba River, Abyssinia	Sir Victor Brooke's Collection.
10 $\frac{1}{4}$	3 $\frac{1}{4}$	4 $\frac{1}{8}$	Near Suakin . . .	Major W. Anstruther Gray.
10 $\frac{1}{4}$	3 $\frac{1}{4}$	4	Komayli, Abyssinia	British Museum (the late W. T. Blanford).
10	3 $\frac{3}{4}$	4	Sudan . . .	A. W. Haig.
9	3 $\frac{3}{4}$	4	Abyssinian Sudan . . .	H. Boughton Leigh.
9'14	4	3	Between Suakin and Kassala	Prince Henry of Liechtenstein.
97	2	3	Do.	Sir Victor Brooke's Collection.
97	1 $\frac{7}{8}$	2 $\frac{3}{4}$	Kordofan . . .	British Museum.

- Owner's measurements.

HEUGLIN'S GAZELLE (*Gazella tilonura*).

This well-marked species brings us to 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, in North-Eastern Africa. Very little is known of this rare species.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{3}{4}$	5	2	Sudan . . .	Major F. J. L. Howard.
11 $\frac{1}{4}$	4 $\frac{1}{4}$	3 $\frac{1}{2}$	Do. . . .	J. Rosen.
11 $\frac{1}{4}$	4	2 $\frac{1}{2}$	Do. . . .	Lieut.-Col. Hon. W. Coke.
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 $\frac{1}{8}$	Bogosland . .	British Museum.
10 $\frac{1}{2}$	4 $\frac{3}{8}$	3	Near Kassala . .	Prince Colloredo Mannsfeld.
10 $\frac{1}{2}$	4 $\frac{1}{4}$	3 $\frac{1}{4}$	?	Dublin Museum.
10 $\frac{1}{4}$	4 $\frac{1}{8}$	4 $\frac{1}{4}$	Basaland . . .	Hon. Walter Rothschild.
10 $\frac{1}{4}$	4 $\frac{1}{8}$	2 $\frac{7}{8}$	?	Col. Ralph Vivian.
9 $\frac{7}{8}$	4 $\frac{3}{8}$	1 $\frac{7}{8}$	Bogosland . . .	Sir Victor Brooke's Collection.
9 $\frac{3}{4}$	4 $\frac{1}{4}$	1 $\frac{7}{8}$	Bahr-el-Ghazal . .	F. H. Barber.
9 $\frac{3}{4}$	4 $\frac{1}{2}$	3 $\frac{3}{4}$	?	Capt. H. H. S. Morant.
♀ 6 $\frac{1}{2}$	...	...	Eastern Sudan . .	J. Menges.
♀ 5 $\frac{1}{8}$	1 $\frac{3}{4}$	1 $\frac{3}{4}$	Abyssinia . . .	Sir Victor Brooke's Collection.

— Owner's measurements.



Head of Senegal Gazelle, shot by the late Capt. H. J. Majendie.

SENEGAL or RED-FRONTED GAZELLE (*Gazella rufifrons*).

El Hamra of the Dinkas.

This medium-sized and rather stoutly built species agrees with Heuglin's gazelle in the black flank-stripe, but differs by the absence of a distinct inward hooking of the tips of the horns; the general colour being deep sandy rufous, brightening into rich rufous on the forehead and muzzle, without a black nose-spot. The knee-tufts so generally present in gazelles are wanting; and 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 and Gambia, Northern Nigeria, Kordofan, and White Nile.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{2}$	White Nile	Lieut.-Col. J. W. Yardley.
13	5 $\frac{1}{2}$	8	Do.	F. W. Greswolde-Williams.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12 $\frac{3}{4}$	4 $\frac{1}{2}$	7 $\frac{3}{8}$	Kordofan . . .	Capt. C. E. Hills.
12 $\frac{5}{8}$	4 $\frac{7}{8}$	7	White Nile . . .	R. M'D. Hawker.
12 $\frac{5}{8}$	4 $\frac{5}{8}$	6 $\frac{5}{8}$	Do. . . .	H. Cookson.
12 $\frac{1}{2}$	5	5	Do. . . .	Capt. E. Berry.
12 $\frac{1}{2}$	4 $\frac{3}{4}$	6 $\frac{1}{4}$	Do. . . .	Capt. J. C. Graham.
12 $\frac{3}{8}$	5	4 $\frac{1}{4}$	Do. . . .	C. Cookson.
12 $\frac{1}{4}$	4 $\frac{9}{16}$	5 $\frac{3}{8}$	Do. . . .	Brig.-Gen. B. T. Mahon.
12 $\frac{1}{4}$	4 $\frac{3}{4}$	5 $\frac{1}{4}$	Do. . . .	Col. H. W. Guinness.
12	4 $\frac{5}{8}$	5 $\frac{3}{8}$	Do. . . .	Capt. J. F. Wolseley.
12	4 $\frac{1}{4}$	6	Do. . . .	Lient. W. B. Drury, R.N.
12	4 $\frac{3}{4}$	4 $\frac{1}{4}$	Kordofan . . .	Major C. J. Hawker.
12	5	6	Sudan	A. L. Butler.
11 $\frac{7}{8}$	4 $\frac{3}{4}$	5	Kordofan . . .	F. P. Nathan.
11 $\frac{7}{8}$	5	4 $\frac{1}{4}$	Reahat, Sudan . . .	Prince Colloredo Manssfeld.
11 $\frac{7}{8}$	4 $\frac{1}{4}$	6 $\frac{3}{4}$	El Obeid	Capt. J. G. A. Massy.
11 $\frac{3}{4}$	4 $\frac{1}{2}$	4 $\frac{1}{4}$	Do.	H. F. Buxton.
11 $\frac{3}{4}$	4 $\frac{3}{4}$	5	Do.	H. Latham.
11 $\frac{3}{4}$	5	5 $\frac{1}{4}$	Do.	W. D. James.
11 $\frac{3}{4}$	4 $\frac{3}{4}$	3 $\frac{3}{4}$	Do.	Capt. C. S. Timins.
11 $\frac{5}{8}$	4 $\frac{1}{2}$	4 $\frac{3}{8}$	Do.	Lord St. Oswald.
11 $\frac{5}{8}$	4 $\frac{3}{4}$	5	Do.	C. Liddell.
11 $\frac{5}{8}$	7 $\frac{3}{8}$	5 $\frac{1}{2}$	Do.	Major J. H. Rivers.
11 $\frac{1}{2}$	4 $\frac{1}{4}$	4 $\frac{5}{8}$	White Nile . . .	Capt. R. A. Markham.
11 $\frac{3}{8}$	4 $\frac{5}{8}$	3 $\frac{1}{4}$	Sudan	Capt. H. H. S. Morant.
11	4 $\frac{1}{4}$	8	Do.	Capt. P. E. Vaughan.
11	4 $\frac{3}{4}$	6	Blue Nile	Hon. Walter Rothschild.
11	4 $\frac{7}{8}$	6 $\frac{3}{8}$	Kordofan	Major G. M. Lumsden.
11	4 $\frac{1}{2}$	3 $\frac{1}{2}$	Northern Nigeria . . .	Major D. F. MacCarthy Morrogh.
10 $\frac{5}{8}$	4 $\frac{3}{8}$	4 $\frac{1}{2}$	Lake Tchad	Capt. J. K. Cochrane.
♀ 10	2 $\frac{3}{8}$	4 $\frac{1}{4}$	Kordofan	Major G. M. Lumsden.
♀ 9 $\frac{5}{8}$	2 $\frac{1}{2}$	2 $\frac{7}{8}$	Reahat, Sudan . . .	Prince Colloredo Manssfeld.



Head of *Rothschild's Gazelle*. From Mr. Niedieck's book,
Mit Büchse in Fünf Weltteilen.

ROTHSCHILD'S GAZELLE (*Gazella albonotata*).

This newly described gazelle from the White Nile requires further comparison, and it is not put in its proper serial position.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
12 $\frac{5}{8}$	4 $\frac{3}{4}$	4	White Nile . .	P. Niedieck.
11	4 $\frac{1}{4}$	4 $\frac{3}{8}$	Do. . .	Capt. H. S. Logan.
10 $\frac{1}{2}$	4	3 $\frac{5}{8}$	Do. . .	C. Logan.
10	4 $\frac{5}{8}$	5 $\frac{1}{4}$	Do. . .	Hon. Walter Rothschild.
♀ 4 $\frac{3}{8}$	1 $\frac{1}{8}$	1 $\frac{1}{2}$	Do. . .	C. Logan.



Head of Thomson's Gazelle.

THOMSON'S GAZELLE (*Gazella thomsoni*).

Swahili name, *Svallah*. Masai name, *Engoli*.

The distinct black nose-patch and the great width of the black flank-band serve at once to distinguish this handsome 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, and the light lateral 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; and knee-tufts are developed. The horns are long, and rather like those of the Indian gazelle on an enlarged scale. Height at shoulder about 25 inches.

Distribution.—The interior districts of British and German East Africa, from Lake Rudolf southwards to Irangi.

Measurements of 4 males and 1 female shot by Mr. F. J. Jackson.

	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
Length	3 10	4 1	3 11 $\frac{1}{2}$	4 4	3 8 $\frac{1}{2}$
Height	2 1	2 3	2 1 $\frac{1}{2}$	2 2	1 11 $\frac{1}{2}$
Weight	52 lbs.	54 lbs.	56 lbs.	62 lbs.	32 lbs.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
16	4½	2	East Africa	C. S. Mann.
15¾	4½	7	Do.	R. M. Dane.
15½	4½	6½	Do.	E. M. Crosfield.
15½	5	3¾	Masailand	F. W. Belt.
15½	4¾	3¾	Do.	F. J. Jackson.
15½	4½	8½	Do.	E. Gedge.
15¼	4¾	4¾	Do.	British Museum (F. J. Jackson).
15¼	4½	4¾	East Africa	Major A. E. Smith.
15¼	4¾	5	Do.	Guy Fenwick.
15¼	5	4¾	Do.	C. B. C. Storey.
15¼	4½	11¾	Do.	F. C. Cobb.
15¼	4¾	5¾	Do.	Lord Basil Blackwood.
15¼	4¾	4¼	Do.	R. Wahrmann.
15	4½	5¼	Do.	Major C. U. Price.
15	5	3¾	Do.	G. G. Longden.
14¾	4½	3½	Do.	Capt. L. Boyd-Moss.
14¾	5	4	Do.	Hon. Guy Wilson.
14¾	4½	3¾	Do.	R. J. Church.
14¾	3¾	3¾	Do.	Julius Jeppe.
14¾	4½	4½	Do.	Col. Trevor Ternan.
14¾	4¾	4¾	Do.	Col. D. M. Lumsden.
14¾	4¾	4½	Do.	Lord Delamere.
14¾	5	4	Do.	Douglas M'Douall.
14¾	4½	6¾	Do.	W. F. Wailes-Fairbairn.
14¾	4½	3½	Do.	Capt. R. Meinertzhagen.
14¾	4¾	3	Do.	G. L. Harrison.
14¾	4	5¼	Do.	C. C. Branch.
14¾	4½	4¾	Do.	Walter Jones.
14¾	4¾	3¼	Do.	Count E. Hoyos.
14¾	4¾	4¾	Do.	Capt. E. F. Hausburg.
14½	4½	3	Do.	C. C. Bowring.
14½	4	3¼	Do.	Sir Edmund G. Loder, Bart.
14½	4¾	4¾	Do.	G. M. Spencer Smith.
14½	4¾	3½	Do.	H. C. Phipps.
14 6/8	2	2½	Do.	C. Steuart Betton.
14 5/8	1¾	3¾	Lake Naivasha	F. J. Jackson.

- Owner's measurements.



Skulls and Horns of Grant's Gazelle (male and female), from Mr. A. H. Neumann's specimens.

GRANT'S GAZELLE (*Gazella granti*).

With this handsome species we reach the last group of the genus *Gazella*, which includes species, for the most part of large size, characterised by the fawn colour of the back being invaded to a greater or less degree by the white of the rump. In this species the horns are very long and lyrate and there is a dark streak on the hinder border of each side of the rump-patch. On the neck and back the hair has a peculiar wavy appearance, recalling that of watered silk. In the more typical forms the tail is wholly white, like the rump-patch. Height at shoulder about 34 inches; weight of male from 150 to 166 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. Several well-defined local races of this species are recognised. First we have the typical race (*G. granti typica*), of the interior of East Africa, in which the dark flank-bands are

either wanting, or are present in young specimens below the light flank-band; secondly, the northern race (*G. granti notata*), of Northern British East Africa, in which dark bands are present both above and below the light band, behind which they unite with each other; and thirdly (*G. g. robertsi*). In addition to these is Peters's gazelle, which is also a local race, but is given a separate heading.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-30 $\frac{1}{4}$	7 $\frac{3}{4}$	20	Kilimanjaro . . .	Capt. F. A. Dickinson.
29	7	14	East Africa . . .	R. O. Preston.
29	6 $\frac{1}{2}$	20 $\frac{3}{4}$	Do.	Sheffield Neave.
-28 $\frac{1}{2}$	7	15 $\frac{3}{4}$	Do.	C. S. Mann.
-28 $\frac{3}{4}$	7	14 $\frac{1}{4}$	Rift Valley . . .	C. Steuart Betton.
28 $\frac{1}{4}$	6 $\frac{5}{8}$	15 $\frac{1}{8}$	?	F. J. Jackson.
-28 $\frac{5}{16}$	7 $\frac{3}{4}$	16 $\frac{1}{8}$	Lake Nakuru . . .	Capt. M. M'Neill.
28	7 $\frac{1}{2}$	16	East Africa . . .	Douglas M'Douall.
28	6 $\frac{3}{4}$	24 $\frac{3}{8}$	Do.	Capt. N. E. Playfair.
27 $\frac{7}{8}$	6 $\frac{5}{8}$	18 $\frac{3}{8}$	Do.	H. C. V. Hunter.
27 $\frac{3}{4}$	6 $\frac{3}{4}$	11	Do.	C. C. Wilson.
-27 $\frac{3}{4}$	6 $\frac{3}{4}$	15 $\frac{3}{8}$	Do.	Dr. Albert von Stephani.
27 $\frac{1}{2}$	6 $\frac{1}{2}$	16	Do.	F. J. Jackson.
27 $\frac{1}{2}$	7	17	Do.	Capt. D. H. Macdonell.
27 $\frac{1}{2}$	7 $\frac{1}{4}$	13	Naivasha	Major G. S. M'Loughlin.
27 $\frac{1}{4}$	6 $\frac{1}{2}$	18 $\frac{7}{8}$	East Africa . . .	Sir Robert Harvey, Bart.
27 $\frac{1}{4}$	7	19	Do.	Marquis of Waterford.
27	..	16	Do.	Sir John Willoughby, Bart.
27	7	15 $\frac{1}{4}$	Do.	A. J. A. Douglas.
27	7	12 $\frac{1}{2}$	Do.	H. T. Barclay.
27	7	20	Do.	Capt. J. S. Cavendish.
-26 $\frac{7}{8}$	6 $\frac{1}{8}$	20 $\frac{3}{8}$	N.W. Masailand . .	O. Neumann.
26 $\frac{3}{4}$	7 $\frac{1}{8}$	...	East Africa . . .	F. C. Selous.
26 $\frac{3}{4}$	6 $\frac{1}{2}$	13 $\frac{1}{2}$	Shores of Lake Naivasha .	A. H. Neumann.

- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
26 $\frac{3}{4}$	7	14 $\frac{1}{2}$	East Africa . . .	A. Bayley-Worthington.
26 $\frac{3}{4}$	7	15	Do. . . .	F. W. Belt.
26 $\frac{1}{2}$	7 $\frac{1}{4}$	3 $\frac{1}{4}$	Do. . . .	Lord Delamere.
26 $\frac{1}{2}$	7	12 $\frac{3}{4}$	Do. . . .	E. Wynstone Waters.
26 $\frac{1}{2}$	7 $\frac{1}{4}$	18	Do. . . .	Major A. E. Smith.
26 $\frac{1}{2}$	6 $\frac{3}{4}$	6	Do. . . .	Baron Maurice de Rothschild.
26 $\frac{1}{2}$	7 $\frac{1}{4}$	15 $\frac{1}{4}$	Do. . . .	Capt. R. Meinertzhagen.
♀ 26 $\frac{1}{2}$	5 $\frac{1}{2}$	19 $\frac{1}{4}$	Do. . . .	Nairobi Club.
♀ 17 $\frac{1}{2}$	3 $\frac{3}{4}$	9	Do. . . .	H. C. V. Hunter.

(*Gazella granti robertsi*).*Bisa* of the Wangumwesi.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
~24 $\frac{1}{2}$	...	28	German East Africa . .	British Museum (F. Russell Roberts and C. E. Blaine).
24 $\frac{1}{4}$	5 $\frac{3}{4}$	20 $\frac{1}{2}$	Do. . . .	F. J. Jackson.
24 $\frac{3}{8}$	5 $\frac{5}{8}$	27 $\frac{1}{4}$	Do. . . .	F. Russell Roberts.
¹ 23 $\frac{1}{4}$	...	23 $\frac{1}{2}$	Do. . . .	British Museum (F. Russell Roberts and C. E. Blaine).
22 $\frac{3}{4}$	5 $\frac{1}{2}$	18 $\frac{3}{4}$	Do. . . .	Hon. Walter Rothschild.
~21	6	15 $\frac{1}{2}$	?	Capt. F. A. Dickinson.

- Owner's measurements.

¹ Type specimen.



Skulls and Horns of Peters's Gazelle (male and female),
from Mr. A. H. Neumann's specimens.

PETERS'S GAZELLE (*Gazella granti petersi*).

Hädi of the Gallas.

This race of Grant's gazelle differs from the typical form in that the fawn of the back is but little intruded on by the white of the rump-patch, and is continued in the middle line on to the base of the tail, which is otherwise white. Height at shoulder about 32 or 33 inches.

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 $\frac{3}{4}$	6 $\frac{1}{2}$	7 $\frac{1}{4}$	Machakos . . .	Julius Jeppe.
22 $\frac{1}{8}$	6 $\frac{3}{8}$	5 $\frac{1}{8}$	Shererini . . .	British Museum (F. J. Jackson).
21 $\frac{3}{4}$	6 $\frac{1}{2}$	11	?	Major L. Boyd-Moss.
21 $\frac{1}{2}$	6 $\frac{7}{8}$	8 $\frac{7}{8}$	?	T. F. V. Buxton.
21 $\frac{1}{4}$	6 $\frac{3}{8}$	10	Machakos . . .	Dr. Albert von Stephani.
20 $\frac{1}{2}$	5 $\frac{1}{4}$	9 $\frac{1}{2}$	Tana River . . .	C. Hankey.
20 $\frac{1}{2}$	5 $\frac{3}{8}$	5 $\frac{3}{8}$	Do. . . .	Capt. H. De Prée.
20 $\frac{1}{4}$	6 $\frac{1}{8}$	8 $\frac{1}{8}$	Ndara Teita . . .	C. Steuart Betton.
19	6	5 $\frac{1}{4}$	Taru Desert . . .	Lieut. G. H. Welch, R.N.
17 $\frac{3}{4}$	5 $\frac{1}{4}$	7 $\frac{1}{8}$	Near Pica Pica . . .	A. H. Neumann.
♀ 14	3 $\frac{1}{4}$	4 $\frac{1}{2}$	Machakos . . .	Julius Jeppe.
♀ 10 $\frac{1}{8}$	3	4 $\frac{1}{4}$	Near Pica Pica . . .	A. H. Neumann.

- Owner's measurements.



Skull and Horns of Sæmmerring's Gazelle, from a specimen shot by
Col. V. M. Stockley.

AOUL or SÆMMERRING'S GAZELLE (*Gazella sæmmerringi*).

Somali name, *Aoul*.

Abyssinian name, *Meidafhel*.

Abyssinian (Danakil) name, *Maédedo*.

Soudanese name, *Ariel*.

In addition to the forward extent of the white rump-patch, the leading characteristics of this handsome species are to be found in the absence of a black streak dividing the sides of the rump-patch from the fawn of the body, the black-tipped tail, and the very distinct inward hooking of the horns, which are shorter and more massive than in *G. granti*. The ears are long and bordered with black externally, and the face-markings well-defined and nearly black. 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, and Somaliland; in the latter country occurring all over the Haud and Ogaden. The North Somali *Gazella sæmmerringi berberana* is larger and darker than the typical form, with differently curved horns.

A.—SOMALI RACE (*Gazella søemmerringi berberana*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
—22½	4½	13¾	Somaliland . . .	G. H. Kirkpatrick.
21	6¼	4¾	Do. . . .	Col. V. M. Stockley.
20¾	6¾	...	Do. . . .	W. N. McMillan.
20¾	5¾	3¾	Do. . . .	G. H. Cheetham.
20¼	6	4¾	Do. . . .	Norman B. Smith.
20¼	5¾	3	Do. . . .	Capt. J. W. C. Kirk.
20	5¼	5¾	Do. . . .	Hon. Walter Rothschild.
20	5¾	4	Do. . . .	Lieut.-Col. J. W. H. Flauagan.
20	6	7¼	Do. . . .	A. Louw.
20	5¼	5½	Danakil . . .	Viscount Edmond de Poncins.
♀—20	...	5¾	Somaliland . . .	A. E. Pease.
20	5½	5¼	Do. . . .	Capt. H. du B. O'Neill.
20	5¾	...	Do. . . .	Col. A. N. Rochfort.
19¾	5¾	5¼	Do. . . .	Count J. de Bylands.
19¾	5¾	5¾	The Haud . . .	P. H. G. Powell-Cotton.
19¾	5¼	6¾	Somaliland . . .	Julius Jeppe.
19½	5½	5¾	Do. . . .	T. W. H. Clarke.
19½	5 ⁹ / ₁₀	2	Do. . . .	Sir Edmund G. Loder, Bart.
19½	5½	4¾	Do. . . .	Capt. J. J. Richardson.
19½	5½	4¾	Do. . . .	Count J. Potocki.
19½	5¼	15¼	Do. . . .	R. M'D. Hawker.
19¼	5½	6½	Do. . . .	T. W. H. Clarke.
19¼	5¼	4½	Do. . . .	Major B. L. Carew.
19	6	6	Do. . . .	R. E. Drake-Brockman.
19	5¾	3½	Do. . . .	A. E. Butter.
19	5	4	Do. . . .	Lieut.-Gen. Sir Arthur Paget.
19	5¼	4¾	Do. . . .	J. Benet-Stanford.
19	5	7½	Do. . . .	Capt. B. R. M. Glossop.
19	5½	5½	Do. . . .	F. G. Barclay.

— Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19	6	2 $\frac{3}{4}$	Somaliland . . .	W. Macmillan.
19	4	3 $\frac{1}{4}$	Do.	Prince Nicolas Ghika.
♀ 18 $\frac{1}{4}$	...	6	Do.	T. W. H. Clarke.
♀ 18 $\frac{3}{16}$	3 $\frac{1}{2}$	8 $\frac{1}{3}$	Do.	Sir Edmund G. Loder, Bart.

B.—TYPICAL RACE (*Gazella sœmmerringi 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.
16	5 $\frac{1}{4}$	5	Do.	Comdr. A. H. Home, R.N.
16	5	3 $\frac{1}{4}$	Do.	G. L. Harrison.
16	4 $\frac{1}{2}$	5 $\frac{1}{4}$	Do.	Col. A. Colville.
15 $\frac{3}{4}$	5 $\frac{1}{2}$	5 $\frac{3}{4}$	Do.	Capt. H. H. S. Morant.
15 $\frac{1}{2}$	5 $\frac{1}{4}$	3 $\frac{3}{4}$	Do.	P. C. Lord.
15 $\frac{1}{2}$	5 $\frac{3}{8}$	5	Do.	Col. Ralph Vivian.
15 $\frac{1}{2}$	5	5	Do.	Capt. J. S. Cavendish.
♀ 15 $\frac{1}{4}$	2 $\frac{7}{8}$	7 $\frac{3}{8}$	Do.	Lieut.-Col. Hon. W. Coke.
15	5	4 $\frac{3}{4}$	Do.	H. A. Smiley.
15	5	6	Suakin	Hon. Walter Rothschild.
♀ 13 $\frac{3}{4}$	3	6 $\frac{1}{2}$	Sudan	Count J. Potocki.

C.—BORANI RACE (*Gazella sœmmerringi butteri*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{1}{4}$	4 $\frac{3}{4}$	3 $\frac{1}{2}$	Boran country . . .	A. E. Butter.



Head of Addra Gazelle, shot by Prince Henry of Liechtenstein.

RED-NECKED or ADDRA GAZELLE (*Gazella ruficollis*).

Riv of the Dinkas.

The two species of the genus *Gazella* just mentioned are not only the largest of the tribe, but are distinguished from all their relatives by the white of the rump extending on to the tail (which is either wholly white or merely tipped with fawn) coupled with the complete absence of a black band between the white of the rump-patch and the fawn of the body; the horns being hooked upwards and forwards, and not distinctly inwards. In the present species, which measures about 36 or 37 inches at the shoulder, the neck and front portion of the back alone display a distinctly rufous tint, the line of division between the fawn and the white being obscure. The whole of the hind-quarters are pure white.

Distribution.—Kordofan and Sennar.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14 $\frac{3}{4}$	6	7	Kordofan	Capt. H. G. F. Stallard.
14 $\frac{1}{2}$	5 $\frac{1}{2}$	7 $\frac{1}{4}$	Do.	Major C. J. Hawker.
14 $\frac{3}{8}$	5 $\frac{3}{4}$	8 $\frac{1}{8}$	Do.	Major G. M. Lumsden.
13 $\frac{3}{4}$	5 $\frac{3}{8}$	4 $\frac{3}{4}$	Do.	Brig.-Gen. B. T. Mahon.
13 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{8}$	Do.	Capt. G. S. Cameron.
13 $\frac{3}{4}$	5 $\frac{3}{4}$	7 $\frac{1}{2}$	Lake Tchad	Major J. B. Cockburn.
-13 $\frac{1}{2}$	4 $\frac{1}{8}$	8 $\frac{5}{8}$	Nubia	Imperial Museum, Vienna.
13 $\frac{3}{8}$	6 $\frac{1}{4}$	6	N. Nigeria	The late Capt. G. B. Gosling.
-13 $\frac{1}{8}$	5 $\frac{1}{8}$	7 $\frac{1}{8}$	?	Major W. Anstruther Gray.
12 $\frac{3}{4}$	6	5 $\frac{3}{4}$	Kordofan	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.	Brig.-Gen. 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.
12 $\frac{1}{8}$	5 $\frac{3}{4}$	6 $\frac{3}{4}$	Lake Tchad	Sir F. Lugard.
12	5 $\frac{1}{2}$	3 $\frac{3}{4}$	Kordofan	Lieut.-Col. E. B. Wilkinson.
11 $\frac{5}{8}$	5 $\frac{5}{8}$	4 $\frac{1}{4}$	Do.	British Museum (Major H. N. Dunn).

- Owner's measurements.

DAMA GAZELLE (*Gazella dama*).

Together with its northern representative, the mhor of Morocco, the dama differs from the addra by the rufous tint extending completely over the body and flanks, and being well defined from the white of the under parts. In the present form, which is from Senegal, the sides of the thighs are white, so that the rufous of the body is cut off from that of the hind-legs. The height is at least 36 inches.

Distribution.—Senegambia and adjacent districts.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
13 $\frac{3}{4}$	5 $\frac{1}{2}$	6 $\frac{1}{2}$	Lake Tchad . . .	A. B. Baillie-Hamilton.
13 $\frac{1}{2}$	5 $\frac{1}{2}$	3 $\frac{1}{2}$	Do. . . .	Major D. F. MacCarthy Morrogh.
-12 $\frac{5}{8}$	5 $\frac{1}{4}$	5 $\frac{1}{2}$	Do. . . .	Paris Museum.
12 $\frac{1}{2}$	5 $\frac{1}{2}$	6	?	Mr. Justice Hopley.
-12 $\frac{1}{4}$	5 $\frac{1}{8}$	3 $\frac{1}{8}$	Senegambia . . .	Paris Museum.
8 $\frac{1}{2}$	3 $\frac{1}{2}$	5 $\frac{3}{8}$	?	Hon. Walter Rothschild.

MHORR or SWIFT GAZELLE (*Gazella dama mhor*).

Although commonly regarded as a distinct species, this fine but somewhat leggy gazelle seems to be only a northern race of the dama gazelle of Senegal; the latter and the addra being the largest members of the genus. The mhor, as it is called by the Arabs, differs from the dama by the sides of the thighs and legs being of the same rufous hue as the body, instead of white. Height at shoulder at least 36 inches.

Distribution.—The desert districts of South-West Morocco.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
11 $\frac{3}{8}$	6	3 $\frac{1}{2}$	Wednoon, Mogador	British Museum (W. Willshire).
-4 $\frac{1}{8}$	3 $\frac{1}{8}$	2 $\frac{1}{2}$	Morocco . . .	Dr. Percy Rendall.

- Owner's measurements.



Skull and Horns of Dibatag, from a specimen shot by Mr. T. W. H. Clarke in Somaliland.

The DIBATAG or CLARKE'S GAZELLE (*Ammodorcas clarkei*).

Although resembling the true gazelles in the face-markings, the dibatag, as it is called by the Somalis, is so different from these animals as to be entitled to constitute a genus by itself, being in many respects intermediate between the former and the gerenuk. The horns, which are present only in the males, are rather short, and have a regular upward and forward curvature, somewhat like those of a reed-buck; 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.

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

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip	Owner.
-13	...	...	J. D. Inverarity.
-13	...	...	J. Menges.
12 $\frac{5}{8}$	5 $\frac{1}{4}$	4 $\frac{5}{8}$	Hon. Walter Rothschild.
11 $\frac{3}{4}$	4 $\frac{7}{8}$	3 $\frac{5}{8}$	Lieut.-Gen. Sir Arthur Paget.
11 $\frac{3}{4}$	4 $\frac{3}{4}$	3 $\frac{3}{4}$	T. W. H. Clarke.
-11 $\frac{3}{4}$	4 $\frac{1}{4}$	5	Capt. J. Brander Dunbar.
11 $\frac{1}{4}$	4 $\frac{1}{4}$	6	R. M'D. Hawker.
11 $\frac{1}{4}$	4 $\frac{1}{2}$	4 $\frac{3}{4}$	Lieut.-Col. J. E. Gough.
11 $\frac{1}{2}$	4 $\frac{1}{2}$	5 $\frac{1}{16}$	Capt. M. M'Neill.
11	5 $\frac{1}{2}$	2 $\frac{1}{4}$	Capt. B. R. M. Glossop.
11	5	5 $\frac{1}{2}$	S. Payne-Gallwey.
-10 $\frac{3}{4}$	4 $\frac{1}{4}$	5	P. C. Keytel.
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.
9 $\frac{1}{4}$	4 $\frac{1}{2}$	5 $\frac{1}{8}$	British Museum (T. W. H. Clarke).
9 $\frac{1}{2}$	4 $\frac{1}{2}$	4 $\frac{5}{8}$	R. E. Drake-Brockman.

- Owner's measurements.



Head and Neck of Dibatag.



Head and Neck of Gerenuk.



Record Head of Gerenuk, from a specimen shot by H. R. H. le Duc d'Orléans.

The GERENUK or WALLER'S GAZELLE (*Lithocranius walleri*).

Somali name, *Gerenuk*.

Danakil name, *Gudan Godu*.

Galla name, *Gügüfto*.

Even more aberrant than the last is the gerenuk, in which the elongation of the neck attains its supreme development, while the slender legs 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 a deep rufous fawn, but down the middle of the back runs a broad dark 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, 41 inches; weight, 115 lbs.

This antelope,—first described by the late Sir V. Brooke on the evidence of a flat skin,—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 (*Lithocranius walleri s lateri*) is somewhat different from the East African or typical gerenuk. The northern form is larger, with finer horns, a longer neck, a less rufous colour, and lacks the black knee-tufts, while the white markings of the tail are also different. The Somali gerenuk has been considered a distinct species, but is best regarded as a local race or sub-species.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
' 17	5 $\frac{1}{4}$	3 $\frac{3}{4}$	Somaliland	H.R.H. le Duc. d'Orléans. (See illustration.)
-16 $\frac{3}{4}$	...	...	Do.	Col. H. G. Mainwaring.
-16 $\frac{3}{4}$	6	3	Do:	Capt. F. A. Dickinson.
-16 $\frac{1}{2}$	5 $\frac{3}{4}$	3 $\frac{5}{8}$	Do.	E. L. Cappel.
16 $\frac{1}{2}$	5 $\frac{1}{2}$	1 $\frac{3}{4}$	Do.	Mr. Justice Hopley.
16	5 $\frac{3}{4}$	6	Do.	Sir Edmund G. Loder, Bart.
-15 $\frac{3}{4}$	6	2 $\frac{3}{4}$	Do.	A. E. Pease.
15 $\frac{1}{2}$	5 $\frac{1}{2}$	3	Do.	J. Kenneth Foster.
15 $\frac{1}{2}$	6	6 $\frac{1}{4}$	Do.	J. Rosen.
-15 $\frac{1}{2}$	5 $\frac{7}{8}$	4 $\frac{7}{8}$	Do.	F. H. Barber.
15 $\frac{3}{8}$	5 $\frac{3}{8}$	4	Do.	Lieut.-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.	Julius Jeppe.
15 $\frac{1}{4}$	5	4	Do.	F. Gillet.
15	5 $\frac{3}{4}$	6 $\frac{3}{8}$	Do.	F. G. Gunnis.
15	5	4 $\frac{1}{4}$	Do.	Major J. M'Call Maxwell.
15	5 $\frac{3}{4}$	4 $\frac{1}{2}$	Do.	Capt. H. Maclean.
14 $\frac{1}{2}$ $\frac{5}{8}$	5 $\frac{1}{2}$	7 $\frac{1}{4}$	Do.	Paris Museum (H. R. H. le Duc d'Orléans).
14 $\frac{7}{8}$	5 $\frac{3}{4}$	2	Do.	H. Z. Darrah.
14 $\frac{3}{4}$	5 $\frac{5}{8}$	4 $\frac{1}{2}$	East Africa	C. C. Wilson.
14 $\frac{1}{4}$	4 $\frac{1}{2}$	2	Do.	Capt. H. De Préé.
14	...	3	Do.	Sir John Willoughby, Bart.

- Owner's measurements.



Skulls of Male and Female Beira. Shot by Mr. P. H. G. Powell-Cotton.

The BEIRA ANTELOPE (*Dorcatragus melanotis*).

In spite of its presenting a certain superficial resemblance to the members of the oribi group and its allies, this peculiar little antelope is considered to be best placed in the neighbourhood of the gazelles. From all the members of the group in which the latter are included, the beira is at once distinguished by the short and spike-like horns of the bucks. Perhaps 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. In colour, the upper parts and legs are pinkish fawn; 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, 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 $32\frac{5}{16}$, 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
$4\frac{1}{16}$	$1\frac{7}{8}$	...	Do.	Lord Delamere.
$-4\frac{3}{4}$	...	...	Northern Somaliland	J. Menges.
$4\frac{5}{8}$	2	$2\frac{7}{8}$	Abyssinia	P. H. G. Powell-Cotton.
$-4\frac{1}{2}$	...	$1\frac{1}{8}$	Northern Somaliland	Capt. M. M'Neill.
$4\frac{1}{4}$	2	$2\frac{1}{2}$	Abyssinia	W. F. Whitehouse.
$4\frac{3}{8}$	$1\frac{7}{8}$	$2\frac{5}{8}$	Somaliland	Capt. R. A. M'Clymont.
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.

— Owner's measurements.



Skull of Beira, from specimen shot by Mr. P. H. G. Powell-Cotton.



Skull and Horns of Sable Antelope, from Mr. R. T. Coryndon's specimen.

SABLE ANTELOPE (*Hippotragus niger*).

<i>Impengo</i> of the Masubias.	<i>Qualata inchu</i> of the Bamangwatos
<i>Impalampala</i> of the Swazis and Zulus.	and Makololos.
<i>Ookwa</i> of the Makubas.	<i>Solupe</i> of the Masaras.
<i>Potoquane</i> of the Southern Bechuanas.	<i>Ujiele</i> of the Amandebili.
<i>Pala-hala</i> of the Swahilis.	<i>Kwalata n'tso</i> in Barotsiland.
<i>Pala-pala</i> of the Makalakas.	<i>Qualata Tshumu</i> in Ngamiland.
	<i>Mperembe</i> in the Chilala and Chibisa countries.
	<i>Mpalare</i> of the M'Rua.

The group of antelopes which includes the present species, the roan antelope, the gemsbuck, addax, etc., differs very markedly from all those above mentioned. Among the leading features 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. Even more remarkable are the upper molar teeth, which have square grinding-surfaces and tall crowns, like those of oxen.

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 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 size of the 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.

Distribution.—From about the centre of the Transvaal northwards to Nyasaland and the adjacent districts of South-East and East Africa. 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.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-52 $\frac{1}{2}$	...	...	River Line, S.E. Africa . .	Julius Jeppé.
51	10 $\frac{1}{2}$	11	Barotsiland . . .	A. P. Heneage.
50 $\frac{3}{8}$	9 $\frac{1}{2}$	18 $\frac{1}{4}$	Do. . . .	Hon. Walter Rothschild.
50 $\frac{3}{4}$	10	19 $\frac{1}{2}$	Do. . . .	G. F. Williams.
50	10 $\frac{3}{8}$	7 $\frac{1}{4}$	Do. . . .	Norman B. Smith.
48 $\frac{3}{4}$	10	23 $\frac{1}{4}$	Do. . . .	J. H. Hayes.
48 $\frac{1}{2}$	9 $\frac{1}{4}$	22 $\frac{3}{4}$	Do. . . .	E. Caldwell.
-48 $\frac{1}{2}$	9 $\frac{5}{8}$	11 $\frac{1}{4}$	Do. . . .	Berlin Museum.
-48 $\frac{1}{4}$	...	10 $\frac{5}{8}$	?	P. C. Keytel.
48	10 $\frac{1}{4}$	15 $\frac{3}{4}$	Matabililand . . .	Capt. J. P. Grenfell.
-48	...	...	Tanganyika . . .	E. S. Grogan.
-48	...	15 $\frac{3}{4}$	Transvaal . . .	Lieut.-Col. R. B. Fell.
47 $\frac{3}{4}$	10 $\frac{1}{4}$	29	Rhodesia . . .	C. S. Mann.
47 $\frac{3}{4}$	10	23 $\frac{1}{2}$	Do. . . .	R. T. Coryndon.

— Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
47 $\frac{3}{4}$	9 $\frac{3}{4}$	11	Rhodesia	Capt. E. de L. Hayes.
47 $\frac{1}{2}$	10	9	Do.	S. R. Price.
47 $\frac{1}{4}$	9 $\frac{3}{4}$	23 $\frac{1}{2}$	N.W. Rhodesia	Col. C. Harding.
46 $\frac{3}{4}$	9 $\frac{1}{4}$	19 $\frac{1}{2}$	Do.	Dr. E. H. Tripp.
46 $\frac{1}{2}$	9 $\frac{1}{4}$	12 $\frac{1}{4}$	Do.	F. Barker.
46 $\frac{1}{2}$	9 $\frac{1}{2}$	14	Do.	Sir Arthur Lawley.
-46	...	17	Barotsiland	C. R. Swanson.
46	10	11 $\frac{1}{4}$	Do.	T. G. Davey
46	11	15	Do.	R. C. Forster.
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 $\frac{1}{2}$	9 $\frac{1}{4}$	15 $\frac{1}{2}$	Mashonaland	Major G. A. L. Carew.
45 $\frac{1}{2}$	10 $\frac{1}{2}$	...	Rhodesia	H. B. Marshall.
45 $\frac{3}{8}$	10	14 $\frac{3}{4}$	Lebombo Mountains	F. Vaughan Kirby.
45 $\frac{1}{4}$	9 $\frac{1}{2}$	12 $\frac{1}{4}$	S.E. Mashonaland	J. G. Millais.
44 $\frac{1}{2}$	9	17	Transvaal	Sir J. P. Fitzpatrick.
44 $\frac{1}{8}$	9 $\frac{1}{2}$	8 $\frac{1}{4}$	Eastern Mashonaland	F. C. Selous.
44 $\frac{1}{8}$	9 $\frac{1}{2}$	14 $\frac{1}{2}$	Transvaal	Abel Chapman.
44	9	16 $\frac{1}{2}$	Lydenburg	F. H. Barber.
44	9 $\frac{3}{8}$	19 $\frac{1}{2}$	British Central Africa	E. Homer.
-42 $\frac{1}{4}$	9 $\frac{1}{2}$	11 $\frac{3}{8}$	G. East Africa	Major von Tiedemann.
♀ 39 $\frac{3}{8}$	6 $\frac{1}{4}$	6 $\frac{3}{8}$	Mashonaland	F. C. Selous.
-♀ 37 $\frac{3}{8}$	...	6 $\frac{3}{8}$	?	P. C. Keytel.
♀ 36 $\frac{3}{8}$	6 $\frac{1}{2}$	...	Mashonaland	J. Ff. Darling.
31 $\frac{3}{4}$	9	13	British East Africa	C. H. Tritton.
31	9	9	Do.	F. J. Jackson.
-♀ 24 $\frac{1}{2}$	6	7 $\frac{3}{4}$	Do.	Lieut.-Col. E. G. Harrison.
♀ 22 $\frac{3}{8}$	5 $\frac{3}{8}$	9 $\frac{1}{4}$	Do.	C. H. Tritton.

- Owner's measurements.



Head of Sable Antelope.



Head of Roan Antelope, from a specimen shot by Mr. F. C. Selous.

ROAN ANTELOPE (*Hippotragus equinus*).

- | | |
|--|---|
| <i>Abu öruff</i> of the Dinkas and Arabs. | <i>Mtagaisi</i> of the Swazis and Zulus. |
| <i>Ec-taka</i> of the Amandebili. | <i>Oo-ka-mooh-we</i> of the Makubas. |
| <i>Ee-pala-pala chena</i> of the Makalaks. | <i>Qualata</i> of the Northern Bechuanas. |
| <i>Gwenki</i> of the Hausas. | <i>Kwalata</i> and <i>Etselta</i> in Ngamiland. |
| <i>Impengo eetuba</i> of the Masubias. | <i>Qualata</i> and <i>Tseu</i> in Barotsiland. |
| <i>Kwar</i> of the Masaras. | <i>Tai-hait-sa</i> of the Southern Bechuanas. |
| <i>Klabakila</i> of the Basuto. | <i>Wunderbee</i> of the Abyssinians. |
| <i>Ipewa</i> in the Chilala and Chibisa countries. | <i>Abú aroof</i> of the Sudanese. |

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 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, Gambia, and Senegambia. The name *H. equinus rufopallidus* has been applied to the East African race, while the Abyssinian form is known as *H. e. bakeri*, and the West African as *H. e. gambianus*. Gordon Cumming shot the roan antelope just north of the Orange River in Griqualand West, where it has for many years been exterminated. Nowhere abundant, the species is 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. leucophæus*), long since exterminated.

The following specimens belong to the typical form :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-39 $\frac{1}{4}$	...	...	Tokwe River, South Rhodesia	South African Museum (R. C. Camp).
-35	9 $\frac{1}{2}$	8 $\frac{1}{2}$	South Africa . . .	A. Ohlsson.
34 $\frac{1}{4}$	9	7	Okavango Valley . .	Sir H. J. Goold-Adams.
33	...	...	Northern Matabililand	A. C. Fountaine.
32 $\frac{3}{4}$	8 $\frac{3}{4}$	9 $\frac{1}{2}$	Mashonaland . . .	Julius Jeppe.
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.
-32	10	13 $\frac{3}{8}$	Mashonaland . . .	Major A. St. H. Gibbons.
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 $\frac{1}{2}$	8 $\frac{1}{2}$	12 $\frac{1}{2}$	Nyasaland	Major P. W. Forbes.
-31 $\frac{1}{2}$	10 $\frac{1}{2}$	11 $\frac{1}{4}$	Angolaland	E. P. Cooper.
31	8 $\frac{3}{4}$	13	Mashonaland	J. A. Jameson.
-31	10	6 $\frac{3}{4}$	?	Mr. Justice Hopley.
♀ 30 $\frac{1}{2}$	7	7 $\frac{3}{8}$	Mashonaland	F. C. Selous.
30 $\frac{1}{2}$	9	13 $\frac{1}{4}$	South Africa	G. Richards.
-30 $\frac{1}{2}$	10	11 $\frac{1}{2}$	Portuguese East Africa	F. Vaughan Kirby.
-30 $\frac{1}{2}$	8 $\frac{7}{8}$	9	Matabililand	Count E. Hoyos.

- Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
30½	10	5¾	Matabililand . . .	Lord H. Seymour.
30½	9¼	13	British C. Africa . . .	J. E. S. Old.
30	9¾	5	Rhodesia	G. W. Spencer Smith.
30	9½	6¾	British C. Africa . . .	Capt. G. M. P. Hawthorne.
29⅞	10½	14¾	Matabililand	W. Van Ness.
29⅞	9¾	11¼	Mashonaland	Hon. Walter Rothschild.
29¾	9¾	10	Do.	Sir John Willoughby, Bart.
♀ 29½	7	6¼	British C. Africa . . .	R. H. Storey.

The following specimens belong to the Abyssinian race (*Hippotragus equinus bakeri*):—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
37¼	10	7¼	Sudan	P. Niedieck.
34½	10	9	Do.	Brig.-Gen. B. T. Mahon.
34	9¼	5¾	Do.	Major G. de H. Smith.
33¼	10	17¼	Do.	Marquis Pizzardi.
33	8¾	10	Do.	S. H. Whitbread.
32¾	9	14¾	Do.	Sir Savile Crossley, Bart.
32½	9	12¼	Do.	Capt. E. Berry.
32½	9¼	13¾	Do.	Capt. C. R. G. Mayne.
32½	9	9	Do.	Capt. H. S. Logan.
32½	9	...	Do.	R. M'D. Hawker.
32¼	10	8¾	Do.	G. H. Cheetham.
32¼	9¾	13¾	Do.	British Museum (Sir W. Garstin).
32	9¾	5¾	Do.	C. Adeane.
32	...	14¼	Do.	E. N. Buxton.
31½	11½	10½	Do.	Capt. G. L. Cameron.
31	9½	10½	Do.	Major Hon. W. Guinness.
31	8¾	12½	Do.	G. L. Harrison.
♀ 26¾	6	12	Do.	Rowland Ward.

— Owner's measurements.

The following specimens belong to the West African race (*Hippotragus equinus gambianus*):—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
30	9	10 $\frac{3}{4}$	Nigeria . . .	Brig.-Gen. Sir James Willcocks.
29 $\frac{1}{2}$	9	9 $\frac{5}{8}$	Do.	E. J. Wolseley.
28 $\frac{3}{4}$	8 $\frac{5}{8}$	12 $\frac{1}{2}$	Gambia	Dr. Percy Rendall, Charterhouse School Museum.
♀ 28 $\frac{3}{4}$	6 $\frac{7}{8}$	2 $\frac{3}{4}$	Nigeria	The late Capt. G. H. F. Abadie.
28	8 $\frac{1}{4}$	10 $\frac{3}{4}$	Do.	Capt. H. N. Kempthorne.
27 $\frac{3}{4}$	9	10 $\frac{1}{4}$	Do.	Dr. E. Charteris.

The following specimens belong to the East African race (*Hippotragus equinus rufopallidus*):—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
31	...	...	German E. Africa . .	F. Russell Roberts.
28 $\frac{5}{8}$	8 $\frac{7}{8}$	8 $\frac{3}{4}$	East Africa	Walter Jones.
25 $\frac{3}{4}$	9 $\frac{1}{2}$	12	Do.	E. M. Crosfield.
25	9	6 $\frac{1}{4}$	Do.	Col. J. H. Patterson.
25	8 $\frac{3}{4}$	5 $\frac{1}{4}$	Do.	Capt. H. W. Nicolson.
24 $\frac{1}{4}$	9 $\frac{1}{2}$	6 $\frac{1}{4}$	Do.	H. Twyford.
♀ 21 $\frac{1}{2}$	6 $\frac{3}{4}$	9 $\frac{3}{4}$	German E. Africa . .	O. Neumann.

— Owner's measurements.



Skull and Horns of Gemsbuck, from Mr. F. H. Barber's specimen.

GEMSBUCK ORYX (*Oryx gazella*).

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 3 feet 9 inches at the shoulder. In addition to the length of its horns, the species is sufficiently characterised by the presence of a tuft of 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 karoos 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 karoos 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.
47½	6¾	17½	South Africa . . .	The late J. S. Jameson.
46	7	25½	Do.	W. A. Simpson Hinchliffe.
♀ 45½	...	...	Bechuanaland . . .	F. H. Barber. (See illustration.)
♀ 45¼	6¼	33¾	Ngamiland . . .	Sir H. J. Goold-Adams.
45¼	...	23⅝	Do.	H.R.H. le Duc de Montpensier.
45¼	6¾	20¾	Do.	G. M. Bond.
45	8⅞	18½	Do.	Hon. Walter Rothschild.
45	7	26	Do.	R. H. Venables Kyrke.
44½	6⅞	25	?	P. C. Keytel.
44	6½	17	?	A. Ohlsson.
43¾	7	21	?	Dr. W. P. Y. Bainbrigge.
43¾	6¾	18½	Nata River . . .	F. C. Selous.

— Owner's measurements.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
43 $\frac{1}{4}$	6 $\frac{3}{8}$	20 $\frac{1}{4}$	?	Sir Victor Brooke's Collection.
43 $\frac{1}{4}$	8	16	?	James J. Harrison.
43 $\frac{1}{8}$	6 $\frac{3}{8}$	22	Botletli River	F. C. Selous.
43	7 $\frac{1}{2}$	...	?	Earl of Dartmouth.
43	6 $\frac{1}{2}$	22	?	W. Y. Campbell.
42 $\frac{3}{4}$	...	22 $\frac{1}{4}$	?	J. L. Drège.
42 $\frac{1}{2}$	7	20 $\frac{1}{2}$	Bechuanaland	A. Neilson.
42 $\frac{3}{4}$	6 $\frac{1}{4}$	19 $\frac{1}{2}$	Do.	Capt. F. H. Lehmann.
42 $\frac{1}{4}$	7	23	Kalahari	H. A. Bryden.
42	6 $\frac{3}{8}$	22	?	Julius Jeppe.
42	6 $\frac{1}{8}$	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.

Owner's measurements.



Head of Beisa Oryx.

BEISA ORYX (*Oryx beisa*).

Beida of the Somalis. *Sala* of the Danakil Abyssinians.

The beisa may be regarded as the north-eastern representative of the gemsbuck, from which it may be 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 to about 4 feet. Weight 458 lbs.

Distribution.—North-East Africa, from Suakin through Abyssinia to Berbera in Somaliland, and south to the Tana River.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40	...	...	?	Measured by A. O. Hume, at Aden.
♀ 39	5½	8	Hargeisa, Somaliland .	E. P. Hare.
♀ 37½	...	9	?	P. C. Keytel.
37¼	7	11¼	Somaliland . . .	G. D. E. Chapman.
36¾	7¼	12¼	Lake Rudolf . . .	A. E. Butter.
♀ 36½	...	...	Northern Somaliland .	J. Menges.
36½	6	10	East Africa . . .	Rhys Williams.
36¾	6¼	7¾	Somaliland . . .	G. J. A. Troyte.
♀ 36¼	6¼	9	Do.	H. Z. Darrah.

— Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
36	7	6½	Somaliland . . .	G. D. E. Chapman.
36	6¾	7¾	East of Lake Rudolf . . .	A. H. Neumann.
36	6½	10½	Somaliland . . .	Capt. J. T. Brinkley.
36	6	8½	Do. . . .	Count J. Potocki.
36	7½	8	E. Africa . . .	G. G. Longden.
36	6¾	10	Do. . . .	J. L. Baird.
35¾	6¾	9½	Somaliland . . .	Lord Delamere.
♀ 35¾	5¾	8	Do. . . .	R. Wahrmann.
♀ 35½	6	11	East Africa . . .	W. F. Whitehouse.
♀ 35½	5¼	7	Do. . . .	Col. A. M. Rochfort.
- ♀ 35½	5	9½	Do. . . .	F. Gillett.
35½	6½	8¾	Somaliland . . .	Prince Nicolas Ghika.
♀ 35½	5¾	9½	East Africa . . .	Rhys Williams.
♀ 35¼	6	10½	East of Lake Rudolf . . .	A. H. Neumann.
35¼	6½	5½	Do. . . .	H. Z. Darrah.
35¼	6½	9½	E. Africa . . .	R. Fenwick.
35	6	7¼	Do. . . .	W. N. M'Millan.
35	6	9	Somaliland . . .	Lieut.-Gen. Sir Arthur Paget.
- ♀ 35	5½	7¾	Danakil . . .	Viscount Edmond de Poncins.
35	5¾	9¾	S. Abyssinia . . .	T. Morse.
35	5¾	7¾	Somaliland . . .	A. S. Trevor.
♀ 34¾	4¾	13½	Abyssinia . . .	P. H. G. Powell-Cotton.
♀ 34¾	5½	8½	Somaliland . . .	G. M. Norrie.
34¾	6½	8	Tana River . . .	Capt. C. Hankey.
♀ 34½	6	10½	Somaliland . . .	Major J. M'Call Maxwell.
34½	6¾	8¾	Do. . . .	Alex. R. Alston.
34½	7	6	Do. . . .	F. G. Barclay.
♀ 34½	5¾	8¾	Do. . . .	R. M'D. Hawker.
34½	6¾	9¾	East Africa . . .	Earl of Warwick.
34½	6½	10	Do. . . .	A. J. A. Douglas.
♀ 34½	5¾	13	Somaliland . . .	T. W. H. Clarke.
34½	6¾	8½	Do. . . .	E. Lee Townshend.
34½	7	7½	Do. . . .	R. E. Drake-Brockman.
34½	5¼	8	Do. . . .	Sir H. D. Tichborne, Bart.
- 34¾	6	10¾	Do. . . .	Count Scheibler.

- Owner's measurements.



Head of Fringe-eared Beisa.

FRINGE-EARED BEISA (*Oryx beisa callotis*).

Distinguished from the ordinary 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.

Distribution.—East Africa, south of Tana River. Although generally considered a distinct species, it seems better to regard this animal as a well-marked local race of the ordinary beisa. It is generally found in bush-covered country, either singly or in small herds, and is of a remarkably shy disposition. The Swahili name is cheroa..

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
33½	7	13	Makindu . . .	R. B. P. Cator.
♀ 33¼	5¾	14½	Kilimanjaro . . .	Capt. F. A. Dickinson.
32¼	6	12¼	Do.	Do.
31½	...	12	Makindu	Capt. M. M'Neil.
31	6	10	Do.	W. M. Greiss.
30½	5¾	10½	East Africa	F. J. Jackson.
30¼	...	6	Sabaki River District	Capt. T. W. Greenfield.
30	...	10	East Africa	Sir John Willoughby, Bart.

— Owner's measurements.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
29 $\frac{2}{8}$	6 $\frac{7}{8}$	8	East Africa . . .	Major W. Anstruther Gray.
29 $\frac{1}{2}$	5 $\frac{5}{8}$	7 $\frac{3}{8}$	Do.	Sir Robert Harvey, Bart.
29	6	6 $\frac{1}{2}$	Masailand . . .	Lieut.-Col. Hon. W. Coke.
29	5 $\frac{1}{4}$	11 $\frac{1}{2}$	Do.	Sir Edmund G. Loder, Bart.
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 $\frac{1}{4}$	6 $\frac{1}{2}$	10	Do.	T. D. M. Cardeza.
♀ 27 $\frac{1}{4}$	5 $\frac{3}{4}$	10 $\frac{1}{4}$	Kilimanjaro . . .	Capt. J. S. Cavendish.
27 $\frac{3}{8}$	6 $\frac{3}{8}$	10 $\frac{1}{2}$	Masailand . . .	C. Craig.
27 $\frac{1}{4}$	7	8	Do.	A. H. Wheeler.
27	6	9	Do.	E. Gedge.
27	6	9 $\frac{3}{4}$	Do.	Major L. Boyd-Moss.
26 $\frac{3}{4}$	6	13 $\frac{1}{2}$	Do.	F. W. Belt.

ARABIAN ORYX (*Oryx beatrix*).

This oryx is a much 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.

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.
26 $\frac{1}{8}$	4 $\frac{3}{4}$	10 $\frac{1}{4}$	Arabia	Paris Museum.
23 $\frac{3}{4}$	5	9 $\frac{1}{4}$	Do.	Sir Edmund G. Loder, Bart.
♀ 15	3 $\frac{3}{8}$	4 $\frac{1}{2}$	Head of Persian Gulf.	British Museum (B. T. Finch).

— Owner's measurements.



Head of White Oryx.

WHITE ORYX (*Oryx leucoryx*).

Sudanese name, *Abū harb*.

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 coloration, showing a more or less distinct chestnut tinge. The chestnut is developed chiefly on the neck, shoulders, under parts, and upper portions of the limbs; but in addition to this there are six brownish patches or streaks on the face, two of which are situated in the middle line, while two form eye-stripes, the other pair being between the horns and the eyes.

By some writers the name *O. leucoryx* is transferred to the preceding species, and the present one termed *O. algazael*.

Distribution.—North-Western Central Africa, from Nigeria, Sennar, and Kordofan to parts of Nubia, the Sudan, and (?) Palestine. Rare in collections and menageries.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
44½	6¾	9	Kordofan . . .	Capt. H. G. F. Stollard.
43¾	6½	10½	Do.	Capt. H. H. S. Morant.

RECORDS OF BIG GAME

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
♀ 43	5½	...	Gold Coast	P. J. Partridge.
43	...	15	Kordofan	Capt. A. J. B. Percival.
42¾	6¼	9	Do.	Hon. Walter Rothschild.
42	7½	...	Northern Territories, Gold Coast	Capt. H. Reel.
1 42	5	...	Nigeria	Capt. W. D. Wright.
1 41¾	6¾	...	Lake Tchad	E. B. Macnaughten.
41⅝	6	10½	Kordofan	E. N. Buxton.
40½	5¾	6¼	Do.	Capt. J. C. Graham.
39¾	5½	14¼	Do.	Prince Henry of Liechtenstein.
39¾	6¼	4½	Do.	British Museum (Major H. N. Dunn).
39½	6, ⅞	10¾	Do.	Berlin Museum.
♀ 39¼	5¼	6¾	Do.	Capt. G. S. Cameron.
39¼	6½	3½	Do.	C. E. Lyall.
39¼	5½	11¾	Do.	Brig.-Gen. B. T. Mahon.
1 39	5¼	...	N. of Sokoto	Lieut.-Col. P. S. Wilkinson.

- Owner's measurements

¹ Single horn.



Skull and Horns of Addax, presented to the British Museum by Mr. J. I. S. Whitaker.

The ADDAX (*Addax nasomaculatus*).

Arab name, *Kūbbājē*.

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), and, when in the winter coat, the heavy mass of long hair clothing the neck and shoulders and forming a forelock on the forehead. The general colour is yellowish white in summer and greyish in winter, but the head, neck, and mane are brown, 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, and Arabia.

	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	On front curve.	Straight line.				
	39 $\frac{5}{16}$	34 $\frac{1}{2}$	5 $\frac{3}{4}$	18 $\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
♀	39 $\frac{3}{8}$	32 $\frac{5}{8}$	4 $\frac{3}{4}$	24	Sudan . . .	H. Hodgson.
	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). (See illustration.)
	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 $\frac{3}{8}$	29 $\frac{1}{4}$	6 $\frac{1}{2}$	13		
	36 $\frac{1}{2}$	31 $\frac{1}{2}$	6	19 $\frac{3}{4}$	South Tunisia . . .	F. H. Barber.
	35 $\frac{3}{4}$	28	6 $\frac{3}{8}$	13 $\frac{3}{8}$	North Africa . . .	Hon. Walter Rothschild.
♀	34 $\frac{3}{4}$	28	4 $\frac{3}{4}$	7 $\frac{1}{2}$	Do.	Do.
	34 $\frac{3}{8}$	30	6 $\frac{1}{4}$	6 $\frac{1}{2}$	Do.	Dr. Albert von Stephani.
	34 $\frac{1}{4}$	27 $\frac{3}{4}$	6 $\frac{1}{2}$	17	South Tunisia . . .	A. E. Pease.
	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.	Julius Jeppe.
	33 $\frac{1}{2}$	26	5 $\frac{1}{2}$	12 $\frac{1}{4}$	Do.	Hon. R. A. Ward.
	32 $\frac{3}{8}$	27 $\frac{1}{2}$	6 $\frac{3}{4}$	18	S. W. of Dongola . . .	Capt. P. E. Vaughan.
♀	32 $\frac{3}{8}$	28	4 $\frac{3}{4}$	14 $\frac{1}{4}$	Do.	Mr. Justice Hopley.
♀	32	26 $\frac{1}{2}$	5	12 $\frac{3}{4}$	Do.	Julius Jeppe.
♀	30 $\frac{3}{4}$	27 $\frac{1}{4}$	4 $\frac{3}{4}$	17 $\frac{1}{4}$	South Algeria . . .	Hon. Walter Rothschild.

- Owner's measurements.



Head of Nilgai.

The NILGAI or BLUE BULL (*Boselaphus tragocamelus*).

This somewhat ungainly and decidedly small-horned antelope is the single Oriental representative of an important group whose other members 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. There are small face-glands, the muzzle is naked, and the tail is long and tufted. Except in the nilgai, the upper cheek-teeth have short and broad crowns.

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, as well as 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. 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 9'5. 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 North-West Provinces, Guzerat, and the Central Provinces.

Length on front.	Circumference.	Tip to Tip.	Locality.	Owner.
9 $\frac{1}{2}$	7 $\frac{3}{4}$	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 $\frac{1}{2}$	8 $\frac{1}{2}$	...	Bhurtpur . . .	Major E. R. Gordon.
9 $\frac{1}{4}$	6 $\frac{3}{4}$	4 $\frac{1}{2}$	?	British Museum.
9 $\frac{1}{4}$	7 $\frac{3}{4}$	7 $\frac{3}{4}$	?	G. W. Hemans.
9	6 $\frac{5}{8}$	3 $\frac{1}{2}$	?	A. O. Hume.
8 $\frac{1}{4}$	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 $\frac{3}{4}$	...	...	Jumna Valley . . .	Indian Museum.
8 $\frac{3}{4}$	7	...	N.W. Provinces . . .	C. Rose.
8 $\frac{5}{8}$	...	5	Oudh . . .	Officers' Mess, 3rd Goorka Rifles.
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 $\frac{1}{2}$	6 $\frac{1}{2}$	6	Do. . . .	Dublin Museum.
8 $\frac{1}{2}$	6	5 $\frac{1}{2}$	Do. . . .	Count J. Potocki.
8 $\frac{1}{2}$	6 $\frac{1}{2}$	4 $\frac{1}{4}$	Do. . . .	C. H. Shanau.
8 $\frac{1}{4}$	7 $\frac{1}{4}$	7 $\frac{3}{4}$	North India . . .	Sir Victor Brooke's Collection
8 $\frac{1}{4}$	...	...	Kathiawar . . .	Lieut.-Col. L. L. Feuton.
8 $\frac{1}{4}$	...	...	Kota . . .	H.H. the Maharaja of Bikanir.
8	6 $\frac{3}{4}$	6 $\frac{1}{4}$	Nimar, Cent. Prov. . .	Lieut.-Col. H. Wade-Dalton.
8	6 $\frac{1}{2}$	7 $\frac{1}{4}$	?	P. Niedeck.
8	6 $\frac{1}{2}$	5	Terai . . .	Capt. E. B. Cook.

- Owner's measurements.



Skull and Horns of Lesser Bushbuck in the Collection of the Hon. Walter Rothschild.

LESSER BUSHBUCK (*Tragelaphus scriptus*).

Assali, Danakil name.

Bata of the M'Kua.

Chivalawala in the Chilala and
Chibisa countries.

Boschbok of the Dutch.

Ibawara of the Lower Zambesi
natives.

Imbabala of the Swazis and
Matonga.

Inkonka (male), *Imbabala* (female)
of the Zulus.

M'babala in Barotsiland.

M'babala and *Seroto buchulu* in
Ngamiland.

Mbarwara of the Swahilis.

Mazo and *Bülümgitö* of the
Hausas.

Ngabi of the Waganda.

Scrolobutuku of the Bamangwatos.

Ungurungu of the Makubas.

Dol in Somaliland.

Decula in Abyssinia.

The bushbucks, or harnessed antelopes, form an extensive group of species nearly allied to the kudu, 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 kudu, the females are hornless. The

lesser bushbuck is the smallest and at the same time the most widely spread member of the group, having several 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. In the Abyssinian race (*T. scriptus decula*), which ranges into the dense forests bordering the Webbe River in Somaliland, and is locally known as *dol*, the build is low and stout, and the general colour yellowish, the light stripes being nearly obsolete. The Nile *T. scriptus bor* is allied. In the West African race (*T. scriptus typicus*), from West, Central, and South-Central Africa, the ground-colour is bright rufous, and the spots and stripes are very conspicuous. On the other hand, in the East African race (*T. scriptus roualeyni*) the bucks are dark brown, with only faint indications of white markings. Finally, in the Cape form (*T. scriptus sylvaticus*) the colour is dark brown without transverse white stripes, and the spots are reduced to a few indistinct ones on the haunches.

In the southern districts of Cape Colony bushbuck are still to be found in abundance, even in the neighbourhood of large towns like Port Elizabeth. Recourse is, however, had to preserving for the greater part of the year, by which means the well-known Easter Hunts, when driving is practised and large bags are made, are still kept up. In more inland districts either the does or both sexes are periodically protected. A wounded bushbuck will often make a desperate and dangerous charge.

The following specimens belong to the Cape form (*Tragelaphus scriptus sylvaticus*):—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19 $\frac{3}{4}$	6 $\frac{1}{4}$	4 $\frac{1}{2}$	Upper Shiré River . . .	Hon. Walter Rothschild. (See illustration.)
-19 $\frac{1}{2}$	6 $\frac{1}{4}$	7 $\frac{1}{4}$	Natal	C. S. Mann.
-19 $\frac{7}{8}$	5 $\frac{3}{4}$	11	Lower Zambesia . . .	Surgeon W. H. S. Stalkart, R.N.
19	5 $\frac{8}{8}$	3 $\frac{3}{4}$	B.C. Africa	J. E. S. Old.
18 $\frac{1}{2}$	6	5 $\frac{8}{8}$	Pungwe	P. H. Illingworth.
18 $\frac{1}{4}$	5 $\frac{1}{2}$	8 $\frac{8}{8}$	B.C. Africa	J. S. Bell.
17 $\frac{3}{4}$	5 $\frac{1}{2}$	4 $\frac{3}{4}$	Zululand	Julius Jeppe.
-17 $\frac{1}{2}$	6 $\frac{1}{2}$	7 $\frac{8}{8}$	Mount Zomba, B.C.A. . .	D. MacAlpine.
-17 $\frac{1}{2}$	5 $\frac{1}{2}$	10 $\frac{3}{4}$	Limpopo River	Grahamstown Museum.

- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
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	Capt. E. H. E. Abadie.
17 $\frac{1}{4}$	6 $\frac{3}{4}$	7 $\frac{1}{4}$	S.E. Africa	H. Miller.
-17 $\frac{1}{8}$	...	10 $\frac{3}{8}$	Mashonaland	J. Ff. Darling.
17	5 $\frac{1}{2}$	8 $\frac{1}{8}$	Mount Zomba, B.C.A.	C. C. Bowring.
16 $\frac{1}{2}$	5 $\frac{3}{4}$	7 $\frac{3}{8}$	B.C. Africa	R. H. Storey.
16 $\frac{1}{2}$	5 $\frac{3}{4}$	(one horn)	Pungwe	Col. G. A. Percy.
16 $\frac{1}{2}$	6	7	South Africa	Sir Edmund G. Loder, Bart.
-16 $\frac{1}{2}$	6	4 $\frac{1}{4}$	Cape Colony	Grahamstown Museum.
16 $\frac{1}{2}$	6 $\frac{1}{4}$	8	?	Capt. H. B. Dalgety.
16 $\frac{1}{2}$	5 $\frac{3}{4}$	9	N.W. Rhodesia	R. C. Forster.
16 $\frac{1}{4}$	5 $\frac{3}{8}$	7 $\frac{3}{8}$	Pungwe	Major G. T. M. Bridges.
16	6 $\frac{1}{4}$	7 $\frac{1}{4}$	Do.	Capt. Sir K. Fraser, Bart.
16	6 $\frac{1}{2}$	...	Kalamba Hills	F. Vaughan Kirby.
13	5 $\frac{1}{2}$	7	Benguela	G. W. Penrice.

The following specimens belong to the West African race (*Tragelaphus scriptus typicus*):—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12 $\frac{1}{4}$	5	5	Nigeria	Major J. A. Burdon.
-11 $\frac{1}{2}$	4 $\frac{7}{8}$	...	Do.	A. Noel Woods.
11 $\frac{1}{4}$	5	4 $\frac{3}{4}$	Do.	N. F. Baynes.
10 $\frac{1}{2}$	5	4 $\frac{1}{2}$	Do.	A. K. O'Brien.
10 $\frac{1}{2}$	4 $\frac{1}{2}$	2 $\frac{1}{4}$	Gambia	British Museum (late Earl of Derby).
9 $\frac{1}{2}$	4 $\frac{3}{4}$	4 $\frac{1}{4}$	Nigeria	Capt. B. R. M. Glossop.
8 $\frac{1}{4}$	4 $\frac{1}{2}$	3	Lagos	Capt. W. A. Ross.

The following specimens belong to the East African race (*Tragelaphus scriptus roualeyni*):—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
18 $\frac{1}{2}$	5 $\frac{1}{2}$	8 $\frac{1}{2}$	East Africa	Julius Jeppe.
17 $\frac{7}{8}$	6 $\frac{1}{4}$	5 $\frac{7}{8}$	Do.	Sir John Kirk.

- Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-17½	6¼	5¼	East Africa . . .	P. C. Keytel.
17¼	6½	6¾	Do. . . .	R. J. Church.
16¾	6	7	Do. . . .	T. D. M. Cardeza.
16¾	6½	7¾	Do. . . .	J. K. Hill.
16¾	5¾	6¼	Manda Island . . .	British Museum.
16½	7	7	East Africa . . .	Sheffield Neave.
16½	6	7¾	Do. . . .	F. W. Belt.
16½	6	7	East C. Africa . . .	A. H. Sharp.
16	6	3½	East Africa . . .	T. P. A. Holford.

The following specimens belong to the Nile race (*Tragelaphus scriptus bor*):—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
14½	4¾	5½	Sudan	Capt. H. S. Logan.
14	5½	7¼	Wadelai	Major M. L. Carleton.
-14	5¼	6¾	Gondokoro	Dr. A. MacCarthy Morrogh.
13½	5	...	Blue Nile	G. L. Harrison.
13½	5½	4¾	Bahr-el-Ghazal	Capt. R. B. Airey.
13¾	6	1¾	Do. . . .	Capt. H. M. Hutchinson.
13	5	6	Do. . . .	Capt. A. C. Jeffcoat.
12¾	5½	3¼	White Nile	E. C. Crispin.
12½	5	5¼	S. of Abukutu	Major R. M. Sanders.
12½	5½	2¾	Sudan	Prince Colloredo Mansfeld.
12¼	5	5	Do. . . .	Col. E. G. T. Bainbridge.
12¼	4¾	5	White Nile	Rowland Ward.
11¾	4½	6	Do. . . .	Capt. G. S. Cameron.
11	4½	4¼	Do. . . .	Capt. H. Gordon.
11	5	2¼	Do. . . .	Capt. H. R. Headlam.
-10½	...	4	Near Lado	Sir W. Garstin.

- Owner's measurements.



Head of Abyssinian race of Lesser Bushbuck shot in the Webbe Shebayle District, Somaliland, by Lieut.-Col. H. G. C. Swayne.

The following specimens belong to the Abyssinian *T. scriptus decula*; the body-measurements being those of a buck shot by Viscount Edmond de Poncins on the Hawash River, 1898:—

From nose to root of tail $48\frac{2}{5}$ ins.
 Height at withers $26\frac{3}{4}$ „

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
—17	...	...	Somaliland	Lieut.-Col. H. G. C. Swayne.
16½	6¼	5	Do.	A. H. Straker.
—13¾	5½	5¼	Harar, Abyssinia	Prince de Lucinge.
—12¾	5¼	3¼	Hawash River, Abyssinia	Viscount Edmond de Poncins.
12½	5	5¼	Abyssinia	W. D. James.
12	5½	5½	Do.	British Museum.
11¾	6	5½	Do.	A. E. Butter.
11	5½	5	Settite River, Abyssinia	Col. Ralph Vivian.
11	4¾	2¾	Northern Abyssinia	British Museum.

— Owner's measurements.



Horns of Nyala, from a specimen in the possession of Mr. F. H. Barber.

NYALA BUSHBUCK (*Tragelaphus angasi*).

This representative of the bushbucks is a large but delicately built species, standing about 3 feet 6 inches at the shoulder. Weight about 250 lbs. to 300 lbs. In both sexes the hair is very long and coarse, but in the male the colour is dark greyish brown with a small number of indistinct white stripes, while in the female it is bright reddish chestnut with clearly defined stripes. The males have a fringe of long hair on the neck and the under parts of the body, their horns being much rougher than those of the bongo. As in the latter, 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.		Circumference.	Tip to Tip.	Locality.	Owner.
On front-curve.	Straight.				
31 $\frac{3}{4}$	24 $\frac{5}{8}$	8 $\frac{1}{4}$	9 $\frac{1}{2}$	Zululand . . .	Hon. Walter Rothschild.
31 $\frac{1}{2}$	24 $\frac{1}{2}$	8 $\frac{1}{4}$	3 $\frac{1}{2}$	Shiré River, B.C.A. .	Fergus Maclagan.
29 $\frac{3}{4}$	24	...	11 $\frac{1}{2}$	?	F. J. Newnham.
29 $\frac{3}{8}$	25	7 $\frac{7}{8}$	14 $\frac{1}{4}$	Zululand . . .	Col. D. Bruce.
29 $\frac{1}{4}$	...	...	...	Delagoa Bay . . .	F. H. Barber. (See illustration.)
29 $\frac{1}{4}$	24 $\frac{1}{2}$	9	13	?	C. B. Addison.
28 $\frac{1}{2}$	23 $\frac{3}{4}$	8	12 $\frac{3}{4}$	Zululand . . .	Hon. Walter Rothschild.
28 $\frac{1}{2}$	22	7 $\frac{7}{8}$	8 $\frac{1}{2}$	Do. . . .	A. Cameron.
28 $\frac{1}{4}$	21 $\frac{1}{4}$	7 $\frac{1}{4}$	9 $\frac{3}{4}$	Delagoa Bay . . .	R. T. Coryndon.
28 $\frac{1}{4}$	...	...	6 $\frac{1}{4}$	. Do. . . .	P. C. Keytel.
28	24	8	15	Katanga, B.C.A. .	John Yule.
28	23	7 $\frac{1}{4}$	13 $\frac{1}{4}$	Near Chiromo, B.C.A.	Surgeon J. Dowson, R.N.
28	...	8 $\frac{1}{8}$	10 $\frac{1}{8}$	South Africa . . .	British Museum.
28	23 $\frac{1}{4}$	7 $\frac{1}{4}$	8 $\frac{3}{4}$	Delagoa Bay . . .	Rowland Ward.
27 $\frac{3}{4}$	23 $\frac{3}{4}$	8	15 $\frac{1}{4}$	Do. . . .	R. T. Coryndon.
27 $\frac{5}{8}$	22 $\frac{1}{2}$	7 $\frac{7}{8}$	9 $\frac{1}{2}$	South Africa . . .	Sir Victor Brooke's Collection.
27 $\frac{5}{8}$	23	7 $\frac{7}{8}$	8 $\frac{1}{4}$	Do. . . .	Earl of Dunmore.
27 $\frac{1}{2}$	22 $\frac{1}{4}$	7 $\frac{5}{8}$	8 $\frac{1}{2}$	Do. . . .	C. D. Rudd.
27 $\frac{1}{2}$	23 $\frac{1}{2}$	7 $\frac{1}{2}$	15 $\frac{3}{8}$	Delagoa Bay . . .	Sir H. J. Goold-Adams.
27 $\frac{3}{8}$	...	8 $\frac{1}{8}$	10 $\frac{1}{8}$	South Africa . . .	Sir Edmund G. Loder, Bart.
27 $\frac{1}{4}$	22 $\frac{3}{4}$	7 $\frac{1}{4}$	10 $\frac{3}{4}$	Do. . . .	Julius Jeppe.

- Owner's measurements.



Horns of Western Situtunga from the Gambia.

WESTERN SITUTUNGA (*Tragelaphus* [*Limnotragus*] *gratus spekei*).

Together with the true or eastern situtunga, of which it may be regarded as a local race, this antelope differs from the other members of the group by the extreme 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, too, are much more developed than in other harnessed antelopes. The general coloration of the West African species is very similar to that of the nyala, the ground-colour of the coat of the male being olive, and that of the female bright rufous, marked in both sexes with white

stripes on the body and spots on the face. There is, however, no fringe of long hair on the throat. Height at shoulder about 3 feet 7 inches. Both in this species and the true *situtunga* the horns of the males are longer and more twisted than in the other members of the genus, and thus come very close to those of the kudu. In the true *situtunga* the coloration of the adult male is uniform greyish brown. The West African species ranges from the Congo to the Gaboon and Cameroon districts. It has but seldom been collected by sportsmen, so that very little is known of its habits in the wild state. Several specimens have been bred in captivity at the Zoological Gardens, Amsterdam.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
34 $\frac{3}{4}$	28 $\frac{1}{2}$	8	21	Gambia . . .	H. C. Goddard.
32 $\frac{3}{4}$	27 $\frac{1}{4}$	9 $\frac{1}{8}$	15 $\frac{1}{8}$	Gaboon . . .	Sir Edmund G. Loder, Bart.
32 $\frac{3}{8}$	24 $\frac{1}{2}$	6 $\frac{7}{8}$	3 $\frac{3}{8}$	?	Dr. Albert von Stephani.
30 $\frac{1}{4}$	26 $\frac{3}{4}$	8	14 $\frac{5}{8}$	French Congo . . .	Hon. Walter Rothschild.
30	26 $\frac{1}{4}$	7 $\frac{1}{4}$	14 $\frac{7}{8}$	?	Julius Jeppe.
29 $\frac{1}{2}$	24 $\frac{1}{2}$	8 $\frac{1}{8}$	14	Gaboon . . .	Sir Edmund G. Loder, Bart.
28 $\frac{1}{2}$	23	8	8	Gambia . . .	A. Ohlsson. (See illustration.)
25 $\frac{3}{4}$	21 $\frac{1}{4}$	6 $\frac{3}{4}$	12 $\frac{1}{4}$	Do. . . .	Guy H. Sangster.
...	19	...	...	Gaboon . . .	British Museum.
23 $\frac{1}{2}$	18	7 $\frac{7}{8}$	11 $\frac{3}{4}$	Do. . . .	Sir Victor Brooke's Collection.
22 $\frac{3}{4}$	19 $\frac{1}{2}$	7	10 $\frac{3}{8}$	Nigeria . . .	Major J. A. Burdon.

- Owner's measurements.



Frontlet and Horns of Situtunga Bushbuck, from Mr. John Yule's specimen.

SITUTUNGA BUSHBUCK (*Tragelaphus* [*Limnotragus*] *spekei*).

Situtunga in Barotsiland.
Zowè in the Chilala and Chibisa
countries.

Nakong of the Batauwani at Lake
Ngami.

Njobo of the Waganda.

Situtunga, *Puvula*, *Unzuzu* of the
tribes on the Chobi and Central
Zambesi.

N'zoé of the natives of Lakanga
River north of the Zambesi.

This species, also known as the *nakong*, has the same habits and make as the West African *situtunga*, from which it differs by the uniformly greyish-brown colour of the adult male ; the female being dark

red, with slight indications of stripes, and the young also faintly barred and spotted. Another peculiarity is to be found in the length and silkiness of the hair. The horns, which are nearly smooth and strongly keeled, form nearly two complete turns, and thus approximate to those of the kudu.

Distribution.—The situtunga is an inhabitant of the dense reed-swamps bordering the rivers of Central, South-Central, and East Africa. The form inhabiting the Zambesi and Chobi valleys has been separated as *T. selousi*, on account of the female being coloured like the male. These antelopes are semi-aquatic in habits, frequently burying themselves up to the eyes in the water. Consequently they are some of the most difficult of all antelopes to kill; and have even baffled the energy of Mr. Selous. 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. Mr. A. B. Phipps, in October 1895, stated that they had become rare in the swamps bordering the Okavango River, owing to that river having changed its course and ceased to flow into the Botletli. Consequently they went down to the latter for water, where they were shot. 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 the late Captain Speke.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
35 $\frac{1}{2}$	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	28 $\frac{3}{4}$	8	26	Bahr-el-Ghazal . . .	Hon. Walter Rothschild.
35	28	7 $\frac{1}{2}$	15 $\frac{1}{2}$	South end of Lake Tanganyika	John Yule. (See illustration.)
-34 $\frac{1}{4}$	29 $\frac{1}{2}$	8	18	?	C. S. Mann.
-33 $\frac{1}{2}$	27 $\frac{5}{8}$	7 $\frac{3}{4}$	19	?	Julius Jeppé.
33 $\frac{1}{4}$	26 $\frac{1}{4}$	8	16 $\frac{5}{8}$	Okavango Valley . .	Sir H. J. Goold-Adams.
32 $\frac{3}{4}$	27 $\frac{3}{8}$	7 $\frac{3}{8}$	26 $\frac{3}{8}$	Chinde . . .	Hon. Walter Rothschild.
32 $\frac{5}{8}$	27	7 $\frac{1}{2}$	16 $\frac{3}{8}$	Chobi Valley . . .	F. C. Selous.
32	25	8 $\frac{1}{4}$	16 $\frac{1}{4}$	?	G. M. Bond.

- Owner's measurements.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On front curve.	Straight line.				
31 $\frac{1}{8}$	25 $\frac{3}{4}$	8 $\frac{1}{8}$	17 $\frac{1}{4}$	Near Linyanti . . .	F. C. Selous.
31 $\frac{1}{2}$	24 $\frac{3}{4}$	7	16 $\frac{1}{2}$	Chobi Valley . . .	British Museum (F. C. Selous).
31 $\frac{1}{2}$	23 $\frac{5}{8}$	8	15	Ngamiland . . .	Mervyn G. Williams.
31 $\frac{1}{2}$	25 $\frac{3}{4}$	7 $\frac{1}{2}$	13 $\frac{1}{4}$	Bangweolo . . .	F. Smitheman.
31 $\frac{1}{4}$	27 $\frac{1}{2}$	7 $\frac{5}{8}$	14 $\frac{5}{8}$	N.W. Rhodesia . . .	R. C. Forster.
¹ -31 $\frac{1}{2}$	25 $\frac{11}{16}$	7 $\frac{3}{8}$	14 $\frac{5}{8}$	Congoland . . .	Paris Museum (S. de Brazza).
31	23 $\frac{1}{4}$	8	9 $\frac{1}{2}$	?	G. Richards.
30 $\frac{3}{4}$	26	8	20	?	A. G. Biden.
30 $\frac{1}{2}$	24 $\frac{1}{4}$	8 $\frac{1}{4}$	14 $\frac{3}{4}$	Barotsiland . . .	Sir Edmund G. Loder, Bart.
30 $\frac{1}{2}$	25 $\frac{1}{2}$	7 $\frac{1}{4}$	16 $\frac{3}{4}$	Do. . . .	Major J. Carden.
30 $\frac{1}{2}$	24 $\frac{1}{2}$	7 $\frac{1}{4}$	12 $\frac{1}{2}$	B.C. Africa . . .	Grahamstown Museum.
30	24	7	17 $\frac{1}{4}$	Bahr-el-Ghazal . . .	Capt. R. B. Airey.
29 $\frac{3}{4}$	24	7 $\frac{1}{2}$	19	Do. . . .	Lieut. W. B. Drury, R.N.
29 $\frac{3}{4}$	25	8 $\frac{3}{4}$	17	?	R. A. Cooper.
29 $\frac{3}{4}$	25	7 $\frac{3}{4}$	15 $\frac{1}{4}$	N. E. Rhodesia . . .	F. H. Melland.
24 $\frac{1}{4}$	21	6 $\frac{3}{4}$	9 $\frac{1}{2}$	Angola	C. H. Pemberton.
22	19	11 $\frac{3}{4}$	7 $\frac{1}{2}$	Uganda	Capt. R. H. Price.
20 $\frac{3}{4}$	18 $\frac{1}{4}$	6 $\frac{1}{4}$	10	Benguela	G. W. Penrice.
17 $\frac{1}{4}$	...	5 $\frac{3}{4}$	7	Victoria Nyanza . . .	E. Gedge.
15 $\frac{3}{8}$	14 $\frac{1}{8}$	5 $\frac{3}{8}$	8 $\frac{3}{4}$	Do. . . .	Hon. Walter Rothschild.

- Owner's measurements.

¹ Determination provisional.



Head of Kudu.

The KUDU (*Strepsiceros capensis*).

<i>Agarzin</i> of the Abyssinians.	<i>Ngomo</i> in the Chilala and Chibisa countries.
<i>Eebala-bala</i> of the Amandebele.	
<i>Ee-silarwa</i> of the Makalakas,	<i>Noro</i> of the Mashonas.
<i>Diwar</i> of the Masaras.	<i>Tata</i> of the M'Kua.
<i>Godir</i> of the Somalis.	<i>Tolo</i> of the Bechuanas.
<i>Itolo</i> of the Basutos.	<i>Tolo</i> in Barotsiland and Ngamiland.
<i>Itshongonons</i> of the Swazis.	<i>Unza</i> of the Mazubias.
<i>Museeloua</i> of the Batongas.	<i>Unzwa</i> of the Makubas.

Although rather less brilliantly coloured than some of the bushbucks, the 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.



Skull and Horns of the Kudu, from Mr. F. H. Barber's specimen.

The following specimens belong to the typical form :—

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
...	48 $\frac{3}{8}$	...	...	Ngamiland . . .	F. H. Barber. (See illustration.)
64	41	11	23	Mashonaland . . .	F. C. Selous.
-63 $\frac{1}{2}$	46 $\frac{7}{8}$	11 $\frac{1}{4}$	45 $\frac{3}{8}$	Upper Shiré River . . .	Capt. C. H. Stigand.
63	48 $\frac{1}{2}$	12 $\frac{1}{2}$	49	Macloutsie River . . .	E. W. Tompson.
-63	44 $\frac{1}{2}$	...	42 $\frac{3}{4}$	Near Tete, Zambesia . . .	Major P. W. Forbes.
-63	39	10 $\frac{1}{2}$	12	?	Mr. Justice Hopley.
-62	...	12	22	Delagoa Bay. . . .	C. S. Mann.

- Owner's measurements.

RECORDS OF BIG GAME

On outside curve?	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	Straight line.					
-61½	45½	10¼	34	?	A. Griffiths.	
-61½	45¼	...	...	South Africa . . .	O. R. Dunell.
60¾	44½	12	29	Do. . . .	Rowland Ward.	
60½	45¾	11½	33	Macloutsie River . . .	F. C. Selous.	
-60½	44	...	31	South Africa . . .	H. T. and A. H. Glynn.	
-60½	47	10½	44¾	Do. . . .	A. Ohlsson.	
-60	39	10	7½	Lebombo Mountains . . .	F. Vaughan Kirby.	
59½	44	11½	25¾	?	S. T. Teague.	
59½	43¼	11	38	South Africa . . .	W. A. Simpson Hinchliffe.	
59¼	42¼	11½	19	?	G. Richards.	
59	50	12¼	48¼	N.W. Rhodesia . . .	R. C. Forster.	
58½	44½	11	33½	Do. . . .	Capt. H. T. Byas.	
58¼	46	10	39¼	South Africa . . .	Julius Jeppe.	
58	46	11½	39	S.E. Mashonaland . . .	J. G. Millais.	
58	43	10	40			
-58	46	...	...	Zomba, B.C.A. . . .	D. MacAlpine.
58	43½	10¼	32½	Okavango River . . .	Sir H. J. Goold-Adams.	
58	41	...	...	South Africa . . .	South African Museum.
57½	41	11½	21½	N.E. Transvaal . . .	A. M. Naylor.	
57½	41½	10	27	Do. . . .	Capt. D. J. Marker.	
57½	41	10½	25	British Central Africa . . .	J. H. Hayes.	
57½	44	11¼	31	Transvaal . . .	Capt. A. C. H. Kennard.	
57½	45¼	12	41	British Central Africa . . .	E. Homer.	
57¼	45¾	10¾	35	Do. . . .	H. C. Macdonald.	
57¼	44¾	11¾	34¾	South Africa . . .	Sir Edmund G. Loder, Bart.	
57½	43	11½	34¾	Mashonaland . . .	H. and C. Beddington.	
57	43	14	32	South Africa . . .	A. Moseley.	
57	42¼	11	31	Do. . . .	Major M. D. Graham.	
57	40½	12	24¾	Do. . . .	G. M. Spencer Smith.	

- Owner's measurements.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
56½	43½	11½	26½	Matabililand . . .	W. Van Ness.
56½	42½	10¾	38¾	?	Sir Victor Brooke's collection.
56½	41½	10½	23¾	Matabililand . . .	Hon. C. Greville.
56¼	44¼	11¾	33¼	South Africa . . .	Hon Walter Rothschild.
56	43¼	10½	33½	Do. . . .	M. Boger.
56	44	10¾	39	Do. . . .	F. B. Dunsford.
55¾	40½	10½	36	Do. . . .	C. M. Rolker.
55¾	41¾	...	35	Mazoe River . . .	R. C. Batley.
55¾	41	10¾	36	Do. . . .	F. Struben.
♀ 37	10	...	...	South Africa . . .	F. C. Selous.
♀ 27½	...	3¾	8¾	Do. . . .	Julius Jeppe



Kudu Skull with malformed Horns from South-West Africa, in the Collection of Mr. O. Volkmann.

The following specimens belong to the Somali and East African race (*Strepsiceros capensis chora*):—

On outside curve.	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	Straight line.	°				
58	43		10	40	Somaliland . . .	G. Chetwynd.
57½	42		11¼	41	Baringo . . .	H. Hyde Baker.
57	39		9½	36½	Somaliland . . .	H. R. H. le Duc d'Orléans.
...	40·7		8·8	30·9	Bahr Setit . . .	Prince Henry of Liechtenstein.
56½	35		10⅝	30	Somaliland . . .	Sir Edmund G. Loder, Bart.
56½	36½		8½	21½	Do. . . .	R. E. Drake-Brockman.
56	44¼		10¾	44¼	East Africa . . .	H. C. Phipps.
54½	38¾		10¼	22½	Somaliland . . .	P. H. G. Powell-Cotton.
54	39		10¼	32	Do. . . .	Norman B. Smith.
54	38½		10	21½	Sudan	Brig.-Gen. B. T. Mahon.
54	37		10¾	26½	Somaliland . . .	Capt. J. L. Baird.
53¾	37¾		10	32	S. Abyssinia . . .	T. Morse.
53½	40		11	25	East Africa . . .	Hon. Guy Wilson.
53	41½		11¾	47¼	Lake Rudolf . . .	A. E. Butter.
53	39¼		11	37½	Lake Baringo . . .	Capt. W. H. Nicolson.
52¾	39¾		10½	36	East Africa . . .	D. J. Shuttleworth.
52¼	39½		11¼	28	Do. . . .	Hon. Walter Rothschild.
52	37½		11½	31½	Do. . . .	Baron Maurice de Rothschild.
51½	40		10	42	Sudan	Brig.-Gen. B. T. Mahon.
51	38¼		10	30	Do. . . .	Capt. A. C. Parker.

Length.		Circum- ference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
50	39	9	38½	Somaliland	Major P. C. Elliott-Lockhart.
50	33½	10¼	18	Sudan	Capt. E. B. Hankey.
49½	37½	10	25½	Do.	Capt. C. R. G. Mayne.
49	35¼	10	21½	Do.	Major C. E. Wilson.
49	36	10	36¼	Do.	Capt. G. S. Nickerson.



Head of Lesser Kudu, from a specimen shot by Mr. Norman B. Smith.

LESSER KUDU (*Strepsiceros imberbis*).

Godir of the Somalis.

Sara of the Abyssinians of Danakil.

Gadams of the Gallas.

Kungu of the Swahilis.

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 white throat-bands, and the 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 German and British East Africa. This antelope generally goes in pairs or threes, and is partial to the cover 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.

Length.		Circum- ference.	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. (See illustration.)
35 $\frac{1}{4}$	26 $\frac{1}{2}$	5 $\frac{3}{4}$	17 $\frac{3}{4}$	Do. . . .	G. Chetwynd.
34 $\frac{1}{4}$	26	6 $\frac{1}{2}$	11	Do. . . .	Hon. Walter Rothschild.
34	26 $\frac{1}{2}$	...	...	Do. . . .	Lieut.-Col. H. G. C. Swayne.
34	26	6 $\frac{3}{4}$	14 $\frac{1}{4}$	Do. . . .	W. W. Ashley.
34	27	6 $\frac{1}{4}$	11	Do. . . .	British Museum (R. M'D. 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 $\frac{5}{8}$	14	East Africa . . .	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	26	6 $\frac{1}{2}$	10 $\frac{1}{2}$	Hawash, Abyssinia . . .	Prince de Lucinge.
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 $\frac{1}{4}$	...	Do. . . .	Col. C. C. Ellis.
31 $\frac{1}{4}$	25	7	10	Do. . . .	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.
-30 $\frac{3}{4}$	25	6 $\frac{1}{2}$	9 $\frac{3}{4}$	Do. . . .	Viscount Edmond de Poncins.
30 $\frac{3}{4}$	24 $\frac{3}{8}$	6 $\frac{5}{8}$	11 $\frac{7}{8}$	Do. . . .	W. D. James.
-30 $\frac{3}{4}$	25 $\frac{1}{8}$	7 $\frac{1}{8}$	13 $\frac{1}{8}$	Do. . . .	O. Neumann.
30 $\frac{5}{8}$	25 $\frac{1}{2}$	6 $\frac{3}{8}$	11 $\frac{1}{8}$	Do. . . .	A. H. Straker.
30 $\frac{1}{2}$	23 $\frac{5}{8}$	6	9 $\frac{1}{2}$	Tana River . . .	Capt. C. Hankey.
30 $\frac{1}{4}$	24	6 $\frac{5}{8}$	11 $\frac{7}{8}$	Somaliland . . .	H. R. H. le Duc d'Orléans.
30	24 $\frac{1}{4}$	6 $\frac{3}{8}$	13	Do. . . .	T. P. A. Holford.
30	23 $\frac{1}{2}$	6 $\frac{1}{4}$	13 $\frac{1}{4}$	Do. . . .	W. N. McMillan.

- Owner's measurements.



Skull and Horns of Bongo, shot by Mr. Claude Beddington.

The BONGO (*Boöcerus 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 coloration. It differs, however, in that the tail is tufted (like that of an eland), and also by the presence of horns in both sexes, at least in the East African race (*B. euryceros isaaci*). 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, and two white spots below each eye. There is no throat-fringe, 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 and the Gaboon, and thence through the forest district to Uganda.

On front curve.	Length.		Circumference.	Tip to Tip.	Locality.	Owner.
	Straight line.					
35	29 $\frac{7}{8}$	10	11	Ashantee . . .	Hon. Walter Rothschild.	
33 $\frac{3}{4}$	27 $\frac{5}{8}$	11	13 $\frac{3}{4}$	Mau Forest, East Africa	Do.	
32 $\frac{1}{4}$	26 $\frac{5}{8}$	10 $\frac{1}{2}$	12 $\frac{1}{4}$	Togoland . . .	Claude Beddington. (See illustration, p. 326.)	
31 $\frac{3}{4}$	26 $\frac{1}{2}$	9 $\frac{3}{4}$	12 $\frac{3}{8}$	West Africa . . .	Sir Victor Brooke's Collection.	
♀ 30 $\frac{1}{2}$	27 $\frac{1}{2}$	8 $\frac{1}{4}$	11	East Africa . . .	Hon. Walter Rothschild.	
30 $\frac{1}{4}$	24 $\frac{1}{2}$	9 $\frac{1}{2}$	9 $\frac{1}{4}$	West Africa . . .	Julius Jeppe.	
30	24 $\frac{1}{8}$	9 $\frac{5}{8}$	11 $\frac{1}{4}$	Ashkankolu Mountains	British Museum.	
29 $\frac{1}{2}$	25 $\frac{7}{8}$	9 $\frac{3}{4}$	10 $\frac{1}{8}$	Gaboon . . .	British Museum (P. Du Chaillu).	
29	24 $\frac{1}{2}$	10 $\frac{1}{4}$	...	Mau Forest . . .	R. J. Church.
28 $\frac{1}{2}$	24	9 $\frac{1}{4}$	10	Togoland . . .	Hon. Walter Rothschild.	
28	24	10	9 $\frac{1}{2}$	Gaboon . . .	Dr. Albert von Stephani.	
27 $\frac{5}{8}$	24	10 $\frac{1}{2}$	10 $\frac{5}{8}$	Togoland . . .	Berlin Museum.	
27 $\frac{1}{2}$	23 $\frac{1}{2}$	9 $\frac{5}{8}$	12 $\frac{1}{4}$	?	Mr. Justice Hopley.
27 $\frac{1}{2}$	24	9 $\frac{1}{2}$	10 $\frac{3}{8}$	Mau Forest . . .	W. N. McMillan.	
♀ 27 $\frac{1}{2}$	24 $\frac{1}{8}$	7 $\frac{1}{2}$	4 $\frac{1}{2}$	Gold Coast . . .	Hon. Walter Rothschild.	

— Owner's measurements.



Frontlet and Horns of Eland.

The ELAND (*Taurotragus oryx*).

<i>Doo</i> of the Masaras.	<i>Mpofu</i> in Barotsiland.
<i>Ee-pofu</i> of the Makalakas.	<i>Mpofu</i> in Ngamiland.
<i>Eland</i> of the Dutch and English.	<i>Ntamu</i> of the Wagandas.
<i>Impofu</i> of the Amandebele.	<i>Msongo</i> in the Chilala and Chibisa
<i>Insefo</i> of the Masubias and Batongas.	countries.
<i>Mofo</i> of the Mashonas.	<i>Oo-schefo</i> of the Macubas.
<i>Moju</i> of the Gallas.	<i>Pakala</i> of the Makua.
<i>Mpofu</i> of Swahili.	<i>Pofu</i> of the Bechuanas.
	<i>Böggäh</i> of the Sudanese.

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. Female horns are more slender than those of the bulls.

Bulls of the common eland stand from 5 feet 9 inches to as much as $6\frac{1}{2}$ 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. This striped variety has been named *T. oryx livingstonei*. An eland from British East Africa has the sides of the forehead chestnut in place of dark brown, and an imperfect white chevron below the eyes; it has been named *T. oryx pattersonianus*. 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 are still to be met with. No species of large game is more easily approached than eland, and, as a rule, none succumbs more speedily to the bullet. Occasionally female eland develop horns

in which the spiral is almost obsolete and the length exaggerated ; these have been supposed to indicate a distinct species (*Antelope triangularis*).

Length, straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
37	12 $\frac{3}{4}$	23 $\frac{3}{4}$	Barotsiland . . .	T. G. Davey.
34 $\frac{3}{4}$	11 $\frac{1}{2}$	27	British Central Africa	F. E. F. Jones.
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 $\frac{1}{2}$	12 $\frac{3}{4}$	12 $\frac{1}{2}$	Do. . . .	British Museum (F. C. Selous).
31 $\frac{1}{2}$	14	17	Do. . . .	R. C. Forster.
31 $\frac{1}{2}$	14	22	Do. . . .	Col. C. Harding.
31 $\frac{1}{4}$	13 $\frac{1}{4}$	13 $\frac{1}{2}$	Barotsiland . . .	Norman B. Smith.
31	16	14	Rhodesia . . .	F. C. Selous.
31	11	19 $\frac{1}{2}$	S. Africa . . .	W. A. Simpson Hinchliffe.
31	12 $\frac{1}{2}$	15 $\frac{3}{4}$	Rhodesia . . .	H. H. Williams.
31	12	18	Do. . . .	R. T. Coryndon.
31	13	15 $\frac{3}{4}$	Do. . . .	Capt. J. P. Grenfell.
30 $\frac{1}{2}$	11 $\frac{1}{2}$	20 $\frac{1}{2}$	British Central Africa	Capt. F. D. Markham.
29 $\frac{3}{4}$	11 $\frac{1}{2}$	17 $\frac{1}{2}$	Do.	C. Francis.

The following specimens belong to the East African race :—

Length, straight line.	Circumference	Tip to Tip.	Locality.	Owner.
31 $\frac{5}{8}$	10 $\frac{1}{4}$	25 $\frac{1}{2}$	East Africa . . .	F. J. Jackson.
27 $\frac{1}{2}$	10	15 $\frac{3}{4}$	Tana River . . .	Capt. H. De Prée.
26 $\frac{1}{2}$	12	9 $\frac{1}{4}$	N. of Machakos . . .	E. J. Mardon.
25 $\frac{3}{4}$	11 $\frac{1}{2}$	15 $\frac{1}{4}$	East Africa . . .	R. Fenwick.
♀ 25 $\frac{5}{8}$	8	8 $\frac{1}{2}$	Do. . . .	G. Crompton.
25	10 $\frac{1}{2}$	16 $\frac{1}{2}$	Laikipia . . .	Col. J. H. Patterson.
25	11	12 $\frac{3}{4}$	East Africa . . .	G. L. Harrison.



Malformed Horns of Cow Eland in the Collection of Major W. Anstruther Gray.

The following are female specimens :—

Length, straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
41	$7\frac{7}{8}$	13	German East Africa	Major von Tiedemann.
¹ 39½	7	26¾	?	Major W. Anstruther Gray.
36	$7\frac{1}{2}$	21¼	?	P. C. Keytel.

— Owner's measurements.

¹ *Triangularis.*

RECORDS OF BIG GAME

Length, straight line.	Circum- ference.	Tip to Tip.	Locality.	Owner.
¹ 35 $\frac{3}{8}$	7 $\frac{1}{2}$	15	Angola . . .	C. W. Sharp.
35 $\frac{3}{8}$	8 $\frac{9}{16}$	20 $\frac{1}{16}$	Zomba Plain, B.C.A.	Charterhouse Museum (Dr. Percy Rendall).
¹ 34	6 $\frac{3}{4}$	...	N.W. Rhodesia . . .	R. C. Forster.
32 $\frac{1}{4}$	6 $\frac{3}{4}$	...	Chobi Valley . . .	M. C. Greaves-Bagshawe.
32 $\frac{1}{4}$	6 $\frac{3}{4}$	5 $\frac{3}{4}$	South Africa . . .	Julius Jeppe.
32 $\frac{1}{8}$	7 $\frac{1}{8}$	8 $\frac{3}{4}$	?	Mr. Justice Hopley.
32	9 $\frac{1}{2}$	20 $\frac{1}{2}$	Mashonaland . . .	F. C. Selous.
32	8	20	British Central Africa	Capt. J. S. Brogden.
31 $\frac{3}{4}$	7 $\frac{3}{4}$	17	Matabililand . . .	Major R. Hayes-Sadler.
31 $\frac{3}{4}$	7 $\frac{1}{2}$	15 $\frac{1}{2}$	?	F. Struben.
31 $\frac{3}{4}$	8 $\frac{1}{2}$	28 $\frac{1}{2}$	Barotsiland . . .	R. T. Coryndon.
31 $\frac{3}{4}$	7 $\frac{1}{2}$	18 $\frac{1}{2}$	Mashonaland . . .	S. Chillingworth.
31 $\frac{3}{4}$	8	...	Barotsiland . . .	Col. C. Harding.
31 $\frac{1}{2}$	8 $\frac{1}{4}$	20 $\frac{3}{4}$	Mashonaland . . .	British Museum (F. C. Selous).
31	8 $\frac{3}{4}$	12 $\frac{3}{4}$	Rhodesia . . .	Major C. A. Sykes.
30 $\frac{3}{4}$	7	16 $\frac{3}{4}$	S. Africa . . .	W. A. Simpson Hinchliffe.

— Owner's measurements.

¹ *Triangularis*.



Frontlet and Horns of Lord Derby's Eland, from the Gambia.

LORD DERBY'S ELAND (*Taurotragus derbianus*).

Although living specimens were formerly in the collection at Knowsley, this magnificent species is chiefly known in England by a few specimens of the head and several of horns. The latter are longer and stouter than those of the common species, and thus indicate the larger size of the northern animal. The bulls have the forehead

chestnut, an imperfect white chevron below the eyes, the lower part of the face brown, a dark collar bordered below with white on the sides of the neck, and a dark brown mane. The general colour of the hair is rufous, instead of fawn.

Distribution.—The open districts of the interior of Senegambia and Gambia, and thence to the Egyptian Sudan. Possibly the species may grade into the last.

A. The following specimens belong to the Senegambian race (*T. derbianus typicus*):—

Length, straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
-40	13½	Single horn	?	Berlin Museum.
-39⅔	...	...	?	Paris Museum.
34½	14½	22¾	Gambia . . .	Sir Edmund G. Loder, Bart.
-34	13½	...	?	F. Coburn.
34	12¾	...	?	J. Carr Saunders.
-34	11½	17	Gambia . . .	Dublin Museum.
33	13¾	26	Do. . . .	C. Sharland.
32½	12½	29⅞	Do. . . .	British Museum (Earl of Derby).
32½	9½	12¾	?	Sir Edmund G. Loder, Bart.
32½	13	23½	Gambia . . .	H. R. H. le Duc d'Orléans.
32	13	24½	?	Hon. Walter Rothschild.
31⅞	11⅞	28⅞	Gambia . . .	British Museum (Earl of Derby).
31½	12½	15½	Do. . . .	H. C. Goddard.
31½	12	18⅞	?	Sir Victor Brooke's Collection.
-31	11½	...	Gambia . . .	Sir R. B. Llewelyn.
30⅞	10¾	26¾	?	British Museum (F. W. Reade).
-27⅞	13⅞	23⅞	Gambia . . .	Paris Museum.
♀ 25	9	10¾	Do. . . .	H. C. Goddard.
♀ 24½	9	6½	Do. . . .	British Museum (F. W. Reade).

- Owner's measurements.



Skull and Horns of the Sudan race of Lord Derby's Eland, in the collection of Mr. Carl Jeppe.

B. The under-mentioned specimens are referable to the Sudan race (*T. derbianus gigas*):—

Length on straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
39 $\frac{1}{4}$	13	...	Near Lado, White Nile	Maj.-Gen. Sir R. Wingate.
39	13 $\frac{1}{2}$	32 $\frac{3}{4}$	Bahr-el-Ghazal.	Hon. Walter Rothschild.
38 $\frac{3}{4}$	13	38 $\frac{1}{4}$	Do. . .	Do.
38 $\frac{3}{4}$	14	29 $\frac{1}{4}$	Do. . .	Capt. R. J. Collins.
38 $\frac{1}{2}$	13 $\frac{3}{4}$	19 $\frac{1}{2}$	Do. . .	Julius Jeppe.
37 $\frac{1}{2}$	13 $\frac{3}{4}$	28 $\frac{3}{4}$	Do. . .	Capt. A. J. B. Percival.
37 $\frac{1}{2}$	13 $\frac{3}{4}$	35	Do. . .	Capt. R. B. Airey.
37	13	26 $\frac{1}{4}$	Do. . .	Carl Hagenbeck.
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. . .	Capt. R. B. Airey.
♀ 33 $\frac{3}{4}$	10 $\frac{1}{4}$	16 $\frac{3}{4}$	Do. . .	Hon. Walter Rothschild.
♀ 32	9	24 $\frac{3}{4}$	Do. . .	H. A. Davidson.
♀ 31 $\frac{1}{4}$	9 $\frac{3}{4}$	16 $\frac{3}{4}$	Do. . .	Capt. A. J. B. Percival.

Measurements of an old bull Sudan Eland. Shot near Wau, Bahr-el-Ghazal, by Capt. R. J. Collins.

Height just behind centre of shoulder	5 feet 8 inches
Nose to base of tail	9 " 0 "
Girth 6 inches from foreleg	7 " 1 $\frac{1}{2}$ "
Length of tail	2 " 3 "
Length of body	6 " 2 "
Round centre of neck	4 " 2 $\frac{1}{2}$ "
Horns	3 " 3 $\frac{3}{4}$ "

A younger bull had horns measuring 37 $\frac{3}{4}$ inches in length.



Head of Chamois shot by Mr. R. K. Cross.

The CHAMOIS (*Rupicapra tragus*).

With the chamois we take leave of the antelopes properly so-called, and come to 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 coloration 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. Probably four distinct races may be recognised, namely, the comparatively small ibizard of the Pyrenees, the true chamois, or gems, of the Alps, a third form in the Apennines, and a fourth in the Caucasus.

Length on front curve.	Circumference.	Tip to Tip.	Spread.	Locality.	Owner.
-12 $\frac{3}{4}$	...	...	...	Hungary . . .	Baron Donald Schönberg.
-12 $\frac{1}{4}$	...	...	...	Do. . . .	C. G. Danford.
¹ -12 $\frac{3}{4}$	4 $\frac{1}{2}$	...	7 $\frac{1}{2}$	Retyezat, Carpathians	Count Arpad Teleki.
12 $\frac{1}{8}$	3 $\frac{1}{2}$	5 $\frac{3}{8}$	6 $\frac{1}{8}$	Branu, Carpathians	C. G. Danford.
-12	4	...	...	Hinter Riss . . .	H.R.H. the Duke of Saxe-Coburg and Gotha.
12	...	...	...	Tyrol (?) . . .	Count Arco.
12	...	...	...	Carpathians . . .	Count Zdenko Kinsky.
-11 $\frac{1}{2}$	...	...	...	Retyezat . . .	Count Erbach.
-11 $\frac{1}{2}$	3 $\frac{5}{8}$	6 $\frac{1}{4}$	...	Albreis Morteratch, Engadine	A. E. Pease.
11 $\frac{3}{8}$	3 $\frac{5}{8}$	7 $\frac{3}{8}$	...	S. Austria . . .	J. Hamilton Leigh.
11 $\frac{3}{8}$	3 $\frac{5}{8}$	5 $\frac{7}{8}$	...	Do. . . .	R. K. Cross. (See illustration.)
11 $\frac{1}{4}$	3 $\frac{1}{2}$	6 $\frac{1}{2}$	...	? . . .	Col. Howard.
♀-11 $\frac{1}{4}$	...	4 $\frac{1}{8}$	...	Retyezat, Transylvania	Baron A. Nopcsa.
-11 $\frac{1}{8}$	...	...	...	Retyezat . . .	G. von Kendeffy.
11	3 $\frac{1}{2}$	4 $\frac{5}{8}$	...	Transylvania . . .	F. C. Selous.
11	3 $\frac{1}{4}$	7 $\frac{1}{2}$	...	Do. . . .	St. George Littledale.
-11	3 $\frac{1}{4}$	5 $\frac{1}{2}$	...	? . . .	Count John of Meran.
-10 $\frac{3}{4}$	3 $\frac{1}{4}$	6 $\frac{1}{8}$	...	Bulgaria . . .	Dr. Albert von Stephani.
10 $\frac{3}{4}$	3 $\frac{1}{2}$	4 $\frac{5}{8}$	...	Tyrol . . .	Sir Edmund G. Loder, Bart.
10 $\frac{1}{4}$	...	5 $\frac{1}{2}$	...	Hinter Riss . . .	Sir Clement Hill.
-10 $\frac{3}{4}$	3 $\frac{1}{4}$	7 $\frac{1}{2}$	...	Herzegovina . . .	Eberhard Hollinek.
♀-10 $\frac{5}{8}$	3	5 $\frac{1}{4}$	...	Austria . . .	Hon. Walter Rothschild.
♀-10 $\frac{3}{4}$	...	5 $\frac{1}{4}$	...	Retyezat . . .	C. G. Danford.

- Owner's measurements.

¹ 123 $\frac{1}{2}$ lbs. not clean, and horns now measure 11 $\frac{1}{4}$.

Length on front curve.	Circumference.	Tip to Tip.	Spread.	Locality.	Owner.
♀ 10 $\frac{5}{8}$	...	...	7	S. Austria	R. K. Cross.
-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 $\frac{9}{16}$	...	...	Austria	L. R. Rate.
♀ 10 $\frac{1}{2}$	3 $\frac{3}{4}$	6 $\frac{1}{4}$	...	S. Austria	J. Hamilton Leigh.
10 $\frac{5}{16}$	3 $\frac{3}{8}$	3 $\frac{5}{8}$	...	Do.	J. Kenneth Foster.
-10 $\frac{5}{16}$	...	...	...	Retyezat	Baron P. Inkey.
10 $\frac{1}{4}$	3 $\frac{1}{2}$	5 $\frac{1}{4}$	...	?	E. N. Buxton.
10 $\frac{1}{4}$	4 $\frac{1}{8}$	3 $\frac{7}{8}$	...	Tyrol	Sir Edmund G. Loder, Bart.
-10 $\frac{1}{4}$	3	5 $\frac{3}{8}$	...	?	Count Palffy.
10 $\frac{1}{4}$	3 $\frac{1}{4}$	5 $\frac{1}{4}$	...	Austria	Sir Robert Harvey, Bart.
♀ 10 $\frac{1}{4}$	...	...	...	Grindelwald	F. A. Labouchere.
9 $\frac{7}{8}$	3 $\frac{1}{2}$	3	...	?	Norman Lamont.
9 $\frac{7}{8}$	3 $\frac{3}{8}$	4 $\frac{3}{4}$	...	?	Capt. W. Waring.
9 $\frac{3}{4}$	3 $\frac{3}{4}$	3	...	W. Caucasus	St. George Littledale.
9	3	5 $\frac{1}{4}$	...	Pyrenees	Sir Victor Brooke's Collection.
8 $\frac{3}{4}$	3	3	...	Caucasus	Prince E. Demidoff.
-8 $\frac{1}{2}$	3	3 $\frac{3}{4}$	...	N. Spain	Abel Chapman.
-6	2	4 $\frac{1}{2}$	...	France	Dr. Albert von Stephani.

The following are the best specimens in the collection of His 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 $\frac{5}{8}$	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 $\frac{5}{8}$	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 $\frac{5}{8}$	4 $\frac{7}{8}$	Do.	July 31, 1885.
♀ -9 $\frac{5}{8}$	2 $\frac{3}{4}$	7 $\frac{1}{2}$	Do.	„ 10, 1886.
-8 $\frac{5}{8}$	3 $\frac{1}{4}$	8 $\frac{1}{4}$	Do.	August 1, 1885.

- Owner's measurements.



The best Chamois Heads shot by His Majesty the Emperor of Austria.



Horns of the first three Chamois shot by His Majesty
the Emperor of Austria.



Head of Brown Himalayan Goral. From a Nepalese specimen in the British Museum.

HIMALAYAN and BURMESE GORALS (*Urotragus goral*, etc.).

Goral of the W. Himalaya. *Pj, Par, Rai, Rom* of Kashmir.
Sáhare, Sarr of the Sutlej valley.

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.

By English sportsmen Himalayan goral are commonly termed chamois, their habits being very similar to those of the true chamois.

Three forms of Indo-Burmese gorals have been described and may be briefly diagnosed as follows:—

1. *Urotragus goral*.—Colour rufous 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. Horns comparatively straight, and not heavily ringed. Eastern Himalaya.

2. *Urotragus bedfordi*.—Colour yellowish grey-fawn suffused with blackish, the light throat-patch pure white and extending on to the cheeks, 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 in part? Eastern) Himalaya.

3. *Urotragus evansi*.—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. Upper Burma.

Length on front curve.	Girth.	Tip to Tip.	Locality.	Owner.
9 $\frac{1}{8}$	3 $\frac{3}{4}$	4 $\frac{5}{16}$	Near Musuri . . .	H. Simons.
8 $\frac{1}{2}$	...	...	Bissahir . . .	Lient.-Col. A. E. Ward.
♀ 8 $\frac{1}{2}$	...	...	Dalhousie . . .	The late Capt. J. Johnston-Stewart.
8 $\frac{1}{4}$	3 $\frac{7}{8}$	1 $\frac{3}{4}$	Gurhwal . . .	D. L. R. Lorrimer.
8 $\frac{1}{8}$	3 $\frac{1}{2}$	...	?	Col. J. Biddulph.
8	...	...	Chamba . . .	Major C. B. Vandeleur.
8	3 $\frac{3}{4}$	3 $\frac{1}{8}$	Do. . . .	Major Cecil Levita.
7 $\frac{7}{8}$	3 $\frac{3}{8}$	3 $\frac{3}{16}$	Do. . . .	D. Cameron.
7 $\frac{7}{8}$	4	2 $\frac{3}{8}$	Do. . . .	Capt. J. T. C. Murray.
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 . . .	A. O. Hume.
7 $\frac{1}{2}$	...	...	Near Dalhousie . . .	Sir F. E. S. 'Adair.
7 $\frac{7}{16}$	3 $\frac{1}{2}$	2 $\frac{3}{4}$	Chamba . . .	A. H. Ogilvy Spence.
7 $\frac{3}{8}$	4	5 $\frac{1}{8}$	Gurhwal . . .	Capt. L. W. S. Oldham.
7 $\frac{1}{4}$	3	3	Chamba . . .	Capt. F. W. H. Walshe.
7 $\frac{1}{8}$	3 $\frac{1}{4}$	2 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
7 $\frac{1}{8}$	3 $\frac{3}{4}$	3 $\frac{5}{8}$	Jhelam Valley, Kashmir	P. H. G. Powell-Cotton.
7 $\frac{1}{8}$	4	2 $\frac{3}{4}$	?	Capt. M. E. D. Hepenstat.
7	2 $\frac{3}{4}$	3 $\frac{3}{4}$	?	Major J. A. 'Orr-Ewing.

— Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Girth.	Tip to Tip.	Locality.	Owner.
-7	3 $\frac{1}{4}$	3 $\frac{1}{8}$	?	Major H. W. Codrington.
-7	...	...	?	Indian Museum.
-7	...	...	Punjab . . .	Capt. A. Hicks-Beach.
7	3 $\frac{3}{4}$	3 $\frac{1}{4}$	?	Duke of Bedford.
7	3 $\frac{3}{4}$	...	?	Major G. S. Rodon.
7	3 $\frac{5}{8}$	4	Chamba . . .	Col. H. D. Olivier.
7	3 $\frac{3}{8}$	2 $\frac{3}{8}$	Kashmir . . .	Sir Robert Harvey, Bart.
7	3 $\frac{5}{8}$	2 $\frac{5}{8}$	Do. . . .	J. H. Phelps.
♀ 7	2 $\frac{3}{4}$	2	?	Capt. F. W. H. Walshe.

TIBETAN and CHINESE GORALS.

Species.	Collected by	Length on front curve.	Girth.	Tip to Tip.	Locality.	Owner.
<i>Urotragus edwardsi</i>	Père A. David	8 $\frac{1}{6}$ 8 $\frac{5}{16}$	7 $\frac{1}{8}$ 7 $\frac{1}{8}$	4 2	Moupin, Tibet	Paris Museum.
„ <i>argyrochoetus</i>	Do.	9 $\frac{1}{2}$	7 $\frac{1}{8}$	4	Ta-t sien-lou, Szechuan	Do.
„ <i>caudatus</i>	Do.	6 $\frac{5}{16}$ 6 $\frac{1}{4}$	3 $\frac{0}{16}$ 4	3 $\frac{1}{4}$ 3 $\frac{1}{2}$	North of Peking ?	Do. British Museum.
„ <i>cinereus</i>	Do.	7 $\frac{1}{2}$	3 $\frac{1}{4}$	3 $\frac{5}{16}$	Tibet . . .	Paris Museum.
„ <i>griseus</i>	Do.	4 $\frac{3}{4}$	3 $\frac{1}{4}$	2 $\frac{3}{4}$	Do. . . .	Do.

JAPANESE SEROW (*Nemorhædus crispus*).

A rather small species, with a very long coat of grey hair.
Distribution.—The southern islands of Japan; an allied species, (*N. swinhoei*) inhabiting the island of Formosa.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
6 $\frac{3}{4}$	4 $\frac{1}{4}$	3 $\frac{1}{4}$	Japan . . .	St. George Littledale.
-6 $\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{1}{4}$	Do. . . .	Imperial Museum, Vienna.
5 $\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{1}{4}$	Do. . . .	British Museum.
4 $\frac{3}{4}$	3	3 $\frac{1}{4}$	Do. . . .	E. L. Fletcher.

- Owner's measurements.

SUMATRAN SEROW (*Nemorhædus sumatrensis*).

A large and clumsily built ruminant, with the ears long, the hair coarse, rather thin, and elongated into a crest from the nape to the withers; the under fur found in the gorals being absent. The general colour of the upper parts is 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. Although by no means large, the shining black, somewhat rugose horns form decidedly handsome trophies. Height at shoulder about $34\frac{1}{2}$ inches.

Distribution.—From Sumatra, Yunnan, and Moupin in Tibet to the Eastern Himalaya, occurring throughout the Assam Hills, Burma, Siam, and the elevated tracts of the Malay Peninsula.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
$10\frac{1}{8}$	5	$1\frac{3}{4}$	Burma . . .	O. F. Wheeler-Cuffe.
$-9\frac{1}{2}$	5	$5\frac{1}{2}$	Arakan Hills . . .	A. O. Hume.
$9\frac{1}{2}$	5	4	Burma . . .	The late C. W. A. Bruce.
9	5	2	Sumatra . . .	British Museum (Hume Collection).
-9	5	5	Burma . . .	Major G. H. Evans.
-9	...	...	Arakan Hills . . .	Indian Museum.
$-8\frac{9}{10}$	$5\frac{1}{2}$	$4\frac{1}{4}$	Manipur . . .	Major H. S. Wood.
$8\frac{3}{4}$	$5\frac{1}{2}$	$4\frac{3}{4}$	Muleyit . . .	A. O. Hume.
$-8\frac{3}{4}$	$4\frac{3}{4}$	$2\frac{1}{2}$	Perak . . .	Perak Museum.
$8\frac{1}{4}$	5	$3\frac{1}{2}$	Upper Burma . . .	Hon. Walter Rothschild.
$-8\frac{1}{2}$	$5\frac{1}{2}$	$5\frac{1}{4}$	Perak . . .	Perak Museum.
8	$5\frac{1}{2}$	$4\frac{1}{4}$	Do. . .	G. H. Cater.
♀ -7	...	...	Arakan Hills . . .	W. Thom.

- Owner's measurements.



Skull and Horns of Himalayan Serow (Mr. Hume's record specimen).

HIMALAYAN SEROW (*Nemorhædus sumatrensis bubalinus*).

<i>Serow, serowa</i> of Gurhwal and many parts of the Himalaya.	<i>Aimu</i> , Kumaon.
<i>Ramu-Halj</i> , Sálábhír.	<i>Jungal</i> , Kangra.
	<i>Goa</i> , Chamba.
	<i>Yamu</i> , Kulu.

Although commonly regarded as a distinct species, there can be little hesitation in classing this animal as a local race of the last, more especially as intermediate forms appear to occur in the neighbourhood of Darjiling. The chief distinction is the less decidedly rufous tint

of the hair of the western race. Height at shoulder from 33 to 37 or 38 inches; weight from 120 to 190 lbs.

Distribution.—Throughout the Himalaya from Kashmir to the Mishmi Hills, at elevations of from 6000 to 12,000 feet; also recorded from Yunnan. Another large serow (*N. swettenhami*) inhabits the mountains of the Malay Peninsula; and a third (*N. argyrochaetes*) those of N.W. China.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
12 $\frac{1}{4}$	6 $\frac{1}{2}$	2 $\frac{3}{4}$	Gurhwal . . .	A. O. Hume. (See illustration.)
12	...	...	Himalaya . . .	Lieut.-Col. A. E. Ward.
11	...	...	?	Lieut.-Col. R. H. Rattray.
10 $\frac{7}{8}$	5	4	?	V. A. Mackinnon.
10 $\frac{1}{2}$	5 $\frac{3}{8}$	3 $\frac{1}{2}$	?	The late Hon. Charles Ellis.
10 $\frac{1}{2}$	5 $\frac{5}{8}$	3 $\frac{1}{2}$	Gurhwal . . .	A. P. Davis.
10 $\frac{1}{8}$	...	...	North of Musuri . . .	Capt. Harry V. Brooke.
10	5 $\frac{3}{8}$	5 $\frac{1}{2}$	Mishmi Hills . . .	A. O. Hume.
9 $\frac{7}{8}$	5 $\frac{5}{8}$	4 $\frac{1}{2}$	?	Sir Victor Brooke's Collection.
9 $\frac{3}{4}$	5 $\frac{1}{2}$	6	Pir Panjal . . .	British Museum (R. Lydekker).
9 $\frac{5}{8}$	5 $\frac{1}{4}$	5 $\frac{3}{4}$	?	Col. C. M. Haggard.
9 $\frac{1}{2}$	5 $\frac{1}{2}$	4	?	K. C. Zarzhetsky.
9 $\frac{1}{2}$	5 $\frac{5}{8}$	4 $\frac{3}{4}$	Kashmir . . .	St. George Littledale.
9 $\frac{1}{2}$	5 $\frac{1}{4}$	3	?	Major G. S. Rodon.
9 $\frac{1}{2}$	4 $\frac{7}{8}$	3 $\frac{1}{4}$	Nepal . . .	British Museum (B. H. Hodgson).
9 $\frac{1}{2}$	5 $\frac{5}{8}$	3 $\frac{3}{4}$	?	Sir Edmund G. Loder, Bart.
♀ 9 $\frac{3}{8}$	5 $\frac{1}{8}$	4	Sind Valley . . .	P. H. G. Powell-Cotton.
9 $\frac{5}{8}$	5 $\frac{1}{4}$	3 $\frac{3}{4}$	Chamba . . .	Major C. W. Tribe.
♀ 9 $\frac{1}{4}$	4 $\frac{3}{4}$	3 $\frac{1}{2}$	Do. . . .	Do.
9 $\frac{1}{4}$	4 $\frac{1}{2}$	3	Do. . . .	Capt. the Hon. A. Hamilton-Russell.
9	4 $\frac{1}{2}$	2 $\frac{1}{2}$	North of Musuri . . .	Capt. B. R. M. Glossop.

- Owner's measurements.



A Grey Himalayan Goral (*Urotragus bedfordi*) formerly living in Woburn Park.
Photographed by the Duchess of Bedford.



Skull and Horns of Takin. From Col. Biddulph's specimen.

The TAKIN (*Budorcas taxicolor*).

Not improbably also akin to the musk-ox, which should perhaps be placed near by, this strange ruminant is almost certainly a relative of the serows. It is heavily built, with stout limbs, large lateral hoofs, a short tail, a convex profile, and an almost completely hairy muzzle. But its most remarkable feature is to be found in the horns, which are large, massive, and bent somewhat after the fashion of those of a gnu, curving at first outwards and somewhat downwards, and then bending 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 the female being somewhat smaller than those of the males.

Distribution.—Typically the Mishmi Hills on the northern frontier of Assam, but represented by a local race in Tibet and North-Western China. Although the takin lives within sight of Indian territory, specimens are very rare in collections.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-25	13	11½	Mishmi Hills . . .	F. J. Needham.
-24¼	...	...	Do. . . .	Col. J. Biddulph. (See illustration.)
-24¼	12¾	12¾	Do. . . .	Indian Museum.
22½	11¼	12	Do. . . .	Hon. Walter Rothschild.
22¾	10¾	14¾	Assam	British Museum.
22¾	11	12	Mishmi Hills . . .	Duke of Bedford.
-22	12¾	12¼	Do. . . .	Bombay Natural History Society.
-21½	12¼	13	Do. . . .	Major A. Wilson.
21	12	13½	Do. . . .	A. J. Walter.
20¾	11¾	11¾	Assam	British Museum (Hume Collection).
20¾	11¾	12½	Mishmi Hills . . .	A. O. Hume.
20½	12	10	?	Duke of Bedford.
19¾	11	11½	Mishmi Hills . . .	Col. J. Biddulph.
19¾	11	15	?	Sir Edmund G. Loder, Bart.

KANSU TAKIN (*Budorcas taxicolor sinensis*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
20½	11½	11¼	Kansu, China . . .	Hon. Walter Rothschild.

TIBETAN TAKIN (*Budorcas taxicolor tibetanus*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
19¾	12¼	12½	Tibet	Hon. Walter Rothschild.
-19¾	11½	13¾	Do. . . .	Paris Museum (Père A. David).

- Owner's measurements.



Head of Rocky Mountain Goat.

ROCKY MOUNTAIN GOAT (*Oreamnus montanus*).

(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 just short of 3 feet; weight about 300 lbs. Several local races have been named.

Distribution.—North America; throughout the Rocky Mountains, from the Salmon River, Idaho, as far north as lat. $63^{\circ} 30'$.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-11½	...	...	British Columbia	Clive Phillippis-Wolley.
♀-11½	4¾	6¼	Montana . . .	G. L. Harrison.
-11	...	...	Kutenay, B.C. . .	J. T. Fannin (measured by the late).
-10½	5¾	...	Montana . . .	Walter James.
10¼	6	6¾	Do. . . .	D. Davies.
10¼	5¼	5½	British Columbia	R. Rankin.
-10½	6½	...	Simikameen River, British Columbia	Arthur Pearse.
10½	5	6½	?	E. N. Buxton.
10½	5¾	7½	British Columbia	M. Egerton.
♀-10½	4¾	...	Do. . . .	Capt. A. Egerton.
10	5¾	6¾	Do. . . .	J. V. Colby.
-9¾	5¾	6½	Do. . . .	Dr. Albert von Stephani.
-9¾	5	...	Montana . . .	President Roosevelt.
9¾	5½	6¼	N.W. Territories	S. Ratcliff.
9¾	5¼	6	Do. . . .	H. R. H. le Duc d'Orléans.
♀9¾	4	6¾	Montana . . .	D. Davies.
9½	5¼	6½	Do. . . .	Sir Edmund G. Loder, Bart.
9½	4¾	6¾	British Columbia	P. N. Graham.
9½	4¾	8¾	Do. . . .	R. M. Spence.
9½	5½	6¼	Alaska . . .	St. George Littledale.
9½	4½	...	North America	J. D. Cobbold.
♀9½	4¼	5½	British Columbia	P. B. Vander-Byl.
9½	5¼	6¾	East Kutenay, B.C. .	A. E. Butter.
9½	6	5	British Columbia	W. Neilson.

- Owner's measurements.



Head of Himalayan Tahr.

HIMALAYAN TAHR (*Hemitragus jemlaicus*).

The three species of tahr 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 Himalayan 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.	Circumference.	Tip to Tip.	Locality.	Owner.
-15½	8¼	8¼	?	V. A. Mackinnon.
15	9¾	5¾	Chamba	Col. C. M. Haggard.
-14½	8¾	5	Do.	Capt. J. T. C. Murray.
-14¾	9¼	7½	Garhwal	Officers' Mess, 3rd Goorka Rifles.
14½	8¾	...	Chamba	J. S. Rivett-Carnac.
14¼	9	4¾	Kishtwar	Capt. W. F. Corbett.
14¼	8¾	4¾	?	A. Cadell.
14½	8¾	6¾	Kumaon	A. O. Hume.
-14½	9	6	Garhwal	S. H. Charrington.
14	8¾	5¾	?	R. Heber-Percy.
14	...	...	?	Major R. L. Tottenham.
-14	...	...	?	Lieut.-Col. A. E. Ward.
13¾	9	8¾	Chamba	Hugo de Burgh.
13¾	...	...	Do.	Col. R. J. Heber-Percy.
13¾	9	11¼	?	British Museum (Hume Collection).
13¾	8¼	7¾	?	I. Morse.
13½	9	9¼	?	Major G. S. Rodon.
13½	8½	7½	Kashmir	J. H. Phelps.
13½	8½	7¼	Chamba	Col. H. D. Olivier.
-13½	...	...	Do.	Capt. F. W. H. Walshe.
-13½	10	...	?	Lieut.-Col. C. F. Blane.
13¾	9	8¾	Chamba	A. W. Robertson Glasgow.
13¾	9¾	5¾	?	Hon. Walter Rothschild.

- Owner's measurements.



Skull and Horns of Arabian Tahr. From O. Thomas, *Proc. Zool. Soc.* 1894.

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 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.	Locality.	Owner.
-11 $\frac{5}{8}$	Oman Mountains	Col. A. S. G. Jayaker.

- Owner's measurements.



Head of Nilgiri Tahr.

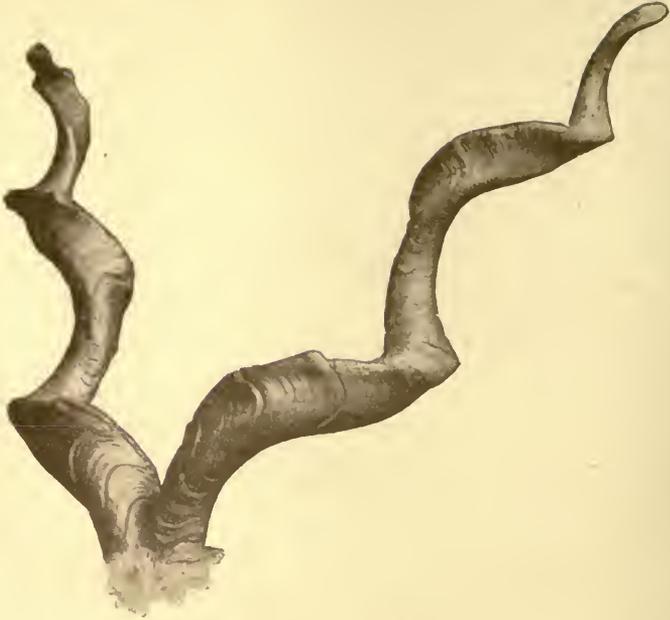
NILGIRI TAHR or "IBEX" (*Hemitragus hylocrius*).

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.
-17½	9⅞	6	Nilgiris	Rhodes Morgan.
-17	9¾	...	Do.	Measured by Gen. MacMaster, 1869.
16¾	8¾	5⅝	?	A. O. Hume.
-16½	...	...	Nilgiris	St. George Littledale.
16½	8½	5	Do.	Col. R. Hoare.
16½	8¼	6	Do.	S. G. Bird.
-16	9'5	5	Do.	Rhodes Morgan.
15⅞	7¾	5⅜	Do.	J. H. Whitehouse.
15½	8⅝	7⅞	Do.	Sir Edmund G. Loder, Bart.
15⅜	8¾	6¾	Do.	Martyn Kennard.
15⅜	8¼	6	Do.	St. George Littledale.
15½	8⅝	4⅜	Do.	Do.
15	8¼	5⅞	Do.	Sir H. D. Tichborne, Bart.
-15	8½	5	Do.	Sir. W. Gordon Cumming, Bart.
-15	7⅝	4	Do.	M. C. Koechlin.
14¾	8½	5⅝	Do.	Capt. C. S. Timins.
14¾	8¼	7¼	Anamalai Hills	M. Loam.
14½	8¾	6¼	Nilgiris	British Museum.
14½	8⅝	5⅞	Do.	Sir Victor Brooke's Collection.
14⅜	8	4⅝	Anamalai Hills	Capt. T. W. Greenfield.
♀ 12⅜	5½	2⅜	Do.	M. Loam.
♀ 11¾	5¾	4⅞	Do.	Hon. Walter Rothschild.
♀ 11'25	5'25	4	Do.	A. O. Hume.

- Owner's measurements.



Horns of Pir Panjal Markhor.
Shot by the late Major J. C. Shirres, in the Kajrag, April 22, 1884.

The MARKHOR (*Capra falconeri*).

The markhor, of which there are several local races, probably passing more or less completely into one another, introduces us to the true goats (*Capra*). The males differ from the tahr by their much larger horns, the length of which greatly exceeds that of the head, and likewise by the presence of a more or less 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 being also elongated. Moreover, the horns form a spiral, quite unlike the scimitar-shape characteristic of the ibex and common goat.

Distribution.—The Western Himalaya, Gilgit, Afghanistan, etc.

A and *B.*—ASTOR and PIR PANJAL MARKHOR
(*Capra falconeri typica* and *C. falconeri 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. The Gilgit markhor may be a distinct race (see p. 362).



Horns of Astor Markhor. From Mr. A. O. Hume's specimen.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
¹ -63	..	...	...	Pir Panjal . . .	Major-General A. A. A. Kinloch.
-60	...	...	...	Astor . . .	Lucknow Museum.
-59	...	12	36	Kajnag . . .	The late Major J. C. Shirres. (See illustration on p. 358.)
59	36	$10\frac{3}{4}$	...	Do. . . .	Lieut.-Col. S. D. Turnbull.
-58 $\frac{1}{2}$	40 $\frac{1}{2}$	10	38 $\frac{1}{2}$	Gilgit . . .	Marquis of Lansdowne.
57 $\frac{1}{2}$	40	...	47 $\frac{1}{2}$	Drosh . . .	B. C. Graham.

- Owner's measurements.

¹ Picked up either on the Pir Panjal or Kajnag Ranges by the late Col. Cuppage, and measured by General Kinloch.

RECORDS OF BIG GAME

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
-56½	38	11	38	Kashmir . . .	J. Benet-Stanford.
-56	36⅞	13⅞	34⅞	Do. . . .	Viscount Edmond de Poncins.
56	51½	...	...	Near Bunji . . .	Capt. T. S. Johnson.
-55½	...	9½	31½	Chilas	Queen's Own Corps of Guides.
55	44½	11	47	?	East India Club.
-55	38½	11	41½	Gilgit	Officers' Mess, 3rd Goorka Rifles.
55	...	...	...	Astor	Otho Shaw.
54½	...	10½	26½	?	A. O. Hunne.
54	...	10⅞	33⅞	Astor	Martyn Kennard.
53⅞	38½	12½	40½	Do. . . .	Major J. Manners Smith.
53⅞	37⅞	10	35	Chilas	Capt. C. A. Smith.
153½	42½	11½	52 about	Astor	Sir Victor Brooke's Collection.
-53	...	9⅞	26	?	Lieut.-Col. A. E. Ward.
53	38⅞	9⅞	35½	Gilgit	Hon. Walter Rothschild.
53	35⅞	11⅞	34½	Pir Panjal . . .	Capt. F. W. H. Walshe.
53	34½	11	32	Astor	Lieut.-Col. the Hon. C. Willoughby.
52½	39	11	39	Gilgit	Col. G. D. F. Sullivan.
51⅞	36½	11⅞	37½	Do. . . .	Major B. E. M. Gurdon.
51⅞	37⅞	10	33	Pir Panjal . . .	Sir Edmund G. Loder, Bart.
-51⅞	...	12	44½	Haramosh . . .	P. H. G. Powell-Cotton.
51	36½	11	34½	Kajnag	Col. J. W. A. Morgan.
50½	35⅞	10½	45½	Haramosh . . .	B. H. Shaw-Stewart.
50	38	11⅞	36	Astor	Sir Edmund G. Loder, Bart.
50	36½	12	36	Chilas	Capt. W. Hayes-Sadler.
-50	29	11½	31	Haramosh . . .	E. L. Phelps.
-49⅞	...	...	38	Chilas	Capt. P. Hambro.
-49⅞	...	11½	40	Astor	H. Lennard.
-49½	32½	10½	43	Gilgit	Col. J. Biddulph.
49½	36	11½	32	Chilas	Capt. L. W. S. Oldham.

- Owner's measurements.

1 Shot by Capt. Harry V. Brooke.



Skull and Horns of Pir Panjal Markhor. From Mr. Hume's specimen.



Horns of Gilgit (?) Markhor.
From a specimen in the Collection of Mr. Hume.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
49½	36½	11½	31	?	Capt. A. Young.
49	...	11	35	Haramosh . . .	Queen's Own Corps of Guides.
49	35	14	44	Astor . . .	A. O. Hume. (See illustration on page 359.)
49	34½	10½	37	?	Major E. B. Cook.
48¾	35	10¼	30	?	Lieut.-Col. H. Appleton.
48¾	34	10¼	30½	?	H. A. G. Chamier.
48½	35	13	41	Chilas . . .	J. D. Cobbold.

- Owner's measurements.

Length.		Circumference.	Tip to Tip.	Locality.	Owner.
On outside curve.	Straight line.				
48½	...	11½	45	Astor . . .	Capt. M. Murphy.
48½	31½	11¾	26½	Baltistan . . .	H. Z. Darrah.
48¼	35	11	29½	?	Hon. A. C. Murray.
48	34	10¾	36	Astor . . .	H. R. H. the Prince of Wales.
48	37¾	12¾	29	Pir Panjal . . .	A. O. Hume. (See illustration on page 361.)
-48	31½	12	38	Haramosh . . .	J. V. Phelps.
48	34	9¼	39	?	A. Marshall.
47½	35¼	11	44	?	Capt. J. S. Bogle.
47½	33¾	12	40	Chilas . . .	P. B. Vander-Byl.
47¼	37	12½	38	Do. . . .	Capt. L. W. S. Oldham.

- Owner's measurements.



Skull and Horns of (1) Cabul, and (2) Suleman Markhor. From Mr. Hume's specimens.



Head of Suleman Markhor. From Mr. Grant's Waziristan specimen.

C. and *D.*—**CABUL and SULEMAN MARKHOR**
 (*Capra falconeri megaceros* and *C. falconeri 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. In some Chitral heads the horns approach the Pir Panjal type (like the figure on page 364).

On outside curve.	Length. Straight line.	Circumference.	Tip to Tip.	Locality.	Owner.
-56	41	11½	32	Chitral	C. Rose.
-51¼	...	...	36	Do.	Major G. A. Leslie.
50	36	10	33	Do.	R. H. Macdonald.
-49	39¼	11⅝	...	Do.	C. R. Johnson.
...	48½	7¾	Odd horn	?	British Museum.
Suleman race					
47¼	34	10½	39	Chitral	H. Gough.
...	39¾	10¼	24¼	Afghanistan	British Museum (Col. Grant).
...	39¼	12¼	38	Range 25 miles N.W. of Wana	A. J. Grant. (See illustration, page 365.)
...	38½	10½	23⅞	Afghanistan	H.R.H. the Duke of Saxe-Coburg and Gotha.
...	37	10	32	Kurram Valley	Major G. Roos Keppel.
...	35¾	9¾	15	?	Capt. E. Kirkpatrick.
...	-35	...	...	Afghanistan	Lieut.-Col. A. E. Ward.
...	34¾	10¾	28	Baluchistan	The late Capt. E. W. Codrington.
...	34	11	23	?	G. F. Giffard.
...	33	9¼	19¾	Afghanistan	Sir Edmund G. Loder, Bart.
...	32½	10	22½	Bunnu	Queen's Own Corps of Guides.
...	32¼	9¾	28	?	A. O. Hume.
...	32	10	27½	Cabul	A. O. Hume. (See illustration on page 364.)
...	31½	9½	27	Suleman Range	Hon. Walter Rothschild.
...	30¾	10	25	Baluchistan	Col. J. Biddulph.
...	30¾	8¾	21½	?	Sir Victor Brooke's Collection.
...	29¾	8¼	23¾	Baluchistan	Lieut.-Col. R. H. Rattray.
...	29¼	10	19	Khyber Pass	Capt. A. L. Bickford.
...	29	10½	16	?	W. T. Hornaday.
...	-28	...	...	?	Otho Shaw.
...	27	9	18	Sheik Budin	Col. J. Biddulph.
...	26¾	11¼	22¼	Suleman Range	A. O. Hume. (See illustration on page 364.)
...	26¼	...	18	Bunnu	Major H. W. Codrington.
...	26	8¾	18½	Sheik Budin	Gen. Sir H. Collett.
...	25½	10	21	Quetta	B. H. Shaw-Stewart.

- Owner's measurements.



Head of Thian 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 Thian 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 Sahan range, the Irtish race (*C. s. altaica*), the Thian Shan race (*C. s. almasyi*), the Gilgit race (*C. s. pedri*), the Katutay ibex (*C. s. lydekkeri*), the Baltistan ibex (*C. s. wardi*), and the Himalayan ibex (*C. s. sacin*), from the mountains to the northward of Kashmir.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
57 $\frac{3}{8}$	11	30	Thian Shan . . .	A. Bayley-Worthington.
56 $\frac{3}{4}$	11 $\frac{1}{2}$	36 $\frac{1}{2}$	Do. . . .	Lord Elphinstone.
56 $\frac{1}{4}$	11	40	Do. . . .	R. F. Glyn.
-56	...	...	Tagdumbash . . .	Lieut.-Col. A. E. Ward.
55	11 $\frac{1}{2}$	35	Gilgit	Major B. E. M. Gurdon.
54 $\frac{3}{4}$	11 $\frac{1}{4}$	29	Thian Shan . . .	P. B. Vander-Byl.
¹ -54 $\frac{3}{8}$	10 $\frac{1}{4}$	25	Gilgit	Queen's Own Corps of Guides.
² 54	10 $\frac{3}{4}$	45	Thian Shan . . .	H.M. the King.
54	11 $\frac{5}{8}$	27	Do. . . .	Lord Elphinstone.
53 $\frac{3}{4}$	11 $\frac{3}{4}$	34	China	Capt. P. Hambro.
53 $\frac{1}{4}$	11 $\frac{1}{2}$	42	Thian Shan . . .	R. Hayne.
53 $\frac{1}{4}$	10 $\frac{1}{2}$	20 $\frac{1}{4}$	Gilgit	Col. J. Biddulph.
53	12	35 $\frac{1}{2}$	Thian Shan . . .	St. George Littledale.
52 $\frac{1}{2}$	12 $\frac{1}{4}$	26	Do. . . .	P. Church.
-52	10	...	Baltistan	H.H. the Maharaja of Travancore.
-51 $\frac{1}{2}$	...	...	Kashmir	Martyn Kennard.
51 $\frac{1}{4}$	9 $\frac{1}{2}$	34 $\frac{1}{2}$	?	Major J. Manners Smith.
51	9 $\frac{1}{8}$	28 $\frac{1}{2}$	?	Sir Victor Brooke's Collection.
50 $\frac{3}{4}$	11 $\frac{1}{2}$	34 $\frac{1}{2}$	Thian Shan . . .	P. B. Vander-Byl.
50 $\frac{5}{8}$	11 $\frac{1}{4}$	35 $\frac{1}{2}$	Do. . . .	British Museum (St. George Littledale).
50	11	30 $\frac{1}{2}$	?	Marquis of Lansdowne.
-50	10 $\frac{1}{4}$	21	?	Capt. H. Newton.
50	12	19 $\frac{3}{4}$	Thian Shan . . .	J. V. Phelps.
49 $\frac{3}{4}$	10 $\frac{3}{4}$	28 $\frac{1}{2}$	Do. . . .	Lord Osborne Beauclerk.
49 $\frac{3}{4}$	10 $\frac{5}{8}$	25 $\frac{1}{4}$	?	Sir Edmund G. Loder, Bart.
49 $\frac{3}{4}$	10	21 $\frac{1}{2}$	Chitral	British Museum (Major B. E. M. Gurdon).
49	10 $\frac{1}{4}$	9 $\frac{1}{2}$	Skardo	Major George Douglas.
48 $\frac{1}{2}$	9 $\frac{5}{8}$	30 $\frac{1}{2}$	Nubra, north of Leh .	A. O. Hume.
48 $\frac{1}{2}$	9	22 $\frac{3}{4}$	Kashmir	Col. G. D. F. Sulivan.
48 $\frac{1}{2}$	10 $\frac{1}{2}$	28	Do. . . .	S. H. Charrington.

- Owner's measurements.

¹ Picked up by Maj.-Gen. R. E. Hutchinson.² Shot by St. George Littledale.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
48 $\frac{1}{4}$	10 $\frac{1}{4}$	29 $\frac{3}{4}$	Kashmir . . .	R. H. R. Brocklebank.
48	10 $\frac{1}{2}$	24 $\frac{1}{2}$	Tilel Valley, Kashmir	J. Campbell of Kilberry.
47	11 $\frac{3}{4}$	...	?	Carl Hagenbeck.
47	10 $\frac{1}{4}$	35	Baltistan . . .	Lady Constance Stuart Richardson.
47	10	...	?	Major J. Manners Smith.
46 $\frac{3}{4}$	9 $\frac{1}{4}$	...	Kashmir . . .	Major E. B. Cook.
46 $\frac{3}{4}$	9 $\frac{3}{4}$	22 $\frac{1}{2}$	Do. . . .	Lieut.-Col. W. Goring.
46 $\frac{1}{2}$	12	20 $\frac{1}{2}$	Altai . . .	Hon. Walter Rothschild.
46 $\frac{1}{2}$	10	25 $\frac{1}{2}$	Kashmir . . .	G. A. Lloyd.
46 $\frac{1}{2}$	...	...	?	Indian Museum.
46 $\frac{1}{2}$	10 $\frac{1}{2}$	23 $\frac{1}{2}$	?	Capt. J. S. Bogle.
46	9 $\frac{3}{4}$	25	?	Sir Victor Brooke's Collection.
46	10 $\frac{1}{4}$	21 $\frac{3}{8}$	?	Capt. C. E. Palmer.
45 $\frac{1}{2}$	9 $\frac{1}{2}$	33 $\frac{3}{4}$	Pamir . . .	Capt. J. B. Mackintosh.
45 $\frac{1}{2}$	9 $\frac{3}{4}$	19 $\frac{1}{2}$	Do. . . .	Capt. R. L. Kennion.
45 $\frac{1}{2}$	9 $\frac{3}{4}$	19 $\frac{1}{2}$	Baltistan . . .	T. R. Ubsdell.
45 $\frac{1}{2}$	10 $\frac{1}{2}$	27	Do. . . .	H.R.H. the Prince of Wales.
45 $\frac{1}{2}$	10	18 $\frac{1}{2}$	?	A. Courage.
45 $\frac{1}{4}$	9 $\frac{5}{8}$	24 $\frac{3}{4}$	Baltistan . . .	Queen's Own Corps of Guides.
45	10 $\frac{1}{2}$	29	Ladak . . .	P. H. G. Powell-Cotton.
45	10	20 $\frac{1}{4}$	Gilgit . . .	Col. J. Biddulph.
45	9	12 $\frac{1}{2}$	Baltistan . . .	Major C. B. Vandeleur.

- Owner's measurements.



IBEX Head, in the possession of H.M. the King of Italy.

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 40 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.
¹ -44 $\frac{5}{8}$	10 $\frac{1}{4}$	...	Valley of Aosta . . .	H.M. the King of Italy.
-39 $\frac{3}{4}$	10 $\frac{3}{8}$	40 $\frac{1}{4}$	?	Imperial Museum, Vienna.
-38 $\frac{5}{8}$	...	...	Valley of Aosta . . .	H.M. the King of Italy.
-37 $\frac{3}{4}$	...	...	Do. . . .	Do.
-35 $\frac{3}{8}$	9	26 $\frac{3}{4}$	Do. . . .	Do.
34 $\frac{1}{2}$	9 $\frac{3}{4}$	...	Styria	Sir Edmund G. Loder, Bart.
-33 $\frac{1}{8}$	9	39 $\frac{3}{8}$	Valley of Aosta . . .	Shot by H.M. the late Victor Emmanuel. Dublin Museum.
-30	9	21	?	Dublin Museum.
29	8 $\frac{3}{4}$	10 $\frac{1}{4}$	Valley of Aosta . . .	Rev. J. M. Gordon.
28 $\frac{3}{4}$	8 $\frac{3}{4}$	17 $\frac{1}{2}$	?	J. Hamilton Leigh.
-28 $\frac{1}{4}$	9 $\frac{3}{8}$	18	Valley of Aosta . . .	C. H. Wilczek.
28	9 $\frac{1}{4}$	17 $\frac{1}{4}$	Do. . . .	Hon. Walter Rothschild.
27 $\frac{1}{2}$	9 $\frac{1}{4}$	11 $\frac{1}{2}$	Do. . . .	Royal Scottish Museum.
26 $\frac{3}{4}$	8 $\frac{3}{8}$	22 $\frac{1}{8}$	Do. . . .	British Museum.

- Owner's measurements.

¹ Height at shoulder, 33 $\frac{3}{8}$; weight, 170 lbs.

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. 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 $\frac{5}{8}$	...	12 $\frac{1}{2}$	Abyssinia	P. H. G. Powell-Cotton.
¹ 43	10 $\frac{1}{2}$	23	Do.	Lady Meux.
¹ 42 $\frac{3}{4}$	10 $\frac{1}{4}$	18 $\frac{3}{4}$	Do.	H.M. The Queen.
41 $\frac{3}{8}$	11	16 $\frac{3}{4}$	Do.	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.	P. H. G. Powell-Cotton.

¹ Presented by the late Ras Makunnan, 1902.



Skulls and Horns of Male and Female Abyssinian Ibex. Shot by P. H. G. Powell-Cotton.



Head of the Sinaitic Race of Nubian Ibex.

The BEDEN or NUBIAN IBEX (*Capra nubiana*).

This species may be easily distinguished from both the Asiatic and the Alpine species 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*.

The following specimens belong to the typical African form:—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-51	8 $\frac{5}{8}$	39 $\frac{1}{2}$	Upper Egypt . . .	Prince Henry of Liechtenstein.
46 $\frac{3}{8}$	8	...	North Africa . . .	British Museum.
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 $\frac{1}{4}$	13 $\frac{1}{4}$	Do. . . .	Julius Jeppe.
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.
38 $\frac{5}{8}$	7 $\frac{1}{2}$	12 $\frac{1}{2}$	Upper Egypt . . .	Sir Edmund G. Loder, Bart.
-38 $\frac{3}{4}$	...	21	North Africa . . .	J. Ff. Darling.
38 $\frac{1}{4}$	8	21	Suakin	Major A. King.
37 $\frac{1}{2}$	7 $\frac{5}{8}$	9 $\frac{1}{4}$	North Africa . . .	Prince Colloredo Mannsfeld.
37	7	17 $\frac{3}{4}$	Do. . . .	Capt. N. M. Smyth.
36 $\frac{3}{4}$	6 $\frac{3}{4}$	10 $\frac{3}{4}$	Do. . . .	Major C. S. Cumberland.
36	7 $\frac{1}{2}$	17 $\frac{1}{2}$	Suakin	Prince Colloredo Mannsfeld.
-35 $\frac{1}{4}$	6 $\frac{7}{8}$	16 $\frac{3}{4}$	Egypt	Dr. Albert von Stephani.
35 $\frac{1}{8}$	7 $\frac{1}{8}$	12	Suakin	W. P. Gore-Graham.

The following specimens are Asiatic:—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
50	9	...	Southern Arabia . . .	Capt. J. T. Brinkley.
-49 $\frac{1}{8}$	8 $\frac{1}{2}$	12	Do. . . .	Major W. Merewether.
42	7 $\frac{1}{4}$	...	Arabia	East India Club.
41 $\frac{1}{2}$	8	16 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
-41 $\frac{1}{20}$	...	...	Hadramaut, S.E. Arabia . . .	J. Menges.
-39 $\frac{3}{4}$	9 $\frac{7}{8}$	...	Markat	Do.
39 $\frac{1}{2}$	8 $\frac{7}{8}$	19 $\frac{1}{2}$	South-East Arabia . . .	Hon. Walter Rothschild.
35 $\frac{1}{2}$	6 $\frac{1}{2}$	12	Sinaitic Peninsula . . .	W. E. Pease.
35 $\frac{1}{4}$	7	15 $\frac{3}{4}$	Do. . . .	J. D. Cobbold.
♀ 10 $\frac{3}{8}$	3 $\frac{1}{4}$	2 $\frac{1}{2}$	Do. . . .	W. E. Pease.

- Owner's measurements.



Skull and Horns of Sind Wild Goat. From Mr. Hume's specimen.

The PASANG or WILD GOAT (*Capra hircus*).

The horns of the Persian wild goat (*C. hircus ægagrus*), which appears to be 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 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 Persian race. It is distinguished mainly by a slight difference in the form of the horns. A third race (*C. h. raddi*) inhabits the Caucasus. Other races inhabit 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 Persia to the confines of Baluchistan and Sind. Native Persian name, *pasang* (rock-footed).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
55½	...	24	Persia . . .	Carl Hagenbeck.
-53	10	46	Asia Minor . . .	B. Hodder.
52¾	7⅞	8¾	Sind . . .	A. O. Hume. (Shot by Col. F. Marston.) See illustration.
51¼	9	7	Russian Turkestan . . .	Prince P. Demidoff.
-50¾	9¼	14	Taurus Range . . .	Count C. Deym.
48¼	8¾	13¾	Caucasus . . .	British Museum.
-48	8	20½	Sind . . .	J. D. Inverarity.
-47½	9½	...	Cilician Taurus . . .	C. G. Danford.
46¾	7⅞	14	Sind . . .	Sir Edmund G. Loder, Bart.
46½	8⅞	18⅞	Asia Minor . . .	F. C. Selous.
46¼	9½	14½	Do. . .	T. Bowen Rees.
46	7⅞	11	Sind . . .	Major C. S. Cumberland.
-45¾	8¾	9¾	Daghestan . . .	E. N. Buxton.
45½	8¾	5	Do. . .	R. Graham.
-45¼	9¼	21	Damascus . . .	Dr. Albert von Stephani.
45¼	8	11¾	Sind . . .	Col. J. Biddulph.
44½	8⅞	21¾	Caucasus . . .	British Museum.
43½	10	12½	Persia . . .	Hon. W. Erskine.
43	9	15¾	Taurus Range . . .	Sir Edmund G. Loder, Bart.
43	8⅞	22¾	?	J. Carr Saunders.
42½	9	10	Russian Turkestan . . .	St. George Littledale.
42½	9¾	19¾	?	C. F. A. Dellschaft.
42	8	6¼	Baluchistan . . .	Sir Robert Harvey, Bart.
41¾	8¾	9¼	Russian Turkestan . . .	Prince E. Demidoff.
-40½	9⅞	...	Asia Minor . . .	Imperial Museum, Vienna.
39½	7¾	14¼	Baluchistan . . .	Capt. T. W. Greenfield.
38¼	8	31¾	Crete . . .	Lieut.-Gen. Sir Arthur Paget.

- Owner's measurements.

DOMESTICATED GOAT.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
52½	10½	40½	Daghestan . . .	Sir Edmund G. Loder, Bart.
44¼	6	29¼	Angora . . .	Do.
40½	9¾	...	Daghestan . . .	Do.
37½	7¼	32¾	Scotland . . .	Col. W. Hall Walker.
-37	7½	35	Meoble, N. B. . .	Walter Jones.
35¾	7¾	38¼	?	B. de Bertodano.
34¼	7½	38½	Scotland . . .	Duke of Bedford.
34	8½	32½	Do. . . .	F. C. Selous.
33½	8	26½	Meoble, N. B. . .	Hon. O. C. Molyneux.

- Owner's measurements.



Head of Spanish Ibex. Mr. Abel Chapman's 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 tur, 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 Persian wild goat than either of the Caucasian tur. 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, Andalusia, and Portugal. The typical form of the species inhabits the Pyrenees; those inhabiting the more southern parts may be distinguished as a separate race (*C. pyrenaica hispanica*).

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
31	8 $\frac{3}{4}$	...	Pyrenees . . .	Sir Victor Brooke's Collection.
-30 $\frac{1}{4}$	9 $\frac{1}{2}$	23 $\frac{1}{2}$	Central Spain . . .	Abel Chapman and W. J. Buck.
-29 $\frac{3}{4}$	8 $\frac{1}{4}$	23 $\frac{1}{4}$	Almeira . . .	H. Brinsley Brooke.
29 $\frac{1}{4}$	9 $\frac{1}{2}$	23 $\frac{1}{4}$	Sierra Nevada . . .	Abel Chapman.
-28 $\frac{3}{4}$	10 $\frac{1}{2}$	28 $\frac{5}{8}$	?	Imperial Museum, Vienna.
28	9 $\frac{3}{8}$	23 $\frac{3}{8}$	Spain . . .	British Museum.
27 $\frac{3}{4}$	9	25	Do. . . .	Sir Edmund G. Loder, Bart.
25 $\frac{5}{8}$	8 $\frac{1}{2}$	16 $\frac{5}{8}$	Do. . . .	Hon. Walter Rothschild.
-25 $\frac{1}{2}$	9 $\frac{1}{2}$	13	Do. . . .	W. J. Buck.
24 $\frac{1}{2}$	10	14	Val d'Arras . . .	E. N. Buxton.
23 $\frac{3}{8}$	8	16	Southern Spain . . .	Pablo Larios.
22 $\frac{3}{4}$	9 $\frac{1}{2}$	18 $\frac{3}{4}$	Val d'Arras . . .	E. N. Buxton.
22	7 $\frac{3}{4}$	14	Spain . . .	Pablo Larios.
-21 $\frac{1}{2}$	7 $\frac{3}{4}$	..	Do. . . .	Prince E. Demidoff.
20	8 $\frac{1}{2}$	15	Sierra Blanca . . .	A. Larios.
♀ -10 $\frac{3}{4}$	5 $\frac{5}{8}$	7 $\frac{1}{2}$	Val d'Arras . . .	A. E. Leatham.
♀ 9 $\frac{1}{2}$	5 $\frac{3}{8}$	6 $\frac{1}{4}$	Do. . . .	E. N. Buxton.

- Owner's measurements.



Skull and Horns of West Caucasian Tur. Shot by Mr. St. George Littledale.

WEST CAUCASIAN TUR or IBEX (*Capra caucasica*).

Of the two peculiar kinds of wild goats inhabiting the Caucasus, and locally known as tur, the present species is easily recognised by the approximation in the form of its horns (especially in immature individuals) to those of true ibex, and the uniform bright chestnut-brown colour of the hair of the adult male in the summer coat; the chin, beard, and lower part of the legs being alone black. Although the horns present a considerable resemblance to those of ibex, they are decidedly thicker, have a different curvature, and show distinct knobs, or knots only in their upper half. In young males the knots extend the whole length of the front of the horns, and the long winter coat is a pale drab colour. Height at shoulder about $37\frac{1}{2}$ inches.

Distribution.—The western half of the main chain of the Caucasus. Certain peculiarly shaped horns appear to indicate the existence of a hybrid race between this species and the East Caucasian tur in the Central Caucasus.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
40 $\frac{1}{8}$	12 $\frac{5}{8}$	15 $\frac{1}{4}$	Caucasus	St. George Littledale.
36 $\frac{3}{4}$	11 $\frac{5}{8}$	27 $\frac{5}{8}$	Do.	Do.
34 $\frac{3}{4}$	11 $\frac{5}{8}$	22 $\frac{3}{4}$	Do.	Do.
34 $\frac{1}{2}$	12	22	Kouban, Caucasus	Prince E. Demidoff.
32 $\frac{1}{4}$	11 $\frac{1}{2}$	25 $\frac{1}{4}$	Do.	Do.
31 $\frac{1}{2}$	12 $\frac{1}{2}$	24 $\frac{1}{2}$	Do.	Do.
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.
¹ 22 $\frac{3}{4}$	10 $\frac{7}{8}$	22 $\frac{1}{4}$	Do.	St. George Littledale.

¹ Presumed hybrid between *C. caucasica* and *C. cylindricornis*.



Head of East Caucasian Tur.

EAST CAUCASIAN TUR or BHARAL (*Capra cylindricornis*).

A very different-looking creature 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 not improbably indicates a step from the more typical members of that group in the direction of the sheep. In addition to the peculiar form of its horns, this tur is characterised by the extreme shortness of the beard, which merely forms a curling fringe on each side of the chin, instead of the long central tuft observable at certain seasons in the West-Caucasian species. The general colour of the fur 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.

Distribution.—The Eastern Caucasus, from Kaşbek to Daghestan.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
44 $\frac{3}{4}$	13 $\frac{1}{2}$	10	Caucasus	Prince P. Demidoff.
42	13 $\frac{3}{4}$	14	Do.	Prince E. Demidoff.
40	12	8 $\frac{1}{2}$	Do.	Prince P. Demidoff.
38 $\frac{1}{4}$	12 $\frac{1}{2}$	...	Eastern Caucasus	Hon. Walter Rothschild.
36	13	...	Daghestan	J. D. Cobbold.
34 $\frac{3}{4}$	13 $\frac{3}{4}$	24 $\frac{1}{4}$	Caucasus	H.R.H. the 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.
33 $\frac{3}{8}$	12	19 $\frac{3}{4}$	Do.	British Museum.
32	13	19	Do.	Berthold Smith.
31 $\frac{1}{2}$	12	7 $\frac{3}{4}$	Do.	F. G. Barclay.
31	11	28	Northern Caucasus	Capt. H. H. P. Deasy.
30	12	17	Daghestan	F. G. Barclay.
-30	11	14	Caucasus	Dr. Albert von Stephani.

- Owner's measurements.



Head of Bharal.

The BHARAL or BLUE SHEEP (*Ovis nahura*).

(Or *Pseudois nahura*.)

With horns not unlike those of the East Caucasian 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 among 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 fur 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 probably between the hoofs, the bharal differs from the more typical sheep and resembles the goats.

Distribution.—From Hunza, and Shigar, in Baltistan, and near Sanju, south-east of Yarkand, to Moupin, in Eastern Tibet, 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.
-32½	...	12	Milam Pass . . .	Capt. W. de L. Williams.
-32	...	...	?	The late B. H. Hodgson, <i>P.Z.S.</i> 1840, p. 66.
31½	13½	22½	Ladak . . .	J. Campbell of Kilberry.
30¾	12¼	21¾	Garhwal . . .	A. O. Hume.
30½	10	18½	?	Capt. F. G. F. Deshon.
-30½	11	15½	Ladak . . .	P. H. G. Powell-Cotton.
30	13¼	25¼	Do. . .	Hon. Walter Rothschild.
30	11	24	Hanle, Spiti . . .	Major B. L. Carew.
-30	...	...	Baba Pass . . .	Major R. W. Johnston.
29¾	12½	22½	Garhwal . . .	A. O. Hume.
29½	11¾	25½	?	H.R.H. the Duke of Saxe-Coburg and Gotha.
29½	12	26½	Northern Sikkim . . .	Major A. Pearse.
-29	12	...	?	Lieut.-Col. A. E. Ward.
-29	...	...	?	Lucknow Museum.
28¾	10½	21½	?	Capt. Lord C. Fitzmaurice.
28¾	12½	22	Chang-chenmo . . .	B. H. Shaw-Stewart.
28½	11½	16¼	?	Capt. C. A. Vivian.
28½	12¼	26½	Hanle . . .	Capt. F. W. H. Walshe.
-28½	10½	...	?	Indian Museum.
28	11	20¼	?	British Museum (Hume Collection).
28	11	16	Hanle . . .	Arnold Pike.
27¾	10½	23½		R. H. Edmondson.
27¾	10¼	10	Ladak . . .	Capt. G. Campbell.
27½	13	34	Kumaon . . .	E. R. Neave.
27½	10¾	16¾	?	P. Radclyffe.
27¼	11	21½	Ladak . . .	St. George Littledale.
27¼	12	25¼	Do. . .	Lieut.-Col. H. Appleton.
-27	...	...	Do. . .	Otho Shaw.
27	11½	28	Tibet . . .	Major C. S. Cumberland.

- Owner's measurements.



Head of Arui.

The ARUI, UDAD, or BARBARY SHEEP (*Ovis lervia*).

(Also known as *Ovis tragelaphus* and *Ammotragus lervia*.)

The only wild sheep found throughout the continent of Africa is the arui, or fechstal 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 domesticated sheep, of which, however, it is not the ancestor. Height at shoulder about 3 feet 3 inches.

Distribution.—The mountains of Northern and North-Eastern Africa, from Morocco to Egypt, and thence southwards nearly to Khartum, in about lat. 16° N.

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 . . .	Julius Jeppé.
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 $\frac{1}{3}$	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.
-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.
27 $\frac{1}{2}$	12	21	Tunisia . . .	P. H. Thomas.
26	13	24	?	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.
-25 $\frac{1}{2}$	12 $\frac{3}{8}$	20 $\frac{1}{2}$	Do. . . .	Capt. John Marriott.
-25 $\frac{1}{2}$	11	18	Tunisia . . .	A. E. Pease.
♀-20 $\frac{1}{4}$	10	16	Algeria . . .	Do.
♀-19	7	17	Tunisia . . .	Capt. John Marriott.
♀ 16·8	7·6	14·2	Egypt	Prince Henry of Liechtensteir.

- Owner's measurements.



Head of Rocky Mountain Bighorn, from Mr. W. F. Sheard's specimen.

The BIGHORN SHEEP (*Ovis canadensis*).

(Also known as *Ovis cervina*.)

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. On the other hand, in *O. canadensis stonei* of the North-West Territories the colour of the back is very dark, and the white on 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. Height at shoulder about 3 feet 2 inches. Weight about 350 lbs.

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.

A. ROCKY MOUNTAIN BIGHORN (*Ovis canadensis typica*).

Specimens referable to some of the other American races are included in this list.

Length on front curve.	Circumference.	Tip to Tip.	Locality	Owner.
-52½	18½	...	Selkirk Range, B.C. (?)	W. F. Sheard. (See illustration.)
-43¾	17¾	20	Alberta	W. F. Sheard.
-42½	16¼	25¾	Lower California . .	George H. Gould.
42	16	...	Wyoming	T. W. H. Clarke.
-...	17¼	...	Do.	Do.
-42	17½	15	Alberta	G. L. Harrison.
-41½	15	...	Kootenay, B.C. . . .	Provincial Museum, B.C.
40¾	16½	...	Yellowstone	British Museum.
-40½	16½	17	S.E. of British Columbia .	W. T. Hornaday.
40¼	15¼	20¼	?	Sir Edmund G. Loder, Bart.
-40	15¼	...	Rocky Mountains . . .	Otho Shaw.
40	15	21½	British Columbia . . .	J. W. R. Young.
-39¾	14½	23½	Do.	G. L. Harrison.
39½	15¾	...	Colorado	St. George Littledale.
39½	16½	24¾	Montana	British Museum.
39½	15½	19	?	Sir Edmund G. Loder, Bart.
-39¼	17¾	...	Mexico	G. L. Harrison.
38¾	15½	22	?	Gerald Buxton.
38¼	16¾	...	Bighorn Mountains . . .	Sir H. Seton-Karr.
38¼	15¼	19¼	Montana	Edmund Littledale.
38¼	16	19	N.W. Territories . . .	S. Ratcliff.

- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
38	17	...	Alberta, N.W.T.	Arnold Pike.
38	15	...	British Columbia	Capt. F. Cookson.
38	18	21	?	Hon. Walter Rothschild.
37 $\frac{3}{4}$	15 $\frac{7}{8}$	23 $\frac{3}{4}$	Mexico	J. A. H. Drought.
-37 $\frac{3}{4}$	16 $\frac{1}{4}$	22 $\frac{1}{2}$	British Columbia	J. O. Shields.
37 $\frac{1}{2}$	16	15	Do.	Col. A. Charlesworth.
37 $\frac{1}{4}$	15 $\frac{1}{2}$	16	Do.	J. Turner-Turner.
-37	16	31	Wyoming	T. W. H. Clarke.
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	Capt. 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 $\frac{1}{2}$	...	Do.	Thomas Bate.
36 $\frac{1}{2}$	14	...	?	J. D. Cobbold.
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 $\frac{7}{8}$	14 $\frac{3}{4}$	17 $\frac{1}{2}$	Do.	Count E. Hoyos.
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 $\frac{1}{4}$	12 $\frac{1}{4}$	16	California	Sir Victor Brooke's Collection.
35 $\frac{1}{4}$	15 $\frac{1}{4}$	18 $\frac{1}{2}$	British Columbia	Sir Peter Walker, Bart.
35	14	18 $\frac{1}{2}$	Do.	Admiral Sir Michael Culme-Seymour, Bart.
-35	15	19 $\frac{3}{4}$	Wyoming	Count Scheibler.
35	14	16	Do.	Gerald Hardy.
-34 $\frac{3}{4}$	14 $\frac{1}{2}$	...	Do.	T. D. M. Cardeza.

- Owner's measurements.

RECORDS OF BIG GAME

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
34½	14¾	19	S.E. Montana . . .	J. A. Jameson.
34½	14½	...	California . . .	G. P. Fitzgerald.
34½	17	...	N. Chehuahua . . .	C. Sheldon.
34	16	17	N.W. Wyoming . . .	A. Rogers.
♀ 10½	5½	13	British Columbia . . .	A. Neilson.

B. WHITE BIGHORN (*Ovis canadensis dalli*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
43½	15½	26	Alaska . . .	H.R.H. the Prince of Wales.
43	13½	27¼	Do. . .	Hon. Walter Rothschild.
40	14	21	Do. . .	T. Todd.
39¾	13	22½	Do. . .	Hon. Walter Rothschild.
38½	14	24½	Do. . .	David T. Hanbury.
38¼	12½	21¼	Do. . .	P. B. Vander-Byl.
38	13¼	18	Do. . .	A. E. Butter.
37¼	13¾	21¼	Do. . .	Lord Elphinstone.
37	13¾	20½	Do. . .	Hon. J. C. Lister.
36¼	13	18	Do. . .	R. F. Glyn.
36	14½	17¾	Do. . .	C. G. Cowan.
36	12½	18	Do. . .	Capt. C. R. E. Radclyffe.
34	12¾	18½	Do. . .	J. Carr Saunders.
32¾	13½	21	Do. . .	W. H. King.
32½	13¼	20½	Do. . .	British Museum (J. T. Studley).
♀ 10¾	4½	5¼	Do. . .	Rowland Ward.
♀ 9½	4¾	8	Do. . .	British Museum.

C. GREY BIGHORN (*Ovis canadensis fannini*).

A provisional race characterised by the grey colour of the back.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-40½	13	20	Near Dawson City . . .	Provincial Museum, B.C.
37	13¾	18¼	Yukon . . .	Hon. Walter Rothschild.
35¾	14	24¾	Do. . .	W. H. Bell.
♀ 9	5½	9½	Do. . .	Prince Coloredo Mannsfeld.

- Owner's measurements.



Head of Black Bighorn. Shot by J. R. Bradley.

D.—**BLACK BIGHORN** (*Ovis canadensis stonei*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
37 $\frac{1}{4}$	13 $\frac{1}{2}$	18 $\frac{1}{2}$	Cassiar District	R. Hayne.
36 $\frac{3}{4}$	12 $\frac{1}{2}$	21 $\frac{1}{4}$	Do.	British Museum (J. M. Hanbury).
35 $\frac{1}{2}$	13 $\frac{3}{4}$	22	Do.	Hon. Walter Rothschild.
34 $\frac{1}{2}$	13 $\frac{3}{4}$	21	Do.	P. N. Graham.
34 $\frac{1}{2}$	13	23 $\frac{1}{4}$	Do.	Hon. Walter Rothschild.
34	14 $\frac{1}{2}$	23 $\frac{1}{2}$	N. British Columbia	W. T. Hornaday.
32 $\frac{1}{2}$	14 $\frac{1}{4}$	28 $\frac{3}{4}$	Do.	American Museum of Natural History.

- Owner's measurements.



Skull and Horns of Kamchatkan Bighorn. Shot by Prince E. Demidoff.

E.—KAMCHATKAN BIGHORN (*Ovis 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 $\frac{3}{4}$	Do. . . .	Do.
38	13 $\frac{1}{2}$	26	Do. . . .	Dr. F. H. H. Guillemand.

— Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
35 $\frac{3}{4}$	13 $\frac{1}{4}$	24	Kamchatka . . .	P. Niedieck.
35 $\frac{1}{2}$	14 $\frac{1}{2}$	24 $\frac{3}{4}$	Do. . . .	St. Petersburg Museum.
35 $\frac{1}{2}$	14	26 $\frac{1}{2}$	Do. . . .	Prince E. Demidoff.
35 $\frac{1}{4}$	14 $\frac{1}{4}$	24 $\frac{1}{2}$	Do. . . .	British Museum (St. George Little- dale).
34 $\frac{3}{4}$	14 $\frac{1}{2}$	25 $\frac{1}{2}$	Do. . . .	St. George Littledale.
34	13 $\frac{1}{2}$	23 $\frac{5}{8}$	Do. . . .	Hon. Walter Rothschild.
33	13 $\frac{3}{4}$	22	Do. . . .	Capt. C. R. E. Radclyffe.
32 $\frac{3}{4}$	13 $\frac{1}{2}$	23	Do. . . .	Sir Edmund G. Loder, Bart.
-31 $\frac{1}{2}$	14	26	Do. . . .	Dublin Museum.
31 $\frac{1}{2}$	13 $\frac{5}{8}$	21	Cape Chepunske . . .	Col. J. Biddulph.
-31 $\frac{1}{2}$	13 $\frac{3}{4}$	24	Kamchatka . . .	Dublin Museum.
-30 $\frac{3}{4}$	14 $\frac{1}{8}$	25 $\frac{3}{4}$	Do. . . .	Dr. Albert von Stephani.
♀ 10 $\frac{3}{4}$	5	14 $\frac{1}{2}$	Do. . . .	Hon. Walter Rothschild.
♀ 8 $\frac{3}{4}$	5 $\frac{1}{4}$	9 $\frac{3}{4}$	Do. . . .	British Museum.

F.—CLIFTON'S BIGHORN (*Ovis 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 complete male specimen was presented to the British Museum in 1902.

Length on front curve.	Circumference	Tip to Tip.	Locality.	Owner.
37 $\frac{1}{2}$	11	22 $\frac{1}{4}$	Yana Valley . . .	J. Talbot Clifton.
33	13	22 $\frac{1}{2}$	Do. . . .	British Museum (J. Talbot Clifton).
32 $\frac{3}{4}$	11 $\frac{1}{2}$	24 $\frac{1}{2}$	Do. . . .	J. Talbot Clifton.
26 $\frac{1}{2}$	11	20 $\frac{3}{4}$	Do. . . .	Do.
♀ 5 $\frac{1}{2}$	3 $\frac{5}{8}$	5 $\frac{1}{2}$	Do. . . .	Do.

- Owner's measurements.



Head of Marco Polo's Sheep. From Mr. David T. Hanbury's specimen.

MARCO POLO'S SHEEP (*Ovis poli*).

In common with the following members of the genus *Ovis*, this splendid sheep has the transverse wrinklings 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 comparative slenderness and great length, forming a spiral of more than one complete circle, with the front angles typically well developed. The hind-quarters show a large amount of white, extending over the greater part of the thighs; and in winter the throat is furnished with a voluminous ruff of long white hairs, which disappears in summer. Height at shoulder about 4 feet, or perhaps rather less; weight of adult male about 22 stone.

Distribution.—Typically the plateau of the Pamirs in Central Asia, but represented by a closely allied race (*O. poli karelini*) in the Thian Shan range of Turkestan, in which the horns are generally somewhat shorter, and may have the front outer angle rounded off. This sheep was first definitely made known in England by

specimens obtained during the Second Yarkand Mission under the late Sir D. Forsyth ; 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.
-75	16	54½	Pamir	Field-Marshal Earl Roberts.
73	15	48	Little Pamir	The late Col. H. C. B. Tanner.
-71	15½	53¾	Great Pamir	Viscount Edmond de Poncins.
70	14½	45	Do.	H.M. The King.
70	17	52	Do.	H.H. the Maharaja of Cooch Behar.
69½	15¼	56	?	Marquis of Lansdowne.
69½	14½	39	Tagdumbash	Sir Edmund G. Loder, Bart.
-68½	15¼	45¾	Do.	Queen's Own Corps of Guides.
68½	15	35¾	?	Lewis Flower.
68¾	15	50½	?	H. J. Elwes.
68	17	43	Pamir	Major-Gen. Sir R. Pole-Carew.
-68	16	52	?	Indian Museum.
-67¾	16	53¾	?	Indian Museum (Col. J. Biddulph).
-67	16	...	Thian Shan	H.H. the Maharaja of Travancore.
67	15½	42½	?	Duke of Westminster.
66⅞	15⅝	46	?	Sir Edmund G. Loder, Bart.
66⅞	13⅞	46½	Valley between Little and Great Pamir	A. O. Hume.
66	15¼	44	Do.	British Museum (Hume Collection).
66	15¾	42	?	A Leslie Renton.
65½	16	53	Great Pamir (16,000 feet) .	British Museum (Gen. Sir T. E. Gordon).
-65	16	41	?	Dublin Museum.
65	16½	49½	?	Lieut.-Col. C. F. Blane.
64½	16½	46	Pamir	Col. 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.

- Owner's measurements.

Length on front curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
64	15	39	Little Pamir	A. Ezra.
64	15	49	?	Duke of Portland.
63 $\frac{5}{8}$	16 $\frac{1}{8}$	42 $\frac{1}{2}$	Pamir	Hon. Walter Rothschild.
63 $\frac{3}{4}$	15 $\frac{3}{4}$	46 $\frac{1}{4}$	Tagdumbash	Earl of Dunmore.
63	14 $\frac{3}{4}$	32 $\frac{1}{4}$	Do. . . .	Col. G. D. F. Sullivan.
63	16	49 $\frac{1}{2}$	Little Pamir	Bachelors' Club (Major R. P. Cobbold).
62 $\frac{3}{4}$	16 $\frac{1}{4}$	51	Tagdumbash	Capt. T. W. Greenfield.
62 $\frac{1}{2}$	15	57	?	Sir Edmund G. Loder, Bart.
61 $\frac{1}{2}$	15 $\frac{1}{2}$	46 $\frac{1}{4}$	Tagdumbash	E. L. Phelps.
60 $\frac{3}{4}$	15 $\frac{3}{4}$	46 $\frac{3}{4}$	Pamir	St. George Littledale.
60	15 $\frac{1}{4}$	46 $\frac{3}{4}$	Tagdumbash	Capt. T. W. Greenfield.
60	15 $\frac{1}{2}$	46	Do. . . .	P. Church.
-60	16	52	Do. . . .	H. Lennard.
60	15 $\frac{3}{4}$	43	Do. . . .	R. Harcastle.
59 $\frac{1}{4}$	16	46	Do. . . .	Capt. H. H. P. Deasy.
59	15 $\frac{1}{2}$	40	Do. . . .	Lord Curzon.
59	16 $\frac{1}{4}$	47	?	Viscount Powerscourt.
59	15 $\frac{3}{4}$	41	?	Martyn Kennard.
59	14	42 $\frac{3}{4}$	Tagdumbash	David T. Hanbury.
59	16 $\frac{1}{2}$	44 $\frac{1}{4}$	?	R. F. Glyn.
-58 $\frac{7}{8}$	15 $\frac{3}{4}$	44 $\frac{3}{4}$	Do. . . .	Officers' Mess, 3rd Goorka Rifles.
58	17	41 $\frac{3}{4}$	Thian Shan	A. Bayley-Worthington.
57 $\frac{3}{4}$	15 $\frac{3}{4}$	47	Pamir	H. N. von Archer.
57 $\frac{3}{4}$	15	46 $\frac{3}{4}$	Tagdumbash	Major-General Sir Arthur Ellis, K.C.V.O.
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	15 $\frac{1}{4}$	42	Tagdumbash	Hon. R. A. Ward.
56 $\frac{3}{4}$	15 $\frac{1}{8}$	35 $\frac{1}{2}$	Do. . . .	St. George Littledale.
56	15	44	Do. . . .	E. P. Tennant.
56	14	45 $\frac{3}{4}$	?	Major J. Manners Smith.

- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
56	14½	43	?	W. O. Bell-Irving.
56	17½	42	Pamir	E. L. Phelps.
55¾	15¾	43	?	J. Carr Saunders.
55⅝	16½	43	Pamir	Major C. S. Cumberland.
55	16	44	?	H.R.H. le Duc d'Orléans.
55	16	43	Thian Shan	Lord Osborne Beauclerk.
54½	16¾	39½	Pamir	H.R.H. Prince Pierre d'Orléans and Braganza.
54½	14¾	43½	Do.	Capt. J. B. Mackintosh.
54½	15¼	41	Do.	Lieut.-Col. H. Appleton.
53½	14¼	38¾	N. Pamir	R. Hayne.
♀-14.7	5.90	15.75	Great Pamir	Viscount Edmond de Poncins.
♀ 10½	5½	13½	Tagdumbash	David T. Hanbury.

The SAIAR WILD SHEEP (*Ovis 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.

The English name of Littledale's sheep was given to this species before *Ovis littledalei* was described; it is now transferred to the latter.

Distribution.—Typically the Saiar or Sair Mountains.

LITTLEDALE'S SHEEP (*Ovis littledalei*).

Larger than the last, 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 argali, and showing more of their inner surfaces in a front view. A white throat-ruff in winter.

Distribution.—The east end of the Thian Shan, to the south-east of Kuldja, or Ili, and the Semipalatinsk Altai and Alatau ranges.

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.
61 $\frac{1}{2}$	19 $\frac{1}{4}$	39 $\frac{1}{4}$	Do.	British Museum (St. George Littledale).
59 $\frac{3}{8}$	19 $\frac{1}{8}$	38 $\frac{1}{4}$	Do.	St. George Littledale.
51 $\frac{1}{2}$	17	41 $\frac{1}{2}$	Thian Shan . . .	Do.
49 $\frac{1}{2}$	16 $\frac{1}{4}$	25 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
*-47	15 $\frac{1}{4}$	30	Saiar Mountains . .	W. T. Hornaday.
46 $\frac{1}{4}$	14 $\frac{1}{4}$	27	Irtish District . .	Hon. Walter Rothschild.
45 $\frac{1}{2}$	14 $\frac{3}{4}$	34	?	Sir Edmund G. Loder, Bart.
*41	15 $\frac{1}{4}$	30	Saiar Mountains . .	W. T. Hornaday.
40	14 $\frac{3}{8}$	29 $\frac{1}{2}$	Near Sairam Lob Nor	Lord Elphinstone.

— Owner's measurements.

The two marked * are *Ovis sairensis*.



Skull and Horns of Siberian Argali.
From a specimen shot by Mr. St. George Littledale in the Altai.

The ARGALI (*Ovis ammon*).

Closely allied to Marco Polo's sheep and the two preceding species, but distinguished from the former by the thicker and less expanded horns, which often have the outer front angle much rounded off, and the wrinklings very fine. Face uniformly coloured, and the horns much more "nipped in" below the eyes than in Littledale's sheep.

A.—SIBERIAN ARGALI (*Ovis 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 in the south of Eastern Siberia through Northern Mongolia to the Altai; now chiefly restricted to the two latter localities.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
62	19	38 $\frac{3}{4}$	Altai	H. J. Elwes.
60	20	41	Do.	Lord Elphinstone.
59 $\frac{1}{2}$	20	41 $\frac{1}{2}$	Do.	Hon. Walter Rothschild.
-59 $\frac{1}{8}$	19 $\frac{1}{2}$	40	Do.	W. T. Hornaday.
59	18	36 $\frac{1}{4}$	Do.	H. W. Seton-Karr.
59	19	37 $\frac{1}{2}$	Do.	Ford G. Barclay.
56 $\frac{1}{2}$	18 $\frac{1}{2}$	33 $\frac{1}{2}$	Do.	Major C. S. Cumberland.
55	18	39	Do.	Prince E. Demidoff.
54 $\frac{3}{4}$	18 $\frac{3}{4}$	30	Do.	Major C. S. Cumberland.
54 $\frac{1}{2}$	19 $\frac{3}{4}$	33 $\frac{3}{4}$	Do.	Do.
53 $\frac{1}{4}$	21 $\frac{3}{4}$	33 $\frac{1}{2}$	Do.	Duke of Bedford.
53 $\frac{1}{4}$	19	22	Do.	St. George Littledale.
53	18	39	Do.	W. E. Pease.
52 $\frac{1}{2}$	19 $\frac{1}{2}$	39	Do.	J. R. Bradley.
52 $\frac{1}{2}$	19 $\frac{3}{4}$	33	Do.	Prince E. Demidoff.
52	21	30 $\frac{1}{2}$	Do.	P. B. Vander-Byl.
51	18 $\frac{1}{4}$	26 $\frac{3}{4}$	Do.	Lieut.-Col. H. G. C. Swayne.
51	19 $\frac{1}{4}$	33	Do.	St. George Littledale.
50	19 $\frac{1}{4}$	27 $\frac{1}{4}$	Do.	Sir Edmund G. Loder, Bart.
-50	19 $\frac{1}{4}$	36	Do.	Dr. Albert von Stephani.
49 $\frac{1}{2}$	20 $\frac{1}{4}$	25	Do.	St. George Littledale.
-48 $\frac{1}{4}$	19 $\frac{3}{4}$	36 $\frac{1}{4}$	Do.	Berlin Museum.
47 $\frac{1}{4}$	18 $\frac{3}{4}$	31	Do.	R. Hayne.
45 $\frac{1}{2}$	20	27 $\frac{1}{4}$	Do.	Prince E. Demidoff.
40	16	33	Do.	Princess Demidoff.
♀ 26	7 $\frac{1}{4}$	23 $\frac{3}{4}$	Do.	Berlin Museum.

- Owner's measurements.



Head of Tibetan Argali.

B.—TIBETAN ARGALI (*Ovis ammon hodgsoni*).

Chiefly distinguished from the Siberian argali by the development of a distinct white ruff on the throat of the males, at least in the winter coat, and also by the less degree of lateral expansion of the horns, which do not form more than a single complete circle, and are not nipped in below the eyes and are 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, of which this sheep is best regarded as a local race. A specimen measured by Lieut.-Col. Greenaway was 76 inches from the nose to the tip of the tail, and the weight 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. (P. H. G. 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.
-50	17	...	Tibet	W. H. Lane.
-49 $\frac{3}{4}$	18	...	Ladak	G. W. S. Sherlock.
-48 $\frac{1}{2}$	19	...	Tibet	E. Howard Brooke.
-48	18 $\frac{1}{2}$	...	Do.	Lieut.-Col. T. K. E. Johnston.
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	...	Do.	Otho Shaw.
47	17	27 $\frac{1}{4}$	?	Lieut.-Col. H. Appleton.
-47	17 $\frac{1}{2}$	18	?	Lieut.-Col. G. W. Brazier Creagh.
46 $\frac{1}{2}$	19 $\frac{3}{4}$	20	Ladak	A. O. Hume.
-46 $\frac{1}{2}$	16 $\frac{1}{2}$	21	Do.	P. H. G. Powell-Cotton.
46 $\frac{1}{2}$	16 $\frac{3}{4}$	...	Do.	Major H. M. Biddulph.
-46	19	...	?	Major C. S. Cumberland.
46	16	17	?	Hon. R. A. Ward.
-45 $\frac{7}{8}$	15 $\frac{3}{4}$	29 $\frac{1}{2}$	?	Dr. Albert von Stephani.
45 $\frac{1}{2}$	16 $\frac{1}{4}$	17	?	Duke of Teck.
45 $\frac{1}{2}$	17 $\frac{1}{4}$	19	?	Percy Radclyffe.
45	17	16	Ladak	J. V. Phelps.
-45	...	...	?	Lucknow Museum.
-44 $\frac{1}{2}$	17	21 $\frac{7}{8}$	Ladak	A. E. Leatham.
44 $\frac{1}{2}$	17	22	?	Capt. F. G. T. Deshon.
44	16	17 $\frac{1}{2}$	Ladak	Duke of Bedford.
44	16	17 $\frac{1}{2}$	Do.	W. R. Lawrence.

- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-44	18	...	Ladak	H.H. the Maharaja of Travancore.
43	17	19	Do. . . .	Comte de Jancourt.
42½	16½	19	?	A. O. Hume.
42½	17	...	?	Lieut.-Col. T. Greenaway.
-42½	16	15	Ladak	Major H. M. Biddulph.
42½	16	18	Do. - . . .	Brit. Museum (Hume Collection).
42½	15¼	...	?	J. Carr Saunders.
42¾	17	20½	?	N. C. Cockburn.
42¾	16¼	20	Tibet	H.R.H. the Duke of Saxe-Coburg and Gotha.

C.—MONGOLIAN ARGALI (*Ovis ammon jubata*).

Imperfectly known, but apparently allied to the Tibetan race, having a distinct yellowish-white throat-ruff and generally similar horns, with, in some cases at least, the outer front angles of the latter much rounded off. The white on the buttocks and hinder surface 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.
44¾	16½	23	Manchuria	H.R.H. Henri de Bourbon, Comte de Bardi.

- Owner's measurements.



Head of Shapo or Ladak Urial.

URIAL or SHAPO (*Ovis vignei*).

A much smaller sheep than either 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 strongly developed 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, Afghanistan, part of the Caucasus, Baluchistan, Southern Persia, the North-West Frontier of India, and the Punjab Salt-Range. Four local races, two of which probably intergrade in the Indus valley, are recognised. First, the typical urial of Astor, the sha or shapo of Ladak (*O. vignei typica*). Second, the Kelat urial (*O. vignei blanfordi*) of Kelat, Afghanistan, and Baluchistan, and the Trans-Indus districts, in which the points of the horns tend to turn up, and the front angles may be knotted. Third, the Punjab urial (*O. vignei cycloceros*) of the Cis-Indus Punjab, in which the colour is redder, the ruff much developed, and the horns form a close-coiled spiral. Fourth, the Kopet Dagh Urial (*O. v. arkal*), in which the front of the horns is much flattened, with the two angles very pronounced.

A.—SHAPO or LADAK URIAL (*Ovis vignei typica*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
39	11 $\frac{3}{4}$	15 $\frac{1}{2}$	?	Col. 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. . . .	A. O. Hume.
36 $\frac{1}{4}$	11 $\frac{3}{4}$	...	Do. . . .	Lieut.-Col. A. E. Ward
36 $\frac{1}{4}$	10 $\frac{5}{8}$	11 $\frac{5}{8}$	Baltistan . . .	Major T. A. Salt.
34 $\frac{3}{8}$	11	...	?	East India Club.
-33 $\frac{3}{4}$	12 $\frac{1}{4}$	13	Ladak	P. H. G. Powell-Cotton.
33 $\frac{1}{4}$	12	12	Do. . . .	Arnold Pike.
-33 $\frac{1}{8}$	11 $\frac{1}{2}$	10 $\frac{5}{8}$	Do. . . .	Sir Edmund G. Loder, Bart.
-33	11 $\frac{1}{4}$	...	Chitral	C. Rose.
33	10 $\frac{1}{2}$	15	Ladak	Capt. F. W. H. Walshe.
32 $\frac{1}{4}$	10	11	Do. . . .	D. L. R. Lorimer.
32 $\frac{1}{4}$	10 $\frac{1}{2}$	11 $\frac{3}{4}$	Do. . . .	Sir Victor Brooke's Collection.
-32	11	9 $\frac{3}{4}$	Do. . . .	Col. J. Biddulph.
31 $\frac{3}{4}$	10 $\frac{1}{4}$	7	Do. . . .	Col. F. C. Lister-Kay.
31 $\frac{1}{2}$	10	15	Gilgit	Major B. E. M. Gurdon.
31 $\frac{1}{2}$	10 $\frac{1}{4}$	13 $\frac{1}{2}$	Do. . . .	B. H. Shaw-Stewart.
-31	11	...	Do. . . .	J. D. Cobbold.
31	11 $\frac{1}{4}$	12	?	N. C. Cockburn.
30 $\frac{1}{2}$	8 $\frac{1}{2}$	19	Gilgit	Capt. K. Dingwall.
30	11 $\frac{3}{4}$	16	?	Hon. Walter Rothschild.
-30	...	...	Ladak	Otho Shaw.
-30	11	...	?	H.H. the Maharaja of Travancore.
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.



Head of Kelat Urial. Major F. H. Taylor's specimen.

B.—KELAT and PUNJAB URIALS (*Ovis vignei blanfordi* and *cycloceros*).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
39½	10¾	18½	Punjab	Major F. H. Taylor. (See illustration.)
38¾	9¾	9½	Chita Oapar Range, near Attock	Royal Artillery Mess, Woolwich (Lieut-Col. C. F. Massey).
-38½	...	...	Jouaki Land	Royal Artillery Mess at Attock.
-36¾	9¾	5¾	?	Dr. Albert von Stephani.
36¾	9	9	Hills north - west of Peshawur	Mess of 60th Rifles (Lord Walter Fitzgerald).
36	10¼	15	Persia	Hon. Walter Rothschild.
35½	10½	16	Gulran, Afghanistan	British Museum (Dr. J. Aitchison).
-35½	10¼	20¼	?	Mess, 21st Punjab Infantry.
35¼	10½	9½	Punjab	Major F. H. Taylor.
-35	11	14	Near Cabul	Major J. W. M. Cotton.
33½	9¼	12½	Salt-Range	A. O. Hume.
33½	9¾	8¼	?	Major R. L. Tottenham.
32½	10	11½	?	Sir Victor Brooke's Collection.

- Owner's measurements.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
32 $\frac{3}{4}$	7 $\frac{3}{4}$	12	Punjab	G. Blois Johnson.
32 $\frac{1}{4}$	10	11 $\frac{1}{2}$	?	British Museum (Hume Collection).
31 $\frac{3}{4}$	9	16 $\frac{1}{2}$	Near Daghestan . . .	R. Graham.
31 $\frac{1}{2}$	9 $\frac{1}{2}$	16 $\frac{3}{4}$	Salt-Range	Major H. W. Codrington.
31 $\frac{1}{2}$	12	10 $\frac{1}{4}$	?	Major J. Manners Smith.
-31	10 $\frac{1}{4}$	...	Punjab	Major-General A. A. A. Kinloch.
31	9 $\frac{3}{8}$	14 $\frac{1}{2}$	Do.	Lieut.-Col. R. H. Rattray.
30 $\frac{7}{8}$	9 $\frac{1}{4}$	20 $\frac{3}{8}$	Salt-Range	Sir Victor Brooke's Collection.
30 $\frac{3}{4}$	11 $\frac{3}{4}$	11 $\frac{1}{4}$	Do.	Col. J. Biddulph.
-30	8 $\frac{1}{2}$	6 $\frac{1}{2}$	?	Dublin Museum.

All the following specimens belong to *O. v. blanfordi* :—

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
37 $\frac{1}{2}$	10 $\frac{1}{4}$	11	Haji Khan, Kelat, A. O. Hume.	
34 $\frac{1}{2}$	8 $\frac{1}{4}$	16	^{3000 ft.} Sind	L. Napier.
31 $\frac{1}{2}$	11 $\frac{1}{2}$	23 $\frac{1}{2}$	Do.	H. R. H. the Prince of Wales.
31 $\frac{3}{8}$	9 $\frac{3}{8}$	13 $\frac{3}{4}$	Do.	Brit. Museum (Hume Collection).
28 $\frac{1}{2}$	9	10	Baluchistan	Col. J. Biddulph.
-25 $\frac{1}{2}$	9 $\frac{1}{4}$	10 $\frac{3}{4}$	Do.	Lieut.-Col. L. L. Fenton.

C.—KOPET DAGH URIAL (*Ovis vignei* arkal).

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
39 $\frac{1}{2}$	12 $\frac{1}{4}$	14 $\frac{1}{4}$	Russian Turkestan . .	Prince E. Demidoff.
35 $\frac{1}{2}$	10 $\frac{1}{4}$	17 $\frac{3}{8}$	Do.	Do.
34 $\frac{1}{2}$	11	12	Do.	St. George Littledale.
33 $\frac{1}{2}$	11	8 $\frac{3}{4}$	Do.	Prince P. Demidoff.

- Owner's measurements.

ARMENIAN WILD SHEEP (*Ovis gmelini*).

This wild sheep 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 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; the under parts and lower portions of the legs white. Less hair on the throat than in the urial. Height at shoulder typically about 2 feet 9 inches.

A.—ARMENIAN RACE (*Ovis gmelini typica*).

Distribution.—The mountains of Armenia and Asia Minor.

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 $\frac{3}{8}$	?	British Museum.
30 $\frac{1}{2}$	10 $\frac{5}{8}$	18	?	Sir Victor Brooke's Collection.
-29 $\frac{3}{4}$	9 $\frac{3}{8}$	9 $\frac{1}{2}$	Axylon . . .	E. N. Buxton.
-26 $\frac{1}{10}$	8 $\frac{1}{2}$	12 $\frac{1}{2}$	Cilician Taurus . . .	C. G. Danford.
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 $\frac{3}{8}$	17	Asia Minor . . .	Col. J. Biddulph.
23 $\frac{3}{4}$	9 $\frac{1}{2}$	13 $\frac{1}{2}$	Persian Frontier . . .	Prince E. Demidoff.
21	9	14 $\frac{3}{8}$	Asia Minor . . .	H. O. Whittall.
21	8 $\frac{1}{2}$	6 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.

B.—PERSIAN RACE (*Ovis gmelini erskinei*).

Distribution.—The Elburtz Mountains and Eastern Persia.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
27 $\frac{1}{2}$	10	14	Near Teheran . . .	Hon. W. Erskine.
- Owner's measurements.				



Head of Cyprian Wild Sheep. From Biddulph, *Proc. Zool. Soc.* 1884.

C.—CYPRIAN RACE (*Ovis gmelini ophion*).

A small race distinguished by certain differences in 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. The horns closely resemble those of the Armenian race in general characters, but are less massive, and curve gradually from the base, instead of diverging nearly straight outwards, as is generally the case in the latter. Weight about 70 lbs.

Distribution.—The Tröodos Mountains of Cyprus.

Length on front curve.	Circumference.	Tip to Tip.	Owner.
27	7½	8¾	Hon. Walter Rothschild.
25	8	15¾	H. Williamson.
23½	8·15	12·20	Col. J. Biddulph.
23	7	5¾	British Museum.
22⅞	7¼	6	British Museum (Gen. Sir R. Biddulph).
22¼	8	12¾	Sir Victor Brooke's Collection.
-17½	8	1½	Dublin Museum.
16	7¼	16½	Cambridge Museum.

- Owner's measurements.



Head of Mufflon.

From a specimen in the British Museum, shot by Mr. F. G. Barclay.

The MUFLON (*Ovis musimon*).

The large light-coloured saddle on the otherwise dark summer 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 the rams curve forwards so as to have their tips below the eyes, and are comparatively massive, with the wrinkles of a type somewhat different from that obtaining in the Armenian 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.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
38½	8	11½	Sardinia . . .	Duke of Bedford.
34½	8½	16½	Do.	W. Moncreiffe.
33½	9	9	Do.	M. Egerton.

Length on front curve.	Circumference.	Tip to Tip.	Locality.	Owner.
32 $\frac{1}{4}$	9	9	Sardinia . . .	C. Sloane Stanley.
31	8 $\frac{1}{4}$	10	Do. . . .	C. G. R. Lee.
30 $\frac{1}{4}$	8 $\frac{5}{8}$	14	Do. . . .	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 $\frac{1}{8}$	21	Do. . . .	E. N. Buxton.
-28 $\frac{3}{4}$	8 $\frac{1}{4}$	8 $\frac{3}{8}$	Do. . . .	Dr. Albert von Stephani.
28 $\frac{3}{4}$	9	10	Do. . . .	F. G. Barclay.
28 $\frac{1}{4}$	9 $\frac{5}{8}$	9 $\frac{3}{8}$	Do. . . .	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. . . .	Lieut. J. E. Cameron, R.N.
-27 $\frac{1}{2}$	10 $\frac{1}{4}$	18 $\frac{1}{2}$	Do. . . .	J. H. Thomas.
27	9 $\frac{1}{2}$	10 $\frac{1}{2}$	Do. . . .	Sir Edmund G. Loder, Bart.
27	8 $\frac{1}{2}$	10	Do. . . .	British Museum.
-26	10 $\frac{3}{8}$	10 $\frac{1}{2}$	Corsica . . .	Capt. John Marriott.

- Owner's measurements.

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 of the more primitive breeds like that of Soa, and also in the Indian Hunia sheep, this appendage is comparatively short, and its length in other breeds is probably due to a kind of degeneration. If this be really the case, the ancestry may be looked for among the mufcons or urial or some allied extinct form, since the horns of most breeds approximate to the mufcon 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 mufcon type by the development of upright corkscrew-horns comparable with those of the markhor, but intermediate forms occur in Hungary.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
45½	9	15	Scotland . . .	J. A. H. Drought.
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).
28¾	8	21½	Scotland . . .	Rowland Ward.
22¾	9½	20¼	Yarkand . . .	British Museum (Hume Collection).
22¾	9¼	22½	Do. . . .	Do.
18	8¾	16¼	Fezzan . . .	British Museum.
10½	6	9	Faroe Islands . . .	R. J. Cuninghame.

Many-horned Breeds.

Length on outside curves.	Circumference.	Tip to Tip.	Number of Horns.	Owner.
21 $\frac{1}{4}$...17 $\frac{1}{2}$	7 $\frac{1}{2}$...5	35	Four	Capt. H. H. Banner.
20 $\frac{1}{2}$...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	Do.	} R. J. Cuninghame.
19 ...14	7 $\frac{3}{4}$...5 $\frac{1}{2}$	24 ... 5 $\frac{1}{4}$...	
17 $\frac{7}{8}$...14 $\frac{1}{8}$	7 $\frac{3}{8}$...4 $\frac{3}{4}$	4 $\frac{1}{2}$... 6 $\frac{3}{4}$	Four	British Museum (Hume Collection).
17 ...11 $\frac{3}{4}$	6 $\frac{3}{4}$...5	6 ... 8 $\frac{1}{2}$	Do.	British Museum.

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. le Duc d'Orléans.
32	24	7 $\frac{1}{4}$	38	Do.
29 $\frac{1}{2}$	23 $\frac{1}{4}$	8	48 $\frac{5}{8}$	British Museum.
♀ 12 $\frac{5}{8}$	10 $\frac{1}{2}$	4 $\frac{1}{4}$	17 $\frac{1}{4}$	Do.



Head of 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. Possibly the genus should be placed in the neighbourhood of the takin (p. 349). 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. Two races are known—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. (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, in lat. $32^{\circ} 27'$; approximate southern limit lat. 40° N.

A.—CANADIAN RACE (Ovibos moschatus typicus).

Length on outside curve.	Breadth of Palm.	Tip to Tip.	Locality.	Owner.
$-30\frac{1}{4}$	$13\frac{3}{4}$	$30\frac{1}{4}$	?	W. W. Hart.
$-28\frac{3}{4}$	$13\frac{1}{2}$	$23\frac{3}{4}$	?	G. L. Harrison.
$27\frac{3}{4}$	10	$27\frac{1}{2}$	Barren grounds of Northern Canada	David T. Hanbury.
$27\frac{1}{2}$	10	$23\frac{1}{2}$	Do.	H. Darrell.
$-27\frac{1}{2}$	$11\frac{3}{4}$	23	Do.	Caspar Whitney.
$27\frac{1}{4}$	$12\frac{1}{2}$	27	Do.	Earl of Lonsdale.
$-27\frac{1}{4}$	$10\frac{5}{8}$	$27\frac{1}{2}$	Do.	Imperial Museum, Vienna.
$26\frac{7}{8}$	11	27	Do.	Warburton Pike.
$26\frac{3}{4}$	$12\frac{3}{8}$	...	North America	British Museum (J. Rae).
$26\frac{1}{4}$	$13\frac{1}{8}$	$27\frac{5}{8}$	Do.	British Museum.
$-25\frac{5}{8}$	10	25	Do.	Dr. Albert von Stephani.
$24\frac{3}{4}$	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	$9\frac{3}{4}$	$23\frac{1}{8}$	North America	Sir Edmund G. Loder, Bart.
-24	...	25	?	Major W. Anstruther Gray.
$23\frac{1}{4}$	6	$22\frac{3}{4}$	?	A. Barclay Walker.
23	7	$21\frac{1}{2}$	?	Edinburgh Museum.
$-21\frac{1}{2}$	9	27	?	Dublin Museum.
♀ $-21\frac{1}{8}$	$4\frac{3}{4}$	$20\frac{5}{8}$	?	Imperial Museum, Vienna.
♀ $18\frac{5}{8}$	$4\frac{1}{4}$	...	North America	British Museum (A. G. Dallas).
♀ -17	$4\frac{5}{8}$	$9\frac{7}{8}$	Do.	Dr. Albert von Stephani.

B.—GREENLAND RACE (Ovibos 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	Rowland Ward.
♀ $24\frac{1}{2}$	$7\frac{1}{4}$	27	Do.	Do.

- Owner's measurements.



Horns of Cape Buffalo (Mr. F. H. Barber's specimen).

The AFRICAN BUFFALO (*Bos* [*Bubalus*] *caffer*).

Gdmoos of the Sudanese.

Mbogo and *Nyati* of the Swahilis.

Gädärs of the Gallas.

Nadi in Barotsiland and Ngami-land.

Inyati of the Swazis and Zulus.

Mboa and *Nyati* in the Chilala and Chibisa countries.

Nari of the Basutos.

Among the distinctive features of the typical race of this fine species, 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.

A.—CAPE BUFFALO (*Bos caffer typicus*).

Distribution.—Southern Africa from the Cape to the southern bank of the Congo on the west side, and approximately some distance south of the Victoria Nyanza on the east side of the continent. 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. Save for 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. Buffalo are even rare and local in British East Africa, where, as in other districts on the eastern side of the continent, the rinderpest some years ago played havoc with the herds. Some of the East African specimens may belong to a separate race.



The Record Buffalo. Shot by F. A. Knowles in Uganda.

Greatest Width.		Tip to Tip.	Width of Palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.				
53	49	47½	...	Uganda . . .	F. A. Knowles. (See illustration.)
49	44½	40½	11¼	Limpopo . . .	Sir Richard Glyn, Bart.
48½	44	35½	9¾	Chiromo, B. C. A. . .	Hon. Walter Rothschild.
48¼	43	30½	11¼	Sabi River . . .	F. H. Barber. (See illustration.)
48	43	...	...	Pungwe . . .	F. Lean.
47¾	43¾	39¾	13	?	P. C. Keytel.

- Owner's measurements.

RECORDS OF BIG GAME

Greatest Outside.	Width. Inside.	Tip to Tip.	Width of Palm measured on face of horn.	Locality.	Owner.
47½	42	37½	11½	Ngamiland . .	Mervyn G. Williams.
47	40½	...	12¼	East Africa . .	F. J. Jackson.
46½	42½	41½	10	Do. . .	The late Capt. A. J. Whittle.
46½	44¼	37½	6½	Pungwe . . .	C. M. Swire.
46¼	43	42½	10¼	East Africa . .	Baron Maurice de Rothschild.
46	40½	36	10	Do. . .	Lord Hindlip.
45¾	41	27¾	8	Pungwe . . .	Julius Jeppe.
45¾	41¼	37½	...	South Africa . .	British Museum.
45¾	40	28¾	12	Nyasaland . .	F. Vaughan Kirby.
45½	40	27¾	11	East Africa . .	Capt. D. H. Macdonell.
45½	...	...	11½	Kilimanjaro . .	H. C. V. Hunter.
45¼	40¾	32¾	9	Tana River . .	Capt. H. De Prée.
-45	39¾	36½	14	East Africa . .	Count Scheibler.
44¾	39½	27½	11¼	Do. . .	Sir Robert Harvey, Bart.
44½	39¼	29	12	Pungwe . . .	F. S. Staples.
44½	39¼	29	15	Chobi River . .	F. C. Selous.
44½	...	37½	12	East Africa . .	F. Charrington.
44¼	39	31¼	10	South Africa . .	J. B. Taylor.
44	40¼	37¾	12	East Africa . .	Rear-Adm. R. A. J. Montgomerie.
-44	40	...	11½	South Africa . .	J. Lamont.
-44	40	30½	11½	Angola . . .	E. P. Cooper.
44	39	29½	9½	East Africa . .	N. A. Kenyon Slaney.
43¾	37¾	26½	12¾	Do. . .	Hon. Walter Rothschild.
43½	41	41	10	Do. . .	A. E. Butter.
43½	38½	25½	9	Pungwe . . .	H. R. Holden.
43¼	38¼	24¼	13¼	South Africa . .	Sir John Willoughby, Bart.
43	38½	36	11	N.W. Rhodesia . .	Col. C. Harding.
43	37¾	29¾	14	South Africa . .	C. D. Rudd.
43	37½	26¾	10	Do. . .	W. A. Simpson Hinchliffe.
43	38	30½	11	Lake Ngami . .	Capt. J. P. Grenfell.

- Owner's measurements.

CAPE BUFFALO

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Greatest Width.		Tip to Tip.	Width of Palm measured on face of horn.	Locality.	Owner.
Outside.	Inside.				
42 $\frac{3}{4}$	38	33 $\frac{3}{8}$	9 $\frac{3}{4}$	East Africa . .	E. J. L. Berkeley.
42 $\frac{1}{2}$	39 $\frac{3}{4}$	40	8 $\frac{1}{2}$	Do. . .	Prince P. Demidoff.
42 $\frac{1}{2}$	39 $\frac{1}{2}$	40 $\frac{1}{2}$	11 $\frac{3}{4}$	Do. . .	B. Eastwood.
42	38	35 $\frac{1}{4}$	9	Do. . .	Lord Delamere.
4 $\frac{1}{2}$	37 $\frac{3}{8}$	26 $\frac{1}{4}$	11	Pungwe . .	Capt. F. H. Lehmann.
42	37	30 $\frac{1}{4}$	10 $\frac{1}{4}$	Barotsiland . .	E. D. Scott.
42	38	35 $\frac{1}{2}$	10	Do. . .	R. C. Forster.
41 $\frac{1}{2}$	37 $\frac{3}{4}$	34 $\frac{1}{2}$	10	Pungwe . .	R. H. Venables Kyrke.
41 $\frac{1}{2}$	36 $\frac{7}{8}$	28	...	South Africa . .	British Museum.
41	36 $\frac{1}{2}$	33 $\frac{1}{4}$	11	East Africa . .	R. W. Duff.
41	35 $\frac{1}{2}$	24 $\frac{3}{4}$	16 $\frac{1}{2}$	Do. . .	F. C. Selous.
41	36 $\frac{3}{4}$	37	11	Zambesia . .	Capt. A. T. Hunt, R.N.
41	36 $\frac{1}{2}$	26 $\frac{1}{2}$	9 $\frac{1}{2}$	Pungwe . .	Major Lord Douglas Compton.
♀ 40	35 $\frac{1}{4}$	26 $\frac{1}{2}$	7	South Africa . .	F. C. Selous.
♀ - 38 $\frac{1}{4}$	33 $\frac{3}{4}$	27	6 $\frac{1}{4}$	?	P. C. Keytel.

- Owner's measurements.



Skull and Horns of Abyssinian Buffalo.

B.—ABYSSINIAN BUFFALO (*Bos caffer æquinoctialis*).

A smaller animal than the last (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. In East Africa occurs another race (*B. caffer radcliffei*), in which the horns are much flatter and less rugged than in the southern race, a circumstance which tends to confirm the view that the present animal should be regarded as a variety rather than as a species.

Distribution.—From Abyssinia and southern Somaliland through the Egyptian Sudan for a considerable distance up the White Nile; but the southern limits, if definable, not yet determined.

Greatest Width. Outside.	Inside.	Tip to Tip.	Width of Palm.	Locality.	Owner.
44	42½	43	8½	White Nile . .	P. Niedieck.
40	39	39	10	Do. . .	Lieut.-Col. J. W. Yardley.
40	37	32	11¼	Abyssinia . .	E. Lort-Phillips.
39	36	33¾	10	White Nile . .	W. F. Wailes-Fairbairn.
38¾	33	25¼	12	Do. . .	Douglas M'Douall.

Greatest Outside.	Width. Inside.	Tip to Tip.	Width of Palm.	Locality.	Owner.
38 $\frac{3}{4}$	35 $\frac{1}{2}$	35 $\frac{1}{8}$	9 $\frac{1}{4}$	White Nile . . .	Sir W. Garstin.
38 $\frac{1}{4}$	34 $\frac{7}{8}$	32 $\frac{1}{4}$	8 $\frac{3}{4}$	Do. . . .	R. M'D. Hawker.
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.
36 $\frac{1}{2}$	33	30 $\frac{1}{2}$	9 $\frac{1}{2}$	Sudan	Col. A. Colville.
36 $\frac{1}{2}$	31 $\frac{3}{4}$	29	9	Do. . . .	Capt. the Hon. M. P. Macnaghten.
36 $\frac{1}{2}$	31 $\frac{1}{4}$	24 $\frac{1}{4}$	8 $\frac{1}{2}$	Do. . . .	Count E. Hoyos.
36 $\frac{1}{4}$	32	22 $\frac{5}{8}$	8 $\frac{1}{2}$	White Nile . . .	H. E. Allen.
-36	32 $\frac{1}{4}$	27	8 $\frac{1}{4}$	Sudan	Prince Henry of Liechtenstein.
35 $\frac{3}{4}$	32	9	30 $\frac{1}{2}$	Do. . . .	R. A. Colvin.
35 $\frac{1}{2}$	31 $\frac{5}{8}$	28 $\frac{1}{4}$	8 $\frac{3}{4}$	White Nile . . .	E. N. Buxton.
35 $\frac{1}{2}$	32 $\frac{1}{2}$	31 $\frac{1}{4}$	7 $\frac{3}{4}$	Do. . . .	S. H. Whitbread.
35 $\frac{1}{4}$	30 $\frac{5}{8}$	21 $\frac{3}{4}$	9 $\frac{3}{8}$	Do. . . .	Capt. H. R. Headlam.
-35	31	29	10	Sudan	Sir W. Gordon Cumming, Bart.
34 $\frac{1}{2}$	29 $\frac{1}{2}$	23 $\frac{5}{8}$	7 $\frac{1}{2}$	White Nile . . .	C. Liddell.
33 $\frac{1}{2}$	30 $\frac{1}{4}$	29 $\frac{1}{2}$	9	Blue Nile . . .	G. L. Harrison.
33	28 $\frac{3}{4}$	23 $\frac{1}{2}$	8 $\frac{1}{4}$	White Nile . . .	Count C. Hoyos.
33	27 $\frac{1}{2}$	18 $\frac{3}{8}$	9 $\frac{1}{2}$	Do. . . .	H. F. Buxton.
32 $\frac{3}{4}$	29 $\frac{1}{4}$	26 $\frac{1}{4}$	8 $\frac{1}{2}$	Do. . . .	C. Adeane.
♀ 32 $\frac{1}{2}$	29 $\frac{5}{8}$	24 $\frac{1}{2}$	5 $\frac{1}{4}$	Do. . . .	H. Cookson.
32	27	24	8 $\frac{1}{2}$	River Dinder . . .	Capt. J. S. Cavendish.
31 $\frac{3}{8}$	26 $\frac{7}{8}$	24 $\frac{3}{8}$	...	Bogosland . . .	British Museum.

- Owner's measurements.



Horns of old Male Senegambian Buffalo, from the type specimen in the British Museum.

C.—SMALLER AFRICAN BUFFALOES.

Bona of the Hausas.

Lake Tchad Buffalo (*Bos caffer brachyceros*).

Senegambian Buffalo (*Bos caffer planiceros*).

Dwarf Congo Buffalo (*Bos caffer nanus*).

Despite the enormous differences, alike in size, colour, and the form of the horns, between the little red buffalo of the Congo and its gigantic black cousin of the Cape, such a gradual and apparently complete transition can be traced from the one type to the other, that both seem local modifications of one very variable animal. 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 Gaboon and Gambia; but in the interior of Senegambia it apparently passes into the larger brown buffalo, with more laterally expanded and recurved horns, known as *B. caffer planiceros*. And this latter is, in its turn, very close to the Abyssinian buffalo (*B. caffer equinoctialis*) of North-East Central Africa, which is nearly allied to the typical Cape form. Another type is indicated by the Lake Tchad buffalo (*B. caffer bracyeros*), first dis-

covered by Denham and Clapperton. In height the Congo dwarf buffalo only reaches some 42 inches at the shoulder.



Skull and Horns of Congo Buffalo, from Col. A. J. Arnold's specimen.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
23½	15	10	Gold Coast . . .	Major G. S. C. Jenkinson.
23½	20	16¼	Do.	G. W. Dawes.
23½	15¾	11	Do.	Dr. Albert von Stephani.
23	16½	8¼	Nigeria	Julius Jeppe.
22¾	16½	12	Ashanti	C Beddington.
22½	17	14	Gold Coast . . .	T. W. C. Carthew.
22	14	15	Congo	H. M. Stephenson.
21¾	15¾	4	Nigeria	Major C. A. Wilding.
21½	12¾	2¼	West Africa . . .	British Museum.
21	15	9¼	Nigeria	A. Ohlsson.
21	17½	16¼	Do.	Capt. J. F. Loder-Symonds.
20½	16½	10	Do.	Major D. F. MacCarthy Morrogh.
20½	15	11	Benue	E. J. Wolseley.
19	10	...	Lake Tchad . . .	Hon. Walter Rothschild.
18¾	11½	3½	Nigeria	W. H. Broun.

- Owner's measurements.

RECORDS OF BIG GAME

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
18½	12	6¾	Gambia . . .	H. C. Goddard.
18¼	10¾	5½	Central Africa . . .	British Museum (Capt. Denham and Col. Clapperton).
18	16½	17½	Victoria Island, Lower Niger	Capt. R. H. Monck-Mason.
17¾	16	14½	Nigeria . . .	G. F. Phillips.
17½	10	4½	Gambia . . .	Sir Edmund G. Loder, Bart.
17½	10	4	Senegambia . . .	Julius Jeppe.
17	17	10¾	Sierra Leone . . .	Capt. C. E. Palmer.
♀ 13	10½	10½	Do. . . .	Julius Jeppe.
♀ 11½	9½	...	Lokoja . . .	British Museum (Col. A. J. Arnold).
♀ 11	8½	10	West Africa . . .	Sir Edmund G. Loder, Bart.
♀ 9½	7¾	8½	Do. . . .	Hon. Walter Rothschild.



Head of Indian Buffalo. Shot by the 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 is the tawny Assam buffalo (*B. b. fulvus*), whose horns are like those of the first race. Height at shoulder about 6 feet 2 inches; girth behind shoulder, 10 feet 8 inches. In a bull shot by the 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. Smaller varieties in Ceylon and some of the Malayan islands. 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 $\frac{3}{4}$	17 $\frac{3}{4}$	...	...	...	?	British Museum (Sloane Collection).
-71	21 $\frac{1}{2}$	34 $\frac{3}{4}$	60	...	Assam	Measured by A. O. Hume; shot by A. Forbes.
♀-70 $\frac{1}{2}$	18	...	64	78	Do.	The late Sir A. Campbell-Orde.
70	18 $\frac{1}{2}$	60	67 $\frac{3}{4}$	72	Do.	J. H. Whitehouse.
65 $\frac{3}{4}$	20 $\frac{1}{4}$	...	..	...	Do.	British Museum (Col. J. Mathie).
♀-64 $\frac{1}{2}$	18	42 $\frac{1}{2}$	60	96	Do.	J. Campbell of Kilberry.
-63	18	...	...	60	Do.	Sir A. Campbell-Orde.
62	17	101	...	...	Do.	Hon. Walter Rothschild.
♀ 61 $\frac{7}{8}$	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 . .	Capt. B. Vincent.
60	20	40	52	...	?	Sir Edmund G. Loder, Bart.
-59 $\frac{1}{2}$	15	...	53	59	?	Sir Savile Crossley, Bart.
♀-57 $\frac{1}{2}$	15 $\frac{3}{4}$	95 $\frac{1}{2}$	...	96 $\frac{1}{2}$	Cooch Behar	H.H. the Maharaja of Cooch Behar.
-57	18	...	...	...	Central Provinces . .	J. D. Inverarity,
57	18 $\frac{1}{2}$	41 $\frac{1}{2}$	60	...	Do.	Col. G. D. F. Sulivan.
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	A. O. Hume.
-56	18	29 $\frac{1}{2}$	...	57 $\frac{1}{2}$	?	J. Whitaker.
♀ 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. Monteatth.

- Owner's measurements.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
56	18 $\frac{1}{4}$	108	...	...	Assam . . .	H. R. H. le Duc d'Orléans.
55 $\frac{1}{2}$	18 $\frac{1}{2}$	29	44	...	?	J. Carr Saunders.
♀ 55 $\frac{1}{4}$	14 $\frac{1}{4}$	41	54 $\frac{1}{2}$	58	Assam . . .	T. Briscoe.
♀ -55	13 $\frac{1}{2}$	...	...	...	Bhutan Duars .	Major-Gen. A. A. A. Kinloch.
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 . . .	A. O. Hume.
54 $\frac{1}{2}$	19	50	59	64	?	Viscount Powerscourt.
-54	23	39	...	59 $\frac{1}{2}$	Burma . . .	Pegu Club, Rangoon.
¹ 53 $\frac{1}{8}$	23 (6 ft. 2 $\frac{1}{2}$ ins. at shoulder)	30	42 $\frac{1}{2}$	...	Cooch Behar . .	H. H. the Maharaja of Cooch Behar.
-53 $\frac{3}{8}$	12 $\frac{3}{8}$	31	...	...	Java . . .	Dr. Albert von Stephani.
53	19	36 $\frac{1}{2}$	48 $\frac{3}{4}$	56	?	Col. H. Lysons.
-51 $\frac{3}{4}$	13 $\frac{1}{4}$	71 $\frac{1}{4}$	...	...	?	Imperial Museum, Vienna.
51 $\frac{3}{4}$	18 $\frac{1}{2}$	22	38 $\frac{1}{4}$	...	Assam . . .	Sir Peter Walker, Bart.
-51 $\frac{3}{8}$	19 $\frac{3}{8}$	45 $\frac{3}{8}$	50	...	Central Provinces .	P. H. G. Powell-Cotton.
51	21 $\frac{1}{4}$	36	46	53	Burma . . .	Lord Granville Gordon.
50 $\frac{3}{4}$	18 $\frac{3}{8}$	54 $\frac{1}{2}$	60 $\frac{1}{4}$	65	Patna . . .	Brig.-Gen. F. H. Whitby.
♀ 50 $\frac{1}{2}$	14 $\frac{3}{4}$	40 $\frac{1}{4}$	59	...	Central Provinces .	The late Col. M. M. Bowie.
-50 $\frac{1}{2}$	20	64	...	...	Do. . .	Capt. H. De Prée.
50	18 $\frac{1}{2}$	48 $\frac{1}{2}$	60	...	Do. . .	Major C. F. Pinney.
50	13 $\frac{1}{4}$	33	38 $\frac{1}{2}$	...	Assam . . .	Noel Fenwick.
50	17	31 $\frac{3}{4}$	50	...	Do. . .	Lieut.-Col. D. M. Lumsden.
50	19 $\frac{1}{2}$	36 $\frac{1}{2}$	46	52 $\frac{1}{2}$	Do. . .	A. Ezra.
-49 $\frac{3}{4}$	17 $\frac{1}{4}$	16 $\frac{1}{4}$	37	...	Cooch Behar . .	Count Scheibler.
-49 $\frac{1}{2}$	18 $\frac{1}{2}$	45 $\frac{1}{2}$	49 $\frac{1}{2}$	...	Central Provinces .	A. P. Percival.
♀ 49 $\frac{1}{2}$	14	40 $\frac{1}{2}$	47 $\frac{3}{4}$	52 $\frac{1}{4}$	Assam . . .	E. W. Dixon.
48 $\frac{1}{4}$	19 $\frac{3}{4}$	...	...	...	Siam . . .	J. H. Thurston.

- Owner's measurements.

¹ Measured round outside curves across skull, 9 ft. 11 $\frac{1}{8}$ ins. Another pair, 10 ft. 5 ins., circumference of horn at base 21 inches.

The following specimens are mostly from Ceylon :—

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
♀ 35	9½	31¼	37¼	...	Ceylon . . .	R. Wahrmann.
34¼	15¼	25¾	35	...	Do. . . .	Earl Cairns.
♀ 33¼	9	31½	37	...	Do. . . .	Do.
33¼	13	32¼	38	43	Do. . . .	Capt. F. H. N. Pym.
31¼	16	28	...	38½	Do. . . .	Marquis Camden.
31½	15½	27	34	38	Do. . . .	P. Niedieck.
31½	16	...	47¼	...	South Australia (introduced)	H. L. Heber Percy.
♀ -28	9¾	18¼	26	31½	Ceylon . . .	H. M. Von Archer.
♀ -27¼	9½	15	25	29¼	Do. . . .	H. R. H. Prince Pedro d'Orléans et Braganza.

- Owner's measurements.



Head of Anoa, from life.

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. There may be two races.

Distribution.—The island of Celebes.

Length on front curve.	Circumference.	Tip to Tip.	Owner.
—15 $\frac{3}{8}$	7 $\frac{1}{8}$	7 $\frac{1}{2}$	Paris Museum.
¹ —13 $\frac{1}{2}$	9 $\frac{1}{4}$	5	Jesuit College, Manila.
12 $\frac{3}{8}$	6	6 $\frac{1}{2}$	British Museum.

— Owner's measurements.

¹ Measured by Rear-Admiral R. A. J. Montgomerie.

RECORDS OF BIG GAME

Length on front curve.	Circum- ference.	Tip to Tip.	Owner.
10½	6¼	7	Carl Hagenbeck.
10	6	5½	Sir Edmund G. Loder, Bart.
10	5¾	5¾	Sir Victor Brooke's Collection.
-9¾	5½	7¼	Dr. Albert von Stephani.
¹ -9½	5½	4½	Do.
-9½	8½	8½	Dublin Museum.

- Owner's measurements.

¹ *Bos mindorensis*.



Skull and Horns of Bull and Cow Bison, shot by Mr. St. George Littledale.

EUROPEAN BISON (*Bos [Bison] bonasus*).

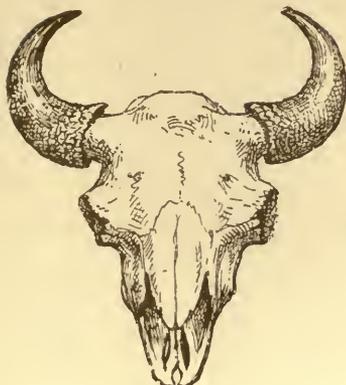
The great elevation of the fore-quarters, the mass of long hair clothing the head, shoulders, and fore-part of the body, together with the peculiar form of the head and horns, the latter of which are cylindrical, serve at once to distinguish the bison from the other members of the ox tribe. There is also a difference in the number of ribs between the bison and the more typical oxen, the number in the former varying from 14 to 15 pairs. 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 difference may be noted between Caucasian and Lithuanian specimens, but it is doubtful whether these are sufficient to indicate a racial distinction. Height at shoulder 6 feet 1 or 2 inches. In a bull killed by Mr. St. George 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.

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, so commonly misapplied to the bison, belongs to the extinct wild ox of Europe.

RECORDS OF BIG GAME

Length on outside curve.	Circum- ference.	Tip to Tip.	Widest inside.	Locality.	Owner.
18½	12½	13¾	19½	Lithuania . .	British Museum (Czar of Russia).
-18·2	10·8	17·5	20·14.	Do. . .	Prince Henry of Liechtenstein.
-18	12½	16	20	Caucasus . .	St. George Littledale.
17½	10	18½	...	Lithuania . .	Major Algernon Heber-Percy.
17·4	13·3	13·4	20·10	Do. . .	Prince Henry of Liechtenstein.
16¾	12¼	21⅞	24¼	?	Sir Edmund G. Loder, Bart.
♀ 16	8¼	12	...	?	Science and Art Museum, Edin- burgh.
-15¾	12⅝	21¼	...	Lithuania . .	Imperial Museum, Vienna.
♀ 15¼	8	6	...	?	Major Algernon Heber-Percy.
♀ 13	8½	9¾	14	Caucasus . .	St. George Littledale.

- Owner's measurements.



Skull and Horns of American Bison.

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 athapascæ*) of the forest highlands of the North-West.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside spread.	Locality.	Owner.
-21½	15¼	...	35 outside	Northern Montana	W. F. Sheard.
20¾	15	...	30½	Wyoming . . .	Hon. F. Thellusson.
-20¼	16⅝	33½	...	?	W. H. Root.
-19	12½	...	...	W. Montana . . .	P. Liebinger.
-18½	15	25	...	Wyoming . . .	P. N. Graham.
-18	14	...	...	Montana . . .	F. Sauter.
17¾	12¾	15½	...	?	H.R.H. the Duke of Saxe-Coburg and Gotha.

- Owner's measurements.

RECORDS OF BIG GAME

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside spread.	Locality.	Owner.
17½	12½	...	...	S.W. Montana . . .	President Roosevelt.
17½	12	...	25½	Wyoming	H.R.H. le Duc d'Orléans.
17½	13½	21	...	?	Viscount Powerscourt.
17¾	11¾	10¾	17¾	?	British Museum.
17	14	17½	...	Yellowstone, Montana	Count E. Hoyos.
16¾	12¼	20¾	...	Wyoming	Dr. Albert von Stephani.
16¾	13	19½	...	Nebraska	Imperial Museum, Vienna.
16¾	14¼	24	...	Bighorn Mts., Wyoming	Earl of Lonsdale.
16½	12½	19¾	...	Colorado	Sir Edmund G. Loder, Bart.
16¼	13½	14¼	...	?	Duke of Portland.
16¾	15¾	25¾	...	Colorado	Sir Edmund G. Loder, Bart.
15·8	12·14	15	...	Indian Territory near Texas	Prince Henry of Liechtenstein.
15¾	14	27¾	...	N.W. Territory . . .	E. G. Jenkins.
15½	14¾	...	19¾	Wyoming	St. George Littledale.
15¾	10¾	15½	...	Do.	Abel Chapman.

- Owner's measurements.



Skull and Horns of Wild Yak. From a specimen in the British Museum, presented by Mr. A. O. Hume.

The YAK (*Bos* [*Poephagus*] *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 (Major 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 Kansu province of China and Northern Ladak, at elevations between about 14,000 and 20,000 feet. The peculiar grunting cry from which the animal takes its name is developed only in the domesticated breed.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
-39	...	...	?	Lucknow Museum.
-38 $\frac{3}{4}$	18 $\frac{1}{2}$	26 $\frac{1}{4}$	Kuenlun Mts. . . .	A. O. Hume (shot by late A. Dalgleish).
38 $\frac{1}{4}$	17	19	Do. . . .	Brit. 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.
-33	16	18	Do. . . .	S. H. Charrington.
-32 $\frac{3}{4}$	13 $\frac{1}{2}$	19	Tibet	B. H. Shaw-Stewart.
-32 $\frac{3}{4}$	16 $\frac{1}{4}$	18 $\frac{3}{4}$	Do. . . .	Major H. M. Biddulph.
-32 $\frac{3}{4}$	14	17 $\frac{1}{2}$	Do. . . .	P. H. G. Powell-Cotton.
32 $\frac{1}{2}$	16	25	Do. . . .	Sir Edmund G. Loder, Bart.
32	13 $\frac{5}{8}$	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. . . .	D. L. R. Lorimer.
-31 $\frac{7}{8}$	14 $\frac{1}{4}$	18 $\frac{1}{4}$	Chang Chenmo . . .	P. H. G. Powell-Cotton.
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. . . .	Major H. W. Codrington.
31 $\frac{1}{4}$	14 $\frac{1}{2}$	16 $\frac{3}{4}$	Do. . . .	Major E. F. Coates.
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.

- Owner's measurements.

Length on outside curve.	Circum- ference.	Tip to Tip.	Locality.	Owner.
30 $\frac{3}{4}$	13 $\frac{1}{2}$	10 $\frac{1}{2}$	Ladak . . .	Sir Robert Harvey, Bart.
♀ 30 $\frac{3}{4}$	13	20	Do. . . .	Capt. L. Oldfield.
♀ 30	11 $\frac{1}{4}$	45 $\frac{1}{2}$	Tibet	Duke of Bedford.
30	14 $\frac{1}{4}$	19 $\frac{3}{4}$	?	Major Sir W. R. Codrington.
30	13	15 $\frac{1}{4}$	Chang Chenmo . . .	H. Z. Darrah.



Skull and Horns of Gaur shot by H.H. the Maharaja of Cooch Behar.

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 very strongly developed, but the most distinctive feature of the animal is the great arch on the crown of the head

between the horns, which bends forward to communicate a concave profile to the forehead. 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 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.

Distribution.—The forest hill-tracts of Pensinsular India, Assam, Burma, 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. In the Malay countries the species is known as the sladang or saladang.

Widest outside.	Circumference at base.	Tip to Tip.	Widest inside.	Length on outside curve of longest horn.	Locality.	Owner.
-46	20½	33	40	...	Malay States	H. Da. Prah.
44¼	21	29½	38¼	33½	Burma	J. McF. Petters.
-43½	17¾	28¾	...	...	Travancore	H.H. Maharaja of Travancore.
43	20	31	38	32	Cooch Behar	Maharaja of Cooch Behar.
-43	20½	18¾	...	39¼	Salwin, Burma	Bombay Natural History Society's Museum.
43	17	32½	...	29½	Coimbatore, S. India	P. Church.
43	19¾	34½	...	28	Upper Burma	The late C. W. A. Bruce.
42½	18½	25	33¼	33½	Travancore	Capt. T. W. Greenfield.
42½	19½	31	35¾	31¼	Madras	Major T. J. R. Lucas.
-42	22	29½	...	...	Do.	C. W. G. Morris.
-41½	17	...	...	33	Burma	S. E. F. Jenkins.
41½	16	30	...	29	Assam	A. J. Walter.
41½	19¾	26½	36	31	Mysore	C. P. Graham.
41¼	20	32½	36¼	30	?	J. F. Bryant.
41	18	24	...	33¾	Madura District	Bethnal Green Museum (J. D. Goldingham).
-41	16	...	38	30	Central Provinces	Lieut.-Col. J. W. H. Flanagan.
41	20	34½	36½	27	Siam	J. H. Thurston.

- Owner's measurements.

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Widest outside.	Circumference at base.	Tip to Tip.	Widest inside.	Length on outside curve of longest horn.	Locality.	Owner.
41	19 $\frac{3}{4}$	37	...	27 $\frac{3}{4}$	Kalkerry, S. India	Lieut.-Col. W. E. Fairholme.
40 $\frac{1}{2}$	20	25	...	34 $\frac{3}{4}$	Vardi Mullay	Baron von Massow.
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. M'D. Hawker.
39 $\frac{1}{2}$	20	25 $\frac{1}{4}$	33 $\frac{1}{2}$	31	Anamalties	C. W. Wood.
38 $\frac{3}{4}$	17 $\frac{1}{2}$	25 $\frac{3}{4}$	32 $\frac{3}{4}$	30	?	A. H. Sharp.
38 $\frac{1}{4}$	17 $\frac{3}{4}$	28 $\frac{1}{2}$	33 $\frac{1}{2}$	27 $\frac{3}{4}$	Cooch Behar	H. R. Beaumont.
38	18	22 $\frac{1}{2}$	33	31 $\frac{3}{4}$	Madras	S. Cox.
38	19	18	31	34 $\frac{1}{2}$	?	Sir Edmund G. Loder, Bart.
37 $\frac{1}{2}$	19 $\frac{1}{2}$	24 $\frac{1}{4}$	30 $\frac{3}{4}$	31	Mysore	Viscount Powerscourt.
37 $\frac{1}{2}$	18	19	32 $\frac{1}{4}$	31	?	Colonel Baillie.
37 $\frac{1}{4}$	20	25	31 $\frac{1}{4}$	29	Chutia Nagpur District	Lieut.-Col. J. W. Yardley.
36 $\frac{1}{2}$	21 $\frac{1}{2}$	22 $\frac{1}{4}$	29 $\frac{3}{4}$	28	Pahang	T. Scott Mason.
36 $\frac{1}{2}$	17 $\frac{1}{2}$	17	...	28	Mysore	Major G. H. Evans.
36 $\frac{1}{2}$	18 $\frac{1}{4}$	26 $\frac{3}{4}$	...	26 $\frac{1}{2}$	?	Lieut.-Col. R. H. Fraser.
36	17 $\frac{1}{4}$	23 $\frac{1}{4}$	29 $\frac{1}{2}$	28	S. India	Capt. C. S. Timins.
36	19 $\frac{1}{2}$	15 $\frac{1}{4}$	29	34	?	Col. F. J. Eveleigh.
35 $\frac{3}{4}$	17	24 $\frac{3}{4}$	30	27	?	W. A. Conduitt.
35 $\frac{1}{2}$	16	18	31	25 $\frac{1}{2}$	?	E. R. Collins.
35 $\frac{1}{2}$	17 $\frac{1}{2}$	21 $\frac{1}{2}$	29 $\frac{3}{4}$	29 $\frac{1}{2}$	C. Provinces	W. J. Considine.
35	19 $\frac{1}{2}$	21	28 $\frac{3}{4}$	30 $\frac{3}{4}$	Perak	F. O. B. Dennys.
-34	17 $\frac{3}{4}$	24	...	...	Malay States	T. R. Hubback.
♀ 27	13 $\frac{1}{4}$	13	22	24	N. Travancore	A. O. Hume.

- Owner's measurements.



Skull and Horns of Cow Gaur, from Mr. A. O. Hume's specimen.

Widest inside, ¹	Circumference at base.	Tip to Tip.	Length on outside curve of longest 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.
36	17 $\frac{1}{4}$	27	26	Do.	The late Col. M. M. Bowie.
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.

- Owner's measurements.

¹ Please note these measurements are inside.

RECORDS OF BIG GAME

Widest inside, ¹	Circumference at base.	Tip to Tip.	Length on outside curve of longest horn.	Locality.	Owner.
34½	18	23½	33½	Cooch Behar	Maharaja of Cooch Behar.
34	18¼	20¼	27½	Travancore	Lt.-Col. the Hon. E. Baring.
34	15¾	24¾	24½	?	Capt. H. De Prée.
34	19	27	24	Burma	W. F. Loftus-Tottenham.
33¾	18	23¾	25	Kanara	Major G. J. Fitzgerald.
33½	18	15¾	28½	Travancore	Capt. H. L. Cottingham.
33½	15	22	23	Assam	Col. E. T. Paul.
32¾	17⅞	32¼	27⅞	Central Provinces	Major C. S. Cumberland.
32¾	18½	23¾	26	Do.	Major G. de H. Smith.
32½	19	16½	26	Do.	Capt. C. F. Pinney.
32½	17⅞	21¾	31¾	Travancore	A. O. Hume.
32¼	17½	20½	33	?	Major P. Z. Cox.
32	19¼	18¼	39	N. Travancore	A. W. Turner.
♀ 22	10½	14¾	22	?	Capt. H. De Prée.
♀ ...	11½	...	19½	N. Kanara	Lieut.-Col. L. L. Fenton.
♀ 15½	12	2¼	23½	Mysore	Major H. S. Wood.

- Owner's measurements.

¹ Please note these measurements are inside.

Measurements of entire specimens kindly furnished by H. H. the 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.	Hds. ins.	Height at the Hump.	Total length of Animal between Sticks.		Length of Body between Sticks.		Girth just behind Shoulder.	REMARKS.
									ft. ins.	ins.	ft. ins.	ins.		
Bull	...	84	21	31½	43	18 2½	19 3	12 3	12 3	9 5	118	Record head shot Cooch Behar.		
"	3½	81½	18½	23½	40½	18 3½	20 3	12 3½	12 3½	9 4½	120			
"	30½	78½	19½	23½	39	18 3	19 3½	12 2	12 2	9 5½	120			
"	...	77	18½	...	...	17 3½	18 3½	12 2	12 2	9 1½	112	
"	30½	76½	18	24½	39½	18 0½	19 1	12 1½	12 1½	9 3	115			
"	30½	76½	20½	26½	39	18 3½	20 0½	12 3½	12 3½	9 6½	124	Record bull as regards bulk and height.		
"	26½	69½	18½	30½	39½	18 3½	19 0½	...	...	...	...
Cow	...	73½	...	...	...	17 1½	17 3	...	...	...	90	Record cow's head—looked like a bull a little way off.
"	...	71½	...	...	...	...	...	...	...	...	...
"	...	70	...	...	...	...	...	...	...	...	...



Skull and Horns of Gayal, from Mr. A. O. Hume's specimen.

The GAYAL or MITHAN (*Bos [Bibos] frontalis*).

The gayal is a rather smaller animal than the gaur, of a blacker colour, with a large dewlap, and with a straight line between the bases of the massive horns, which are more divergent, less curved upwards, more nearly cylindrical in section, and of a darker colour. The head, too, is much shorter, with the forehead very broad and flat. It is probably only a domesticated race of the gaur, as there are indications of a transition in the form of the skull between the two: if this be so, it is not entitled to rank as a species.

Distribution.—Kept in a semi-domesticated condition by many of the hill-tribes of Assam and Chittagong, it has been stated to be wild in Tenasserim, but there is no evidence that such reported wild herds may not be the descendants of domesticated animals.

Length on outside curve.	Circumference.	Tip to Tip.	Locality.	Owner.
15	11½	26¾	?	British Museum.
14½	13½	28	Tenasserim . . .	A. O. Hume. (See illustration.)
-14	14	...	?	Indian Museum.
12¾	13¼	27¾	?	British Museum.

- Owner's measurements.



Head of Tsaine or Burmese Bantin. From a specimen shot by
Lieut.-Col. H. D'U. Keary.

The BANTIN or TSAINE (*Bos [Bibos] sondaicus*).

The third and last member of the gaur group departs less widely from the type of the common ox than do the two others, the ridge on the withers being less developed, and the horns almost cylindrical. The cows, too, are always reddish coloured, although the bulls may be black, and in the latter sex at least there is always 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.

Distribution.—Burma, the Malay Peninsula, Borneo, Java, Bali, and perhaps Sumatra. At least two distinct races of the bantin are distinguishable. First, the true bantin, or Java ox (*Bos 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 old male bantin in Borneo, but the horns are directed more uprightly. The second well-defined 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

RECORDS OF BIG GAME

life, showing more or less of grey on the head, but it is stated that very old individuals are occasionally nearly black.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Widest outside.	Locality.	Owner.
-33½	17	26½	35	...	Upper Burma . .	Major H. S. Wood.
31½	16½	21½	31¼	36¼	Do. . . .	H. W. James.
30	16¼	24½	32	...	Do. . . .	H. W. Marsden.
-30	17	...	...	...	Java	Indian Museum.
29	16	28	34¾	...	Burma	H. L. P. Walsh.
-28½	17½	30½	36	...	Do. . . .	Major G. H. Evans.
28½	17¾	28½	34	...	Do. . . .	W. O. Hannington.
-28½	15	26½	36¾	...	Java	H. Van Son.
28¼	19	33½	37½	42½	Burma	The late C. W. A. Bruce.
27¼	15	34¼	38¾	42¾	Do. . . .	Lieut. - Col. H. D'U. Keary.
-27½	14½	27½	34¾	...	Do. . . .	Col. O. E. Lloyd.
27	14½	20¼	28½	...	Upper Burma . .	British Museum (R. M'D. Hawker)
27	17¾	24¾	32¾	...	Do. . . .	J. McF. Petters.
26½	16½	21½	28	...	Java	Sir Edmund G. Loder, Bart.
26	16¾	32	35	39¾	Burma	Capt. C. P. Gunter.
25¾	16½	20¾	26¾	...	Siam	H. C. V. Hunter.
25¾	17¾	13	24	...	Burma	Major C. S. Cumberland.
-25½	13¼	29	32	...	Do. . . .	W. H. Prendergast.
23¾	14	21½	11	26½	Java	British Museum.
23	16¾	30	29¾	...	Do. . . .	C. W. A. Buma.
♀ 23	12½	16¼	25	...	Upper Burma . .	R. M'D. Hawker.
♀ 22½	13½	15½	23	...	Java	C. W. A. Buma.
22	14¼	11½	20¼	24½	Borneo	H. P. Perry.
21¾	12¼	13½	19¼	...	Do. . . .	British Museum (H. B. Low).
20	16	22¼	24½	...	Kudah, B.N. Borneo	H. L.L. Davies.
♀ 20	12	21½	28	...	Upper Burma . .	The late C. W. A. Bruce.
-19¼	11¼	17	20	...	Borneo	Sir Edmund G. Loder, Bart.
♀ 15½	7½	7½	16½	...	Tammu, Burma . .	Major H. S. Wood.

- Owner's measurements.

DOMESTICATED OXEN (*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 on the Continent till the Middle Ages. 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, may be derived from the zebu, although subsequently crossed with North European cattle. Their horns are unlike those of the aurochs. The zebu or humped cattle of India and the Galla cattle of Africa evidently represent a totally distinct species (*Bos indicus*), now extinct in the wild state. The Ankole cattle of Uganda and the ancient Egyptian breed appear to indicate another type (*B. ægyptiacus*).

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.
57	17	72	...	?	W. A. Simpson Hinchliffe.
57	19½	82	...	Bechuanaland	Sir Edmund G. Loder, Bart.
56½	17½	76½	...	South Africa.	R. A. Cooper.
48½	16½	67	...	German E. Africa	Berlin Museum.
47	15½	21½	...	Abyssinia (Galla Ox)	British Museum (Sir H. Salt).
44	12½	70½ (about)	...	?	British Museum.
42½	23½	22½	...	Central Africa	Brit. Museum (Col. Denham).
41½	14	52½	...	Madagascar	Bethnal Green Museum.
40½	12½	60½	...	Vienna (Polish Bull)	British Museum.
39½	15	51½	...	Uganda	C. Craig.
-38½	12½	53½	...	Hungary	Dr. Albert von Stephani.
38½	10½	54½	...	Italy	Bethnal Green Museum.
37½	12	60	...	Cape of Good Hope	British Museum.
31½	10½	23½	...	Galla	A. E. Butter.

- Owner's measurements.

Length on outside curve.	Circumference.	Tip to Tip.	Widest inside.	Locality.	Owner.
30½	12¾	35	...	Spain . .	British Museum.
29¾	11½	28½	...	Gambia .	British Museum (Earl of Derby).
17½	10¾	30½	...	Buenos Aires (Niata Cattle)	British Museum (G. Claraz).
17¾	10¾	25¼	...	India . .	British Museum.
12½	8	16½	..	Angola . .	Sir Victor Brooke's Collection.
11½	7½	single horn	...	Nepal . .	British Museum (B. H. Hodgson).

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	21½	Chillingham Park	British Museum (Earl of Tankerville).
♀ 18¼	7	10½	15¾	Do.	Do.
15¼	9¾	17¾	18½	Northumberland	British Museum (Duke of Hamilton).
15	7½	20¾	...	Chartley Park	Capt. G. W. Hill, R.N.

The HIPPOPOTAMUS (*Hippopotamus amphibius*).

Abyssinian, <i>Gumare</i> .	Galla, <i>Robi</i> .	Somali, <i>Jir</i> .
Basuto, <i>Ikubu</i> .	Hausa, <i>Dorina</i> .	Swahili, <i>Kiboko</i> .
Boer, <i>Zee-koe</i> .	Masai, <i>Macow</i> .	Swazi, <i>Imvubu</i> .
Chilala, <i>Mourvu</i> .	M'Kua, <i>Tununto</i> .	Waganda, <i>Moubu</i> .
Danakil, <i>Dul</i> .	Sudanese, <i>Gerunt</i> .	

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.

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. Hippos are chiefly hunted for the sake of their hides, which are manufactured into sjamboks, or raw-hide whips. Their tusks have also a certain commercial value, although not so great as formerly, when they were employed for artificial teeth.

In Liberia and adjacent parts of the West Coast occurs the much smaller pigmy hippopotamus (*H. liberiensis*), an animal measuring only some 6 feet in length, and possessing more the habits of a pig. It also differs from the common species by having, as a rule, only one (instead of two) pair of incisor teeth between the tusks.

A hippopotamus, shot on the Shiré River, British Central Africa, by Mr. F. Vaughan Kirby, measured as follows:—

	ft.	in.		ft.	in.
Total length, nose to tail	14	2	Length of lower tusks	2	5
Tail	1	8	Circumference of do.		8 $\frac{1}{4}$
Height at shoulder	3	10 $\frac{1}{2}$	Weight of the pair do.	14 $\frac{1}{2}$	lbs.

Lower Curved Tusks, or Canines.

Length round outside curve.	Circumference.	Locality.	Owner.
¹ 64 $\frac{1}{2}$	7 $\frac{1}{4}$	E. Africa	F. J. Jackson.
² -51	9	S.E. Africa	J. Lamont.
41 $\frac{1}{2}$	8 $\frac{1}{4}$	Do.	Hon. Walter Rothschild.
² 41	8	Tana River, East Africa	J. Benet Stanford.

— Owner's measurements.

¹ Protruding from jaw.

² Malformed.

RECORDS OF BIG GAME

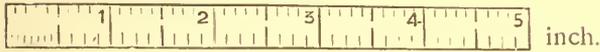
Length round outside curve.	Circumference.	Locality.	Owner.
¹ -38	...	Nyasaland . . .	Major P. W. Forbes.
¹ 37½	8¼	Shiré River . . .	Capt. A. T. Hunt, R.N.
32	9½	Lualaba, Central Africa	S. L. Hinde.
31¾	6¾	B.C. Africa . . .	F. W. Bowman.
31¾	10¾	. . . ?	Sir Clement Hill.
31½	9½	. . . ?	Sir Edmund G. Loder, Bart.
31¼	9	. . . ?	E. L. Fletcher.
² 31¼	...	S.E. Africa . . .	F. Vaughan Kirby.
31	10	N.E. Rhodesia . . .	G. M. E. Leyer.
30¾	9¼	Abyssinia . . .	D. P. MacGillivray.
30½	7¾	Sierra Leone . . .	Major G. S. M'Laughlin.
-30½	8	Lower Zambesi . . .	H. M. von Archer.
30	9	Shiré River . . .	Surgeon J. Dowson, R.N.
30	9	Zambesia . . .	E. W. Tompson.
30	9	British Central Africa .	R. M. Irwin.
-30	(weight 11 lbs.)	Katungas, Shiré River	E. B. Vertue.
29¾	8¾	Do.	F. C. Selous.
29	7¾	Zululand . . .	A. Cameron.
29	8¼	Shiré River . . .	F. Vaughan Kirby.
28¾	8¼	Gold Coast . . .	H. J. Hobbs.
28	8½	British Central Africa .	L. G. Ibach.

¹ Malformed and protruding from jaw.² Straight tusk 19 ins. long.

Lower Straight Tusks, or Incisors.

Length round outside curve.	Circumference.	Locality.	Owner.
21½	7¾	Abyssinia . . .	D. P. MacGillivray.
-20	...	Lower Zambesi . . .	H. M. von Archer.
18½	6½	Nigeria . . .	Major J. A. Burdon.

- Owner's measurements.



Abnormal Lower Tusk of Wild Boar.

WILD BOAR (*Sus scrofa*).

Most of the European and Asiatic species of wild swine, forming the typical group of the genus *Sus*, are so like each other that it is often a matter of difficulty to discriminate between them, and naturalists are not yet in accord as to the number of species which should be recognised. The European wild boar is a large coarsely-haired species, with an under coat of woolly fur, no warts on the face, and standing about 33 inches at the shoulder. It lacks the crest or mane of long black bristles running from the nape down the back in its Indian cousin *S. cristatus*; and the last tooth in the lower jaw is of a rather less complex structure than in the latter.

A Spanish boar killed by H.R.H. le Duc d'Orléans weighed 302 lbs.

Distribution.—Europe, Asia Minor, and North-East Africa.

Tusks.

Length on outside curve.		Length of tusk out of gum.	Locality.	Owner.
Right.	Left.			
13	Albania	Lord Brackley.
-13	New Zealand	G. W. Campbell.

- Owner's measurements.

RECORDS OF BIG GAME

Length on outside curve.		Length of tusk out of gum.	Locality.	Owner.
Right.	Left.			
12	Albania	Lord Carnegie.
11½	Caucasus	Col. Veernhof.
11¼	Do.	Major Robert Finnie.
11	New Zealand	H. J. Mussen.
9¾	Andalusia	H.R.H le Duc de Montpensier.
9¾	Asia Minor	Admiral Sir Michael Culme-Seymour, Bart.
1 9½	Caucasus	Prince E. Demidoff.
9½	Do.	Do.
9	Albania	Sir Reginald Cathcart, Bart.
8½	Algeria	Sir Edmund G. Loder, Bart.
2-8½	8¼	3	Near Bona, Algeria	Viscount Edmond de Poncins.
8¼	Algeria	Capt. John Marriott.
8	2½	...	Russia	Count J. Potocki.

¹ Weight 372 lbs.

² Weight 275 lbs. clean.



Head of Wild Boar.

The following specimens belong to the Indian Sus cristatus:—

Length on outside curve.	Locality.	Owner.
-14¾ (malformed)	Purneah, Lower Bengal	H. R. P. Carter, recorded in <i>Field</i> , 19th January 1895. (See illustration, p. 453.)
-14¾	Hills above Jamu	Col. Sir Neville Chamberlain.
12½	Gosrama	V. N. Hickley.

- Owner's measurements.

Length on outside curve.	Locality.	Owner.
12½	Upper Assam	J. D. Berrington.
-10½	North Kanara	Bombay Natural History Society.
-10½	Burma	Mrs. O. F. Wheeler Cuffe.
-10½	?	Meerut Tent Club.
10¾	Assam	N. Williamson.
-10	India	The late Sir Samuel Baker.
-9¾	?	Meerut Tent Club.
9¾	?	Dr. Travers.
9½	Burma	Langford Whitehouse.
9¾	North Kanara	Lieut.-Col. L. L. Fenton.
9¾	Central Provinces	Lieut.-Col. J. S. Ashby.
9¼	Do.	The late J. Moray-Brown.
9½	Ceylon	Capt. F. H. N. Pym.
8¾	Meerut	S. H. Charrington.
8½	Jumna Valley	The late Capt. F. C. Quicke.
8½	Jarina Jheel	R. Barry.
8½	Bengal	Capt. J. M ⁴ Kie.
8½	?	H.H. the Maharaja of Dungarpur.
8½	Ceylon	Capt. F. H. N. Pym.
-8'30	Assam	Viscount Edmond de Poncins.
-8¼	Bikanir	H.H. the Maharaja of Bikanir.
8	Assam	Viscount Edmond de Poncins.
-7'85	?	Major P. A. Bainbridge.
7¼	Mhow	H. Dibble.
7¼	?	H.H. the Maharaja of Bikanir.

- Owner's measurements.

CAPE BUSH-PIG (*Sus* [*Potamochoerus*] *chæropotamus*).

Bosch-vark of the Boers. *Ingulubi* of the Swazis and Zulus.

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 a large ridge-like prominence on each side of the face, due to the presence of a ridge of bone on the sheath of the tusk. The ears are generally surmounted with tufts of long hair. The various species are best distinguished by the character of their skulls, colour forming a very uncertain guide. The Cape bush-pig, or *bosch-vark*, is very generally grey, but the late Sir Andrew Smith stated that "scarcely any two specimens of this species exhibit the same colours; some are a brownish black variegated with white, and others are almost entirely of a light reddish-brown or rufous tint, without any white markings; indeed, such are the varieties that it is scarcely possible to say what are the prevailing colours." In British Central Africa, where they have been wrongly identified with the West African species, they are invariably reddish. Height at shoulder about 31 inches; weight, 35 lbs. Lower tusks average 6 to 7 inches long, and a good specimen shot by Mr. F. Vaughan Kirby had tusks protruding $4\frac{3}{8}$ inches from the jaw.

Distribution.—South and South-East Africa.

Length.		Exposed from gum.	Locality.	Owner.
Upper.	Lower.			
3½	6½	...	N.E. Rhodesia	Hon. Walter Rothschild.

WEST AFRICAN BUSH-PIG or RED RIVER-HOG

(*Sus* [*Potamochoerus*] *porcus*).

In this species 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.

Distribution.—West Africa, from Angola to Senegambia, and eastwards to Monbuttu.

Height at shoulder.	Weight.	Locality.	Owner.
-23 $\frac{1}{4}$	35 lbs.	Shiré River, British Central Africa	Dr. Percy Rendall.

- Owner's measurements.

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.

Distribution.—Nandi Forest ; and represented by an allied species in the Eastern Cameroons.

Upper Tusks.

Total Length.	Protruding from gum.	Circumference.	Locality.	Owner.
10 $\frac{1}{4}$ } 9 $\frac{3}{4}$ }	...	4 $\frac{5}{8}$	Nandi Forest, East Africa .	Hon. Walter Rothschild.

Lower Tusks.

9 } 8 $\frac{1}{2}$ }	...	2 $\frac{1}{4}$	Nandi Forest, East Africa .	Hon. Walter Rothschild.
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Mr. F. H. Barber's Tusks of Wart-Hog.

The WART-HOG (*Phacochoerus æthiopicus*).

- | | |
|---|--|
| <i>Bango</i> or <i>Nguruwe</i> of the Swahilis. | <i>Ngolobwi</i> in Ngamiland. |
| <i>Haloof</i> of the Sudanese. | <i>Injiri</i> in the Chilala and Chibisa |
| <i>Ikulubi</i> of the Basutos. | countries. |
| <i>Indaigazana</i> of the Swazis and | <i>Vlak-vark</i> of the Boers. |
| Zulus. | <i>Darunga</i> of the Hausas. |
| <i>Karkary</i> of the Somalis. | <i>Ngron</i> of the M'Kua. |
| <i>Ngolobwi</i> in Barotsiland. | |

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 three 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 the true 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. Animals of the same genus extend, however, right through East and Central Africa to Abyssinia; those from the latter country having been described as a distinct species, under the name of *P. africanus*. Not improbably, however, the northern animal is only a local race of the southern form. 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.

Length on outside curve.	Length exposed from gum.	Locality.	Owner.
27 } 26 }	...	Annesley Bay . . .	Capt. Ralph Berners, R.N.
20	17 $\frac{3}{4}$	South Africa . . .	F. H. Barber.
...	16	Do. . . .	W. A. Simpson Hinchliffe.
...	13 $\frac{3}{4}$	Zambesia . . .	R. J. Cuninghame.
16 $\frac{1}{4}$	13 $\frac{1}{2}$	? . . .	J. Whitaker.
15 $\frac{1}{2}$	13 $\frac{1}{2}$	Matanari Bush . . .	F. Vaughan Kirby.
15 $\frac{3}{8}$	..	East Africa . . .	A. J. A. Douglas.
15 $\frac{1}{8}$	...	N.E. Rhodesia . . .	F. H. Melland.
15	13 $\frac{1}{2}$	British Central Africa . . .	R. H. Storey.
14 $\frac{3}{4}$	...	Do. . . .	John Yule.
14	11 $\frac{1}{4}$	Sudan	Capt. A. A. Jeffcoat.
13 $\frac{3}{8}$	...	German East Africa . . .	Berlin Museum.

— Owner's measurements.

RECORDS OF BIG GAME

Length on outside curve.	Length exposed from gum.	Locality.	Owner.
13 $\frac{1}{8}$	...	Somaliland . . .	Capt. B. R. M. Glossop.
...	13 $\frac{3}{4}$	East Africa . . .	Walter Jones.
...	13	South-East Africa . . .	F. C. Selous.
12 $\frac{3}{4}$	...	Nigeria	A. Noel Woods.
...	-11 $\frac{1}{2}$	South-East Africa . . .	Julius Jeppe.
...	-11 $\frac{1}{2}$	Angola	W. C. Neilson.
...	10 $\frac{1}{2}$	Somaliland	R. A. M'Clymont.
...	10 $\frac{1}{2}$	Do.	H. Hyde Baker.
...	9	Sudan	Marquis Pizzardi.
...	9	Do.	?

Lower Tusks.

Length on outside curve.	Length exposed from gum.	Locality.	Owner.
-9 $\frac{1}{2}$...	Somaliland	J. D. Inverarity.
-9 $\frac{1}{2}$...	Do.	Viscount Edmond de Poncins.

- Owner's measurements.



Skull of Babirusa.

The **BABIRUSA** (*Babirusa alfurus*).

‡ The pig-deer (to translate its Malay name) is 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 other pigs, in which they curve upwards from the sides of the lips, the upper tusks grow from the centre of the muzzle, piercing through the skin, 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 its organisation the babirusa is, however, very like the latter, although the nearly naked skin is remarkable for its 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. Babirusa 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.

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.

RECORDS OF BIG GAME

		Tusks.		
	Length.			Owner.
Upper.		Lower.		
-17		...		H. Van Son.
-16 $\frac{3}{4}$		13 $\frac{1}{2}$		Rowland Ward.
-14 $\frac{1}{2}$...		Dr. F. H. H. Guillemard.
-13 $\frac{1}{4}$		15		Imperial Museum, Vienna.
-11		8 $\frac{5}{8}$		Dr. Albert von Stephani.

- Owner's measurements.



Record Horn of Great Indian Rhinoceros. Shot by Lord Curzon of Kedleston.

The GREAT INDIAN RHINOCEROS (*Rhinoceros unicornis*).

In addition to being the giant among its Asiatic kindred and possessing but 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, 105 inches. The late Dr. T. C. Jerdon mentions 24 inches as the length of a fine horn.



Horn of Great Indian Rhinoceros.

THE MAHARAJA OF COOCH BEHAR'S SPECIMENS

Height at shoulder	6 ft. 4 $\frac{1}{4}$ ins.	6 ft. 1 in.	6 ft. $\frac{1}{2}$ in.
Total length	14 ft. 1 in.	13 ft. 2 ins.	13 ft. 10 ins.
Body	11 ft. 11 ins.	11 ft. 2 ins.	11 ft. 8 ins.
Girth behind shoulder	119 ins.	112 ins.	
Maximum girth	144 ins.	142 ins.	
Round neck nearest body	90 ins.	84 ins.	
" " head	74 ins.	75 ins.	
Horn	16 $\frac{1}{4}$ ins.	13 $\frac{7}{8}$ ins.	

Distribution.—Chiefly the Assam plain at the present day. At one time this animal was found over the greater part of the Indian peninsula, as attested by fossil remains, but it is now confined on the west side of the Bay of Bengal to Assam and Nepal, although there is some evidence of its occurrence in Upper Burma to Assam and Nepal.

Length on front curve.	Circumference.	Weight.	Locality.	Owner.
21 $\frac{1}{2}$	24 $\frac{3}{4}$	...	Nepal	Lord Curzon.
19 $\frac{1}{8}$	22 $\frac{3}{8}$	...	India	British Museum.
♀ 18	16	...	Assam	M. H. Logan.
16 $\frac{3}{4}$.	...	...	Belsire, Assam	W. C. Sherwill.
♀ 16 $\frac{1}{4}$	...	...	Cooch Behar	H.H. the Maharaja of Cooch Behar.

— Owner's measurements.

Length on front curve.	Circumference.	Weight.	Locality.	Owner.
♀ 16	...	3½ lbs.	Nowgong, Assam	L. Fabre Tonnerre.
14½	21	...	Assam	Dr. W. P. Y. Bainbrigge.
♀ 14	22¾	4½ lbs.	Nowgong	L. Fabre Tonnerre.
-13¾	...	...	Cooch Behar	Maharaja of Cooch Behar.
¹ 13	...	...	Do.	Do.
13	20½	...	Assam	G. A. Dolby.
13	20¾	...	Do.	W. A. Doxat.
12¾	23	..	Do.	H. B. Firman.
12½	21½	...	Do.	H. C. Holland.
-12½	15½	...	Cooch Behar	James J. Harrison.
12½	21	...	?	J. W. Grieve.
12	21½	...	Cooch Behar	A. Ezra.

- Owner's measurements.

¹ Height at shoulder, 6 ft. 6 ins.

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 hinder 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 5½ 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 Terai, Sikkim, Assam, and thence through Burma and the Malay Peninsula to Sumatra, Java, and Borneo.

Length on front curve.	Circumference.	Locality.	Owner.
10½	19½	Java	British Museum.
10½	19½	Do.	H. Van Son.
8¼	20	Do.	A. S. Campbell.



Horn of Sumatran Rhinoceros. Shot by 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	...	17¾	...	?	Do.
15	7½	17½	17	Malay Peninsula	C. B. Smales.
11	3½	15¼	11¼	?	Sir T. S. Tancred, Bart.
6¼	3¼	12¾	12½	Burma	The late C. W. A. Bruce.

¹ An earlier name is *Dicerorhinus*, but this is too like *Diceros*, the subgeneric (or generic) name of the African rhinoceroses, to be employed.



Mr. S. L. Hinde's Horns of Black Rhinoceros.

BLACK or COMMON RHINOCEROS (*Rhinoceros* [*Diceros*] *bicornis*).

Aurarisse of the Abyssinians.

Abu Gesu-Khartyl of the Sudanese.

Chipamberi of the Lower Zambesi natives.

Chipémbere of the Chilalas.

Fava of the Swahilis.

Gurlu of the Danakil tribes.

Muin of the Masais.

Mege of the M'Kua.

Sipejana of the Swazis and Matonga.

Upejana of the Matabili and Zulus.

Upelepe of the Basutos.

Wärtses of the Gallas.

Weel of the Somalis.

Zwart Rhinaster of the Boers.

The African rhinoceroses are two-horned animals, readily distinguished from their Asiatic relatives by the absence of the folds of skin on the body 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. as he fell.

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 Lieut.-Col. E. G. Harrison, writing in the *Field* of December 25, 1897, gives the following measurements of a five-horned rhinoceros shot by himself in East Africa:—

First Horn.—Counting from snout, measurement $14\frac{3}{4}$ ins.; is a normal front horn curving backwards.

Second Horn.— $15\frac{1}{4}$ ins., curving forwards instead of backwards or being straight, as is usual, and leaning considerably over to the off-side.

Third Horn.— $11\frac{1}{4}$ ins. long and $5\frac{1}{2}$ ins. wide half-way between base and apex; is flat and perpendicular, and, though a distinct horn, grows out of the off-side of the base of No. 2.

Fourth Horn.—Is a stumpy, abortive horn, 9 ins. long, growing

partly from the base of No. 3, but quite separate and inclining slightly backwards.

Fifth Horn.—A distinct horn, $9\frac{3}{4}$ ins. long, with its own base separated about 3 ins. from No. 4.

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. In spite of its wide distribution, it has not been found possible to split up the species into local races; although this may perhaps be due to the want of sufficient specimens for comparison. The so-called *Rhinoceros holmwoodi* is a variety of this species.

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.
-44½	...	...	...	?	Imperial Museum, Vienna.
44	...	...	...	?	The late F. Holmwood.
43	...	21½	...	?	The late A. Beit.
41½	10	20½	16½	Zululand . . .	Lieut.-Col Hon. W. Coke.
-41¼	...	22½	...	Orange River Colony .	Major - Gen. Sir William Crossman.
-41	...	...	...	?	Carl Hagenbeck.
41	...	...	...	East Africa . . .	The late F. Holmwood.
-40	...	22	...	Do. . . .	Berlin Museum.
40	14¾	18½	20¼	Mt. Kenia, East Central Africa	A. H. Neumann.
-39½	...	21½	...	South Africa . . .	J. Lamont.
38¾	...	21	...	?	Hon. Walter Rothschild.
38½	...	19	...	Masailand	Sir John Kirk.
-38	11	24	21¾	South Africa . . .	Earl of Dartmouth.

- Owner's measurements.

RECORDS OF BIG GAME

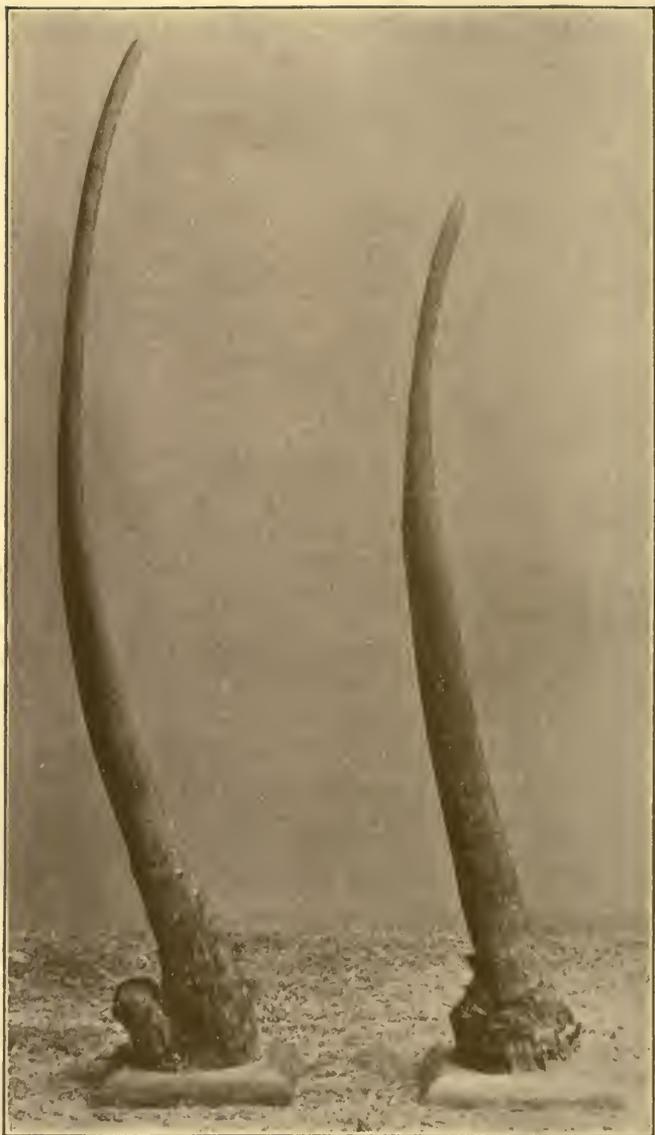
Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
-36	...	...	...	East Africa	Sir Bartle Frere, Bart.
-35½	...	18	...	?	H. Murray.
33¾	16	20	19½	East Africa	T. P. Kempson.
♀ 33½	...	17½	...	Matabililand	W. Van Ness.
33	22	19½	20½	East Africa	A. J. A. Douglas.
-32½	21	19	15½	Portuguese Northern Zambesia	F. Vaughan Kirby.
32½	16	22	19	Athi Plains, East Africa	Capt. R. Meinertzhagen.
-32	11¾	19¾	19½	Do.	Count Scheibler.
31	...	18	...	East Africa	R. P. Carroll.
31	19½	16	16½	Do.	H. C. V. Hunter.
-30¾	8¾	18½	16¾	German East Africa	O. Neumann.
¹ 30	21½	22½	23½	East Africa	Capt. the Hon. A. Greville.
29½	...	18¾	...	Somaliland	Julius Jeppe.
29½	14½	...	...	Do.	A. H. Straker.
28½	...	18	...	South Africa	C. D. Rudd.
28	23¼	...	...	East Africa	F. Baden-Powell.
28¼	8¾	18½	...	South Africa	F. C. Selous.
27½	17¾	21	18	East Africa	H. Hyde Baker.
27¼	10	21	17	Masailand	Rear-Admiral R. A. J. Mont- gomerie, R.N.
27	12½	24¾	20	East Africa	Abel Chapman.
27	...	20½	...	Do.	E. Gedge.
27	13¼	24½	22½	Do.	Abel Chapman.
27	16½	17¾	17½	Do.	Sir Robert Harvey, Bart.
27	12	...	...	Do.	Sir John Willoughby, Bart.
26¾	13¼	22	...	?	Sir Edmund G. Loder, Bart.
26½	10½	19½	15	East Africa	Henry Charrington.
26	13	20¼	23½	Do.	C. Craig.
26	9	18	17	Do.	Major M. Tighe.
26	10	20½	19	Do.	F. W. Belt.

- Owner's measurements.

¹ 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.		
♀ 25 $\frac{3}{4}$	17	16	15	East shore of Lake Rudolf	A. H. Neumann.
22 $\frac{1}{2}$	14 $\frac{1}{2}$	17	16 $\frac{1}{2}$	Somaliland	Julius Jeppe.
22 $\frac{1}{4}$	10	22 $\frac{3}{4}$	19	Do.	Sir H. D. Tichborne, Bart.
22	6 $\frac{3}{4}$	17 $\frac{1}{4}$	16	Do.	Col. H. D. Olivier.
21 $\frac{3}{4}$	11 $\frac{3}{4}$	19	19	Do.	J. Kenneth Foster.
21 $\frac{3}{8}$	17	14	16	Abyssinia	British Museum.
21	9 $\frac{1}{2}$	17 $\frac{1}{2}$	15 $\frac{1}{2}$	Somaliland	F. Gillett.
20 $\frac{1}{2}$	9 $\frac{1}{4}$	21 $\frac{3}{4}$	19 $\frac{7}{8}$	Do.	Count E. Hoyos.
20 $\frac{1}{4}$	...	19 $\frac{1}{4}$	...	Lake Tchad	G. W. Moran.
20	11 $\frac{1}{2}$	21 $\frac{1}{2}$	18	Somaliland	J. Byng Paget.
20	6 $\frac{3}{4}$	20 $\frac{1}{2}$	19 $\frac{1}{2}$	Do.	Lieut.-Col. H. G. C. Swayne.
20	8 $\frac{1}{4}$	23 $\frac{1}{2}$	21 $\frac{7}{8}$	Do.	Count E. Hoyos.
14 $\frac{3}{4}$	9	17 $\frac{1}{4}$	14	Benue, Nigeria	E. J. Wolseley.
13	6 $\frac{3}{4}$	17 $\frac{1}{4}$	16 $\frac{1}{2}$	Abyssinia	O. Neumann.

- Owner's measurements.



Front Horns of White Rhinoceros.

From specimens in the collection of the late Roualeyn Gordon Cumming, in the possession of Col. W. Gordon Cumming.

WHITE or BURCHELL'S RHINOCEROS (*Rhinoceros* [*Diceros*] *simus*).

Khartyt of the Sudanese.

Vit Rhenaster of the Dutch.

Next to the Indian elephant this is the largest mammal that has trodden the earth in modern times. 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, 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 carried its head low, so that in examples in which the front horn bends forward, its tip became worn by being pushed along the ground. It is somewhat difficult to surmise the reason for the application of the name white rhinoceros to this species.

Distribution.—South and South-East Africa, in suitable localities, as far north as the Zambesi; and again in Central Africa at Lado, on 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 first indicated by the late Sir Samuel Baker on the evidence of horns, and subsequently made certain in the neighbourhood of Lado by Major Gibbons. This northern form may prove to be a distinct race.

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
62½	...	22½	...	South Africa . . .	Col. W. Gordon Cumming.
56½	...	23½ about	...	Do. . . .	British Museum.
52½	...	21½	...	Do. . . .	Col. W. Gordon Cumming.
44	...	20	...	Do. . . .	British Museum.
43¾	...	23¾	...	Do. . . .	The late A. Beit.
42¾	...	25¾	...	Limpopo . . .	The late W. C. Oswald.
41	South Africa . . .	J. W. Fitzherbert.
40¾	...	29¾	...	Do. . . .	Sir Edmund G. Loder, Bart.

— Owner's measurements.

RECORDS OF BIG GAME

Length on outside curve.		Circumference.		Locality.	Owner.
Front Horn.	Rear Horn.	Front Horn.	Rear Horn.		
40½	...	20¾	..	South Africa . .	Hon. Walter Rothschild.
-40½	...	22½	..	Do. . .	Sir Edmund G. Loder, Bart.
40¼	...	25	..	Bahr-el-Ghazal . .	Capt. F. G. Poole.
40	...	15¾	..	South Africa . .	British Museum.
39½	...	23	..	?	Lord Delamere.
♀ 38½	..	24½	..	?	The late W. C. Oswald.
38¼	...	22¼	...	?	J. B. Taylor.
37¾	17¾	27½	...	Mashonaland . .	F. C. Selous.
37¼	.	24	7½	South Africa . .	British Museum.
-36¾	...	20½	..	?	Berlin Museum.
36¼	...	19¾	..	Sudan . . .	Brig.-Gen. B. T. Mahon.
36	...	28½	...	Mashonaland . .	C. D. Rudd.
¹ 35½	7½	26	21	Mount Domo, Ma- shonaland	South African Museum (the late Cecil Rhodes).
-33½	...	23	...	?	Julius Jeppe.
33	13½	23¼	...	Mashonaland . .	F. C. Selous.
32½	12½	21½	19	Near Lado . .	James J. Harrison.
32	13	27¼	25½	Do. . .	Capt. the Hon. M. P. Macnaghten.
31½	...	19½	...	?	Mr. Justice Hopley.
31	...	24	...	Zululand . . .	Lieut.-Col. Hon. W. Coke.
31	..	22	...	Mashonaland . .	J. G. Griffiths.
30¾	..	25¾	...	White Nile . .	Major C. J. Hawker.
-30¾	...	25¼	...	South Africa . .	Col. H. B. H. Blundell.
¹ ♀ 29¾	5½	23	20½	Zululand . . .	Pretoria Museum (Julius Jeppe).
29	10	25	23	White Nile . .	Major R. M. Sanders.
¹ 22½	7½	26¼	...	Mashonaland . .	Hon. Walter Rothschild.
¹ 20¾	7	28¾	..	Do. . .	British Museum.
¹ 20	6	25½	18½	Zululand . . .	H. R. H. le Duc d'Orléans.

- Owner's measurements.

¹ Mounted specimens.



From a Photograph by Mr. Eales, Reading

Skull and Horns of White Rhinoceros.
Shot by F. C. Selous in Mashonaland, 1880.



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 hinder ones. 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 9 feet 10 inches, 10 feet 1 inch, and 10 feet 7½ inches, 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. maximus sumatrensis*) is said to be characterised by the coarser structure of the molar teeth.

Height (Owner's Measurements).

At Shoulder. ft. ins.	Locality.	Owner.
10 6	Burma	H. Shaw Dunn.
10 5	Coorg	S. H. Charrington.
10 4	Garhwal, N.W.P.	Col. J. E. Campbell.
10 1	Ceylon	James J. Harrison.
10 1	India	Major-General A. A. Kinloch.
9 8	Southern India	F. Gompertz.
9 7	Mysore	The late G. P. Sanderson.

Tusks.

Length out- side curve. ft. ins.	Greatest cir- cumference. ins.	Weight. lbs.	Locality.	Owner.
-8 9R }	17¼	81	Assam	The late Earl Lytton.
-8 2L }	...	80.2	Do.	Do.
-8 9	...	...	Burma	Government House, Rangoon.
-8 6	...	...	Do.	Do.

- Owner's measurements.

RECORDS OF BIG GAME

Length out- side curve.		Greatest cir- cumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
8	0	16 $\frac{3}{4}$	90	S. India . . .	Sir Victor Brooke's Collection.
-7	6	15 $\frac{1}{2}$	...	Sumatra . . .	G. F. W. Curtis.
-7	0	14 $\frac{1}{2}$...		
17	3 $\frac{3}{4}$	17 $\frac{1}{2}$	102	Burma . . .	Marquis of Waterford.
7	3 $\frac{1}{4}$	17 $\frac{3}{8}$	97 $\frac{1}{2}$	Do. . . .	Do.
6	11	15 $\frac{1}{2}$	106	Do. . . .	R. Gordon Smith.
6	6	15 $\frac{1}{2}$...		
6	10	17 $\frac{1}{2}$	65 $\frac{5}{8}$	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	Do. . . .	Do.
-6	8	...	77 $\frac{1}{4}$	Madura District, S. India	The late Col. G. M. Payne.
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	Major R. J. Marker.
3	11 $\frac{3}{4}$	12 $\frac{1}{4}$	29 $\frac{3}{4}$	Do. . . .	Do.
-6	4	...	...	Assam . . .	G. H. Moore.
-6	3 $\frac{1}{2}$	...	73 $\frac{1}{4}$	Madura District .	British Museum (the late Col. G. M. Payne).
-6	1	17 $\frac{3}{8}$	56 $\frac{1}{2}$	Assam . . .	H. N. Williamson.
-5	11 $\frac{3}{4}$	17 $\frac{1}{2}$	53 $\frac{1}{2}$		
6	0 $\frac{1}{2}$	...	109	S. India . . .	F. Gompertz.
5	8	...	...
6	0	...	50	Madras . . .	J. Fortune.
-5	10	...	...	Borneo . . .	C. M. D. Stewart.
5	8 $\frac{1}{2}$	15 $\frac{1}{2}$	42 $\frac{1}{2}$	Dacca . . .	Dalrymple Clark.
5	6	15 $\frac{1}{2}$	42 $\frac{1}{2}$	Do. . . .	Do.
5	8	...	...	Burma . . .	H. A. Kelso.
5	7	...	...	Do. . . .	Do.
5	8	14	33 $\frac{1}{2}$	Coorg . . .	S. H. Charrington.
5	6	14 $\frac{1}{4}$	34 $\frac{1}{2}$		
-5	3	15	42	Ceylon . . .	W. S. Murray.

- Owner's measurements.

¹ 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.		
5	2	16	...	Burma . . .	} P. Hudson.
4	11		...	Do. . . .	
-5	1½	15	35	Travancore . . .	Hon. E. Stonor.
4	10		32½	Do. . . .	Do.
5	0½	...	35	Travancore . . .	Major G. H. Evans.
4	10	...	32½		
4	10	14	...	Burma	H. Wood.
-4	6⅝	16¾	45¼	S. India	Lieut.-Col. E. T. Taylor.
-4	4⅝		17			38¼
4	6½	...	...	Assam	Capt. F. B. Stapleton-Bretherton.
4	5	...	...
-4	7	13	...	Travancore	J. D. Rees.
4	6	15	...	Do. . . .	Lord Wenlock.
4	4½	15	...	Do. . . .	Do.

Feet.

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
-67½	...	From living elephant, by Major-Gen. G. W. Hanson.	
62½	...	South Arcot District . . .	J. Fortune.
61½	...	Coorg	S. H. Charrington.
61	20	Travancore	Lieut.-Col. D. M. Lumsden.
-60½	...	?	Major-Gen. A. A. A. Kinloch.
60	18	Mysore	Viscount Powerscourt.
-60	...	Garhwal	B. B. Osmaston.
59	19	?	Lieut. R. Home, R.N.
58½	18	Travancore	Capt. H. L. Cottingham.
58½	18	Assam	A. H. Cuming.
58	19	Do. . . .	Capt. F. B. Stapleton-Bretherton.
-58	..	S. India	F. Gompertz.
58	18	Travancore	Hon. E. Stonor.

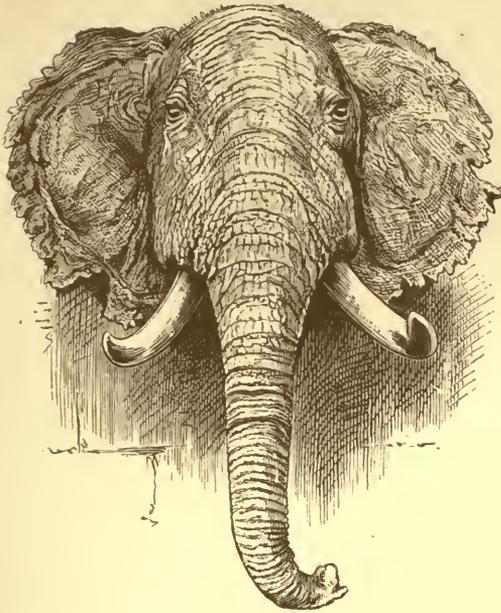
- Owner's measurements.

RECORDS OF BIG GAME

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
57 $\frac{3}{4}$	19	Assam . . .	H. C. Holland.
¹ 57 $\frac{1}{2}$	17	Ceylon . . .	R. Gordon Smith.
57 $\frac{1}{2}$	18 $\frac{1}{2}$	Assam . . .	D. D. F. Hosack.
57 $\frac{1}{2}$	...	S. India . . .	Lieut.-Col. E. T. Taylor.
56	...	Ceylon . . .	E. J. Brooke.
56	17	Do.	G. M. Norrie.
56	18	Do.	Sir Peter Walker, Bart.
56	17 $\frac{1}{2}$	Do.	T. H. Mann.
55 $\frac{1}{2}$	18 $\frac{1}{2}$	Travancore . . .	Lord Wenlock.
55	17 $\frac{1}{2}$	Burma	H. Twyford.
² 55	17	Garhwal	B. B. Osmaston.
³ 55	20 $\frac{3}{4}$	?	Lieut. R. Home, R.N.
55	17	N.W. Province . . .	Capt. G. O. Bigge.

- Owner's measurements.

¹ Measurements, 54 ins. \times 17 ins. when dried. ² Measurements, 59 $\frac{1}{2}$ when shot. ³ Hind foot.



Head of African Elephant.

The AFRICAN ELEPHANT (*Elephas [Loxodon] africanus*).

Arb of the Gallas.

Dakana of the Abyssinians (Danakil).

Fyl of the Sudanese.

Marodi of the Somalis.

Njovu in the Chilala and Chibisa
countries.

Njovu of the Waganda.

Temba of the Swahilis.

Tepo of the M'Kua.

Thlo in Ngamiland.

Tlo in Barotsiland.

Zahon of the Abyssinians.

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. In all Khama's country of Bamangwato, for instance, where Gordon Cumming, Oswell, and others shot most of their elephants, only one solitary herd remains.

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.
11	6	...	...	4	10	Near Wadelai	E. S. Grogan and G. A. S. Cape.
11	3	...	...	...	...	East Africa	A. H. Neumann.
11	1	17	3	4	11	Mozambique	James J. Harrison.
11	1	...	...	5	4	Toro, E.C.A.	E. S. Grogan.
11	1	...	...	...	...	East Africa	Abel Chapman.
10	10	...	...	...	...	White Nile	Major R. M. Sanders.
10	9	12	8	5	0	Lake Rudolf	A. H. Neumann.
10	8	...	...	5	0	Mozambique	F. Vaughan Kirby.
10	8	...	...	4	10	Tana River	Capt. H. De Prée.
10	7	"Jumbo"	...	...	...	?	Barnum and Bailey.
10	6½	16	9	4	10	Mozambique	F. Vaughan Kirby.
10	6	...	...	4	8	Tana River	Capt. C. Hankey.
10	6	...	...	...	...	?	S. Robbins.
10	6	..	...	...	...	S.E. Africa	F. C. Selous.
10	3	21	0	5	1	Nyasaland	Sir John Kirk.
10	0	23	5	...	...	South Africa	H. R. H. the Duke of Saxe-Coburg and Gotha.
9	7½	...	...	4	6¾ (dried)	Somaliland	Viscount Edmond de Poncins.
9	5	...	...	...	...	Abyssinia	A. E. Butter.

¹ Length from root of tail to eye, in straight line.

With reference to the subject, Mr. A. H. Neumann, the author of *Elephant Hunting in East Equatorial Africa*, says, "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."



From a photograph by Mr. J. R. W. Pigott.

The Big Tusk (8 ft. 7½ ins., 165 lbs.) presented by the Officers serving in British East Africa to H.R.H. the Prince of Wales on the occasion of his marriage.

Tusks.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
11	5½	18½	293	East Africa . . .	Rowland Ward.
11	0	18½			
10	4	26	235	Do. . . .	Sir Edmund G. Loder, Bart.
10	2½	24½	226½	Do. . . .	British Museum.
9	10	19½	247	East Africa . . .	Charles Pulley.
9	5					19

RECORDS OF BIG GAME

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
9	5½	18¾	120	Tana River . .	Capt. H. De Prée.
9	0	18¼	117	Do. . .	Do.
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 .	F. J. Jackson.
9	3¼	18¾	...	Tana River . .	Sir Robert Harvey, Bart.
-9	3	...	129	?	F. J. Jackson.
9	2¾	20	...	Tana River . .	Sir Robert Harvey, Bart.
9	2	24	340	Uganda . . .	H. S. Burrough.
8	5	24			
19	0	21¾	161	Tana River . .	H.R.II. the Prince of Wales.
18	11	22½	167	Do. . .	Do.
9	0	18½	16	N. of Lake Rudolf	A. H. Neumann.
9	0	21	150	Africa . . .	Sir Edmund G. Loder, Bart.
9	0	18½	116	N. of Lake Rudolf .	A. H. Neumann.
-8	11	18½	...	Gallaland . . .	Measured by Viscount Edmond de Poncins.
9	0	25	198	Central Africa . .	P. H. G. Powell-Cotton.
8	11	23½	174		
-8	11	18½	110	Mt. Elgon, E. Africa	Major J. D. Ferguson.
-8	9	18½	108	Do.	Do.
8	10	18	105	East Africa . .	Lord Delamere.
-8	9½	...	102	Tana River . .	Capt. H. De Prée and Capt. C. Hankey.
-8	0	...	91	Do. . .	Do.
8	7½	22¾	165	East Africa . .	H.R.H. the Prince of Wales.
8	6	18¼	100	Do. . .	Lord Delamere.
8	5	23¾	175	Uganda . . .	Graham Pownall.
8	5	19¾	139½	Bahr-el-Gebel . .	Major R. M. Sanders.
8	1¾	19¾	137	Do. . .	Do.
8	4	...	76	M'bogo . . .	E. S. Grogan.

- Owner's measurements.

¹ Presented by H.H. Aga Khan.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
-8	3½	...	125	E.C. Africa . . .	Major M. L. Hornby.
-8	0	...	127½	Do. . . .	Do.
8	3	18¾	81½	East Africa . . .	Capt. T. W. Greenfield.
8	2	18¾	80	Do. . . .	Do.
8	3	22	135½	Sudan	Sir W. Garstin.
7	11	23¼	159½		
-8	1	23	137½	Toro	F. S. Grogan.
8	1	20¼	110	Abyssinian Sudan . .	W. N. McMillan.
8	0	20	108		
8	0	22	...	East Africa . . .	Major M. Tighe.
7	11¾	21¼	138	E.C. Africa . . .	A. H. Sharp and E. S. Grogan.
7	11	17⅝	90	White Nile . . .	Capt. E. R. Wishaw.
7	0	17	80	Do. . . .	Do.
7	10¾	17½	82	Tana River . . .	Capt. C. Hankey.
7	2	17½	79	Do. . . .	Do.
7	10½	20	113	Upper Nile . . .	Douglas M'Douall.
7	5½	20½	108	Do. . . .	Do.
7	9	22½		Lake Rudolf . . .	A. E. Butter.
7	7	21½	268		
7	8½	23½	160	Africa	Chalmers, Guthrie, and Co.
-7	8	...	108	Gallaland . . .	Dr. Donaldson Smith.
-7	6	...	100	Do. . . .	Do.
-7	9	22	119	N.E. Rhodesia . . .	F. H. Melland.
-7	8¼	20½	110		
7	7	16¾	...	Lake Naivasha . . .	T. W. Brooke.
7	6	16¾			
7	5½	18	85	Sudan	Capt. A. W. Jennings Bramly.
7	5	18¼	80		
7	3¼	19½	102	East Africa . . .	Brig.-Gen. Sir F. J. D. Lugard.
7	2½	18¼	87	Abyssinian Sudan . .	C. Bulpett.
6	7	18¼	85		

- Owner's measurements.

RECORDS OF BIG GAME

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
7	1	17	68	East Africa . . .	Abel Chapman.
6	11	17½	67		
7	0½	18½	81	Do. . . .	A. H. Wheeler.
7	0	18¼	79		
7	0	20½	112	Upper Nile . . .	Capt. M. F. Gage.
6	9	20	111	Do. . . .	Do.
-6	10	...	106	Sudan	Major C. J. Hawker.
-6	2	...	96	Do. . . .	Do.
6	9	18½	81	Uganda	C. Craig.
6	8	17	74	?	Julius Jeppe.
6	7	16½	...	South-East Africa . .	F. C. Selous.
6	6¾	18½	74	East Africa	Lord Hindlip.
6	6	18½	77½		
6	6	15½	...	B.C. Africa	R. H. Storey.
6	4	15½	...		
96	5½	12½	...	N. of Lake Rudolf . .	A. H. Neumann.
6	4½	17¼	...	East Central Africa	H. S. H. Cavendish.
6	4½	19½	...	Upper Nile	P. B. Vander-Byl.
5	11	20¼	...			Do. . . .	Do.
6	2½	18½	...	Lomagundis Country	Duke of Westminster.
5	7½	18¾	...		
6	2	15½	45	East Africa	W. J. Chapman.
5	5	15½	43		
6	1	7½	...	Masailand	Sir John Kirk.
(spiral tusk)	5	5	5¾	East Africa	Marquis of Waterford.
	5	3	16		
5	0	14¾	49	Abyssinia	A. E. Butter.
4	8	14¾	47	Do. . . .	Do.
4	11	15	26	Somaliland	A. H. Straker.
4	9½	14¾	33½	Do. . . .	Capt. E. W. S. Brooke.

- Owner's measurements.

Length (outside curve).		Greatest circumference.	Weight.	Locality.	Owner.
ft.	ins.	ins.	lbs.		
4	8 $\frac{1}{4}$	13 $\frac{1}{2}$	...	Somaliland . . .	Sir Edmund G. Loder, Bart.
4	5	12 $\frac{1}{2}$	...	Do. . . .	Lord Delamere.
4	4	13 $\frac{3}{4}$	26	Do. . . .	Major J. M'Call Maxwell.

Feet (see also page 479).

Circumference at base.	Width at bottom, back to front.	Locality.	Owner.
-65	...	Central Africa . . .	Arnold Mathews.
64	20 $\frac{1}{2}$	Toro	E. S. Grogan.
63 $\frac{1}{2}$	20	White Nile . . .	Sir W. Garstin.
63	20	Do. . . .	Major C. J. Hawker.
63	20	Do. . . .	Capt. H. S. Logan.
62	20	East Africa . . .	C. Craig.
-61	...	Do. . . .	Marquis Pizzardi.
-60 $\frac{3}{4}$	...	Somaliland . . .	Capt. M. S. Wellby.
60 $\frac{1}{2}$	...	White Nile . . .	Sir Edmund G. Loder, Bart.
60	19	Wadelai	Major M. L. Carleton.
58 $\frac{3}{4}$	19	East Africa . . .	Capt. Neill Malcolm.
58 $\frac{1}{2}$	19	E.C. Africa . . .	H. S. H. Cavendish.
-58	...	East Africa . . .	Abel Chapman.
-58	21	Tana River . . .	Capt. H. De Prée.
-57 $\frac{1}{2}$	21	Lake Mweru . . .	Poulett-Weatherley.
56 $\frac{1}{2}$	18 $\frac{1}{2}$	B.C. Africa . . .	C. B. C. Storey.
56 $\frac{1}{2}$	18 $\frac{1}{2}$	East Africa . . .	A. H. Wheeler.
-56	...	Upper Nile . . .	Major C. A. Sykes.
55 $\frac{1}{2}$	...	B.C. Africa . . .	S. Robins.
54	...	Kilimanjaro . . .	F. J. Jackson.
-54	17	Somaliland . . .	Count E. Hoyos.
53	17	Do. . . .	Major J. M'Call Maxwell.
-51	...	Gallaland	Viscount Edmond de Poncins.
50	17	South Africa . . .	F. C. Selous.
49 $\frac{1}{2}$	17 $\frac{1}{4}$	Do. . . .	Do.
49 $\frac{1}{2}$	...	Abyssinia	A. E. Butter.

- Owner's measurements.

The MAMMOTH or 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, and the skin clothed in woolly fur with long bristles intermixed.

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	0	19	...	?	Hon. Walter Rothschild.
11	5	17 $\frac{3}{4}$	...	?	Do.
11	0	20 $\frac{7}{8}$	173	Siberia . . .	Sir Edmund G. Loder, Bart.

The LION (*Felis leo*).

<i>Ambassa</i> of the Abyssinians.	<i>Libbaka</i> of the Abyssinians (Danakil).
<i>Asced</i> of the Arabs.	
<i>Empologo</i> .	<i>Mkango</i> or <i>Nkalamo</i> in the Chilala and Chibisa countries.
<i>Imbubi</i> of the Swazis and Zulus.	<i>Simba</i> of the Swahilis.
<i>Karamo</i> of the M'Kua.	<i>Tau</i> of the Basutos.
<i>Lendjandnĕk</i> of the Gallas.	<i>Tauw</i> in Barotsiland.
<i>Libbah</i> of the Somalis.	<i>Tauw</i> in Ngamiland.
	<i>Zaki</i> of the Hausas.

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 great points of interest attaching to the species is its wide geographical distribution. Several local races are now recognised. Somali lions, for instance, are smaller and greyer than those from either the Cape or Algeria, although their manes are often very fine; and the Asiatic lion (*F. leo gujratensis*), distinguished by its small, straight, and tawny mane and pale tawny colour, is certainly another distinct local 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). Lieut.-General Sir Arthur Paget estimated the weight of a Somali lion at about 550 lbs. Wild lions never develop the enormous manes frequently seen in 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 measure— from tip of nose to tip of tail.		Height at shoulder.		Girth of forearm.	Girth behind shoulder.	Weight.	Mane.	Locality.	Owner.
	ft. ins.	ft. ins.	ft. ins.	ft. ins.	ft. ins.	ins.						
10 5 (A)	...	10 10½ (raw)	3 7	...	...	...	...	...	...	Full black	S. E. Africa	F. Vaughan Kirby.
10 4	7 2	11 4	...	20	...	...	...	...	...	...	?	Do.
10 4	7 6	10 3 (dressed)	...	...	...	...	...	...	...	Fair	Gir Forest, India	Lord Lamington.
10 4	...	...	...	...	...	...	...	...	...	...	Somaliand	Count T. Zamoyaki.
10 0	6 10	...	3 6	22 (upper arm)	57	434	Fine	...	...	Fine	Edmund's Menageric	W. Yellowby.
10 0	7 0	11 9	3 7½	...	...	...	Fair	...	...	Fair	British East Africa	C. C. Branch.
9 11 (c)	...	11 9 (raw)	3 8	...	...	410	Fine	...	...	Fine	Hartley Hills, Mashonaland	F. C. Selous.
9 11	...	11 5½	3 7	16½	...	...	Do.	...	...	Do.	British East Africa	Norman B. Smith.
9 10½ (tr)	6 8	10 8 (dressed)	3 6	19½	51½	516	Do.	...	...	Do.	Do.	Rear-Admiral R. A. J. Montgomerie, R.N.
9 10 (H)	...	12 1¼ (raw)	3 7	...	49½	...	Full black	...	...	Full black	Mushukulumbwe	Major A. St. H. Gibbons.
9 10	...	...	4 0	19	...	...	...	...	...	...	N. W. Rhodesia	J. Bracken.
9 10	7 0½	10 10	...	...	...	...	Yellow and black	...	...	Yellow and black	Somaliand	The late Capt. J. Johnston Stewart.
9 10 (k)	...	11 6	...	...	...	...	Do.	...	...	Do.	Do.	A. E. Leatham.
9 9	6 9	...	3 6½	17	51½	...	Good	...	...	Good	N. W. Rhodesia	R. C. Forster.
9 8½	6 10	...	...	...	...	...	...	...	...	...	East Africa	Prince Henry of Liechtenstein.
9 8	6 6½	...	3 4½	15½	...	...	Full yellow	...	...	Full yellow	Zomba	R. G. Beswick.
9 8	...	...	3 9	...	...	...	None	...	...	None	British East Africa	Lieut.-Col. J. H. Patterson.
9 7	...	...	...	21½	45	...	Fine	...	...	Fine	P. E. Africa	Capt. M. McNeill.
9 7	...	...	...	...	...	...	Do.	...	...	Do.	Kathiawar	Lord Harris.
9 7	6 8½	...	...	...	...	...	...	...	...	...	East Africa	Prince Henry of Liechtenstein.
9 6	10 5	...	...	19	49	...	...	...	...	...	B. C. Africa	S. Robins.
9 5	6 6	...	...	...	...	...	Lioness	...	...	Lioness	Kathiawar	Lieut.-Col. L. L. Fenton.
8 1½	...	...	2 10½	...	...	260	Do.	...	...	Do.	B. E. Africa	Capt. K. Memertziagen.

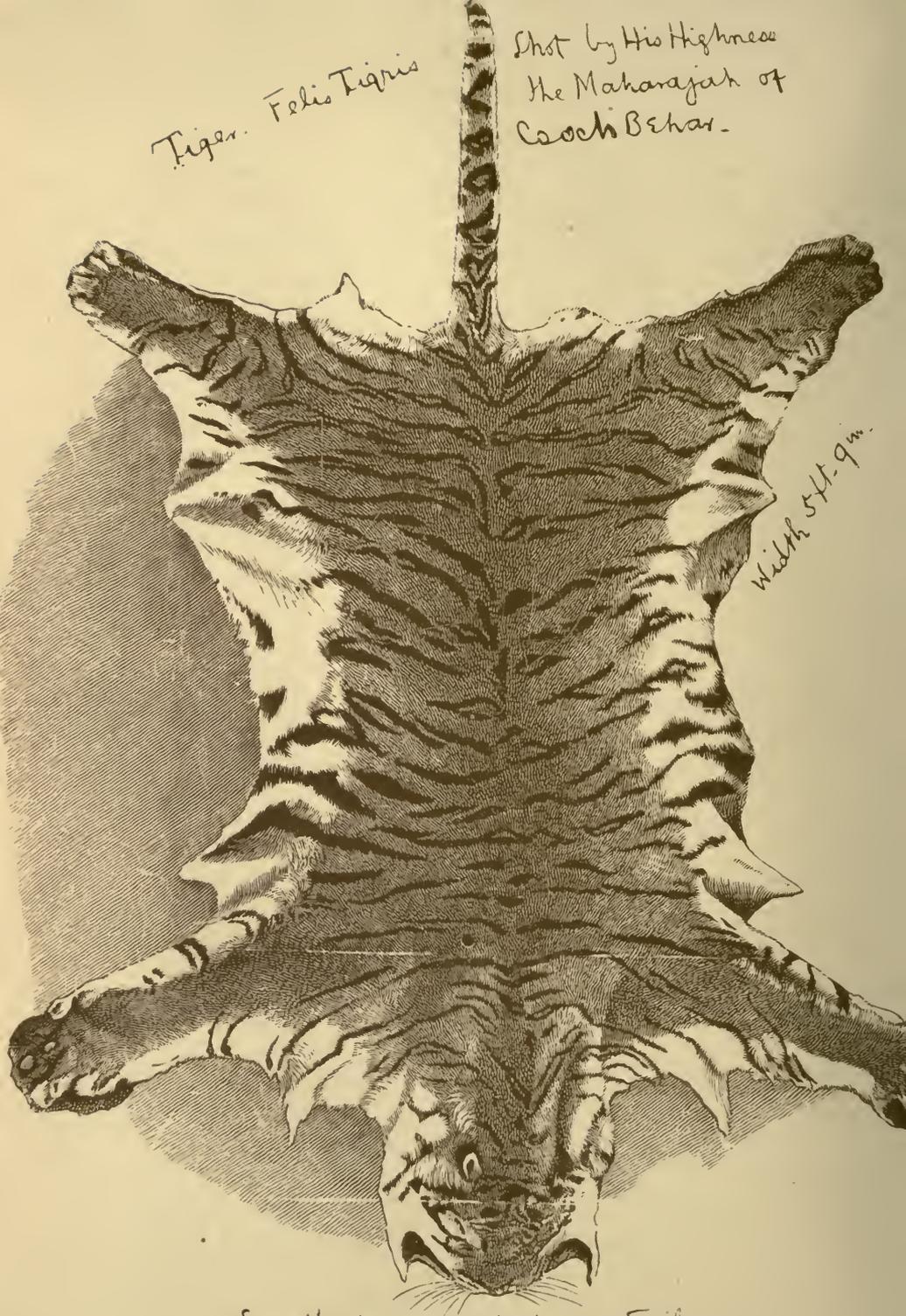
Skulls.

Basal length from back to front.	Width across the zygomatic arches.	Weight cleaned.	Locality.	Owner.
-17	11 $\frac{1}{8}$	...	Delagoa Bay .	Berlin Museum.
16 $\frac{1}{2}$ (A)	10	...	South-East Africa	F. Vaughan Kirby.
16 (end broken)	10 $\frac{1}{4}$	5 lbs.	East Africa . .	E. Gedge.
-16	10 $\frac{1}{2}$	...	?	P. C. Keytel.
15 $\frac{1}{8}$	9 $\frac{3}{4}$	6 lbs.	South Africa .	J. Lamont.
15 $\frac{3}{8}$	10	6 $\frac{1}{2}$ lbs.	Do. .	Hon. C. G. Murray.
15 $\frac{1}{2}$ (D)	10 $\frac{1}{2}$	5 lbs. 3 oz.	East Africa .	Rear-Admiral R. A. J. Mont- gomerie, R.N.
15 $\frac{1}{2}$	9 $\frac{1}{4}$	...	Pungwe . .	Hon. T. Thynne.
15 $\frac{1}{4}$	9 $\frac{1}{4}$	...	East Africa .	S. L. Hinde.
-15 $\frac{3}{4}$ (H)	9 $\frac{3}{4}$	...	Mushukulumbwe	Major A. St. H. Gibbons.
15	10	...	Mashonaland .	Basil H. Woodd.
-15	10	...	Somaliland . .	J. D. Inverarity.
15	10	...	Benguela . .	G. W. Penrice.
15	9 $\frac{1}{2}$	...	Beira . . .	H. T. and A. H. Glynn.
15	9 $\frac{1}{2}$	...	Somaliland . .	H. R. H. le Duc d'Orléans.
15	10	...	Do. . .	Lieut.-Gen. Sir Arthur Paget.
15 (C)	10	5 $\frac{1}{2}$ lbs.	South-East Africa	F. C. Selous.
14 $\frac{7}{8}$	9	...	East Africa .	G. L. Harrison.
14 $\frac{3}{4}$	10 $\frac{1}{2}$	...	Do. . .	Lord Delamere.
14 $\frac{3}{4}$	9 $\frac{5}{8}$	...	N.W. Rhodesia .	J. Bracken.
14 $\frac{3}{4}$	9	...	South-East Africa	H. M. von Archer.
14 $\frac{3}{4}$	9	...	Matabililand .	Capt. Sir K. Fraser, Bart.
14 $\frac{1}{8}$	10 $\frac{1}{8}$	5 lbs.	East Africa . .	C. C. Branch.
14 $\frac{5}{8}$	...	...	Nigeria . .	N. J. Dodd.
14 $\frac{1}{2}$	9 $\frac{3}{4}$	4 lbs.	South Africa .	Sir Edmund G. Loder, Bart.
14 $\frac{1}{2}$	9 $\frac{1}{2}$	..	Do. .	Julius Jeppe.
14 $\frac{1}{2}$	10	...	East Africa . .	Norman B. Smith.
14 $\frac{1}{4}$	9 $\frac{3}{4}$	...	Somaliland . .	Capt. G. Campbell.
-14 $\frac{1}{4}$ (K)	9 $\frac{3}{4}$	...	Do. . .	A. E. Leatham.
♀ 14 $\frac{1}{8}$	8 $\frac{3}{4}$	...	South-East Africa	F. Vaughan Kirby.

- Owner's measurements.

Tiger. *Felis Tigris*

Shot by His Highness
The Maharajah of
Cooch Behar.



width 5ft. 9in.

Length from nose to tip of Tail
before skinning
dried skin

10ft 1½ in
11 - 7 -

The TIGER (*Felis tigris*).

Sher or *Bagh* in India.

A much less noisy animal than the lion, the great striped cat of Asia is also a more variable species, of which at least three local races may be recognised. First, we have the typical Bengal tiger, a large, long-limbed, lithe, and short-haired creature. A much smaller and rougher-haired race (*F. tigris virgata*) inhabits the Caspian provinces of Persia, and it is probably this form that extends into the Caucasus. Thirdly, we have the Manchurian tiger (*F. tigris mongolica*), characterised by its large size, heavy build, short limbs, and the great length and thickness of the fur, which may be less fully striped than in Indian specimens.

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.		Girth of body.	Upper arm.	Girth. Fore- arm.	Head.	Height at shoulder.	Weight.	Locality.	Owner.
	ft. ins.	ft. ins.	ft. ins.	ft. ins.									ft.	ft. ins.	lbs.
10 7 (A)	7 0	12 1	56½	25	19½	36	3 4	491	Ramshai Háb, Duars, Bengal Assam Frontier	Col. Evans Gordon.		
10 6	...	11 8	...	...	...	36	3 5	504	Cooch Behar	H.I.M. the Sultan of Turkey. (Shot by late Baron de Nolde.) His Majesty the King.
10 5	6 11	12 10	51	26	18½	39	3 6	...	Bijnor, N.W.P.	The late A. M. Markham.		
10 4	7 1½	12 2½	52	...	21	...	...	...	Kanara, B.P.	W. Holland.
10 4 (D)	...	...	...	...	...	...	...	...	Duars	Major S. H. Pollen.
10 4 (F)	...	...	...	...	...	...	...	...	Cooch Behar	H.H. the Maharaja of Cooch Behar.
10 3	7 1½	12 1	52	29	19½	36½	3 4½	487	Patli Duar, N.W.P.	The late A. M. Markham.		
10 3 (C)	7 1	12 2	49	...	19½	32½	3 4	...	Cooch Behar	H.H. the Maharaja of Cooch Behar.		
10 2½	7 0	...	48½	26½	20	38½	3 3½	530	Nepal Terai	Sir E. L. Durand, Bart.		
10 2½	...	...	...	...	...	...	...	...	Central Provinces	H.H. the Maharaja of Bilkanir.
10 2	...	...	...	...	...	...	...	...	Cooch Behar	H.I.H. the Maharaja of Cooch Behar.
10 1¾	6 10	12 4	51½	28½	13¾	38	3 4½	462	Rewa, C.P.	H. Bliss.		
10 1½	7 1½	11 7	54	29	21	40½	3 8¾	600	Cooch Behar	H.I.H. the Maharaja of Cooch Behar.		
10 0½	...	12 6	66	...	...	...	...	...	Do.	Do.
10 0	6 11	...	52	26	21	36	3 4	540	Cooch Behar	H.I.H. the Maharaja of Cooch Behar.		
10 0 (E)	...	12 2	...	...	...	...	...	...	Terai	R. Nolan.
9 11½ (H)	6 10½	...	...	...	22	...	3 4	700	Central Provinces	Capt. M. D. Goring-Jones.
9 11	6 9	...	50½	28¾	20½	37	3 3½	...	Cooch Behar	Count E. Hoyos.		
9 11	6 6	11 2	54	...	...	...	...	...	Rewa, C.P.	Do.

9 11	...	11 1½	...	...	...	...	...	Nepal	. A. E. Lentham.
9 10½	6 11	...	54	19½	39½	3 4	508	Cooch Behar	. A. Ezra.
9 10½	6 10½	12 10	...	...	...	...	500	Do.	. Major S. H. Pollen.
9 10½	6 10½	...	55	...	...	...	...	Central India	. A. R. B. Cossart.
9 10	6 6	...	...	...	...	...	...	Nepal Terai	. Lieut.-Col. B. B. Russell.
9 10	...	11 8	...	...	...	...	...	Hyderabad, Deccan	A. M. Rotheram.
9 10	...	...	...	...	...	...	...	Central Provinces	Prince A. Taxis.
9 8½	...	...	48	24½	34½	3 3½	...	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	. W. T. Hornaday.
9 8	...	...	45	...	...	...	...	Terai	. Lieut.-Col. B. D. Möller.
9 8 (11)	...	...	...	...	...	...	...	North Kanara	. Lieut.-Col. L. L. Fenton.
9 5½	6 2½	...	42	20	35	...	...	Cooch Behar	. Lord Villiers.
9 5½ (11)	...	...	...	17	43	...	...	Deccan	. W. J. R. Wingfield.
9 5	6 4	10 4½	49	26	32½	3 2½	420	Cooch Behar	. Count Scheibler.



Manchurian Tiger-Skin.

Skulls.

Basal length from back to front.	Breadth across the zygomatic arches.	Weight cleaned.		Locality.	Owner.
		lbs.	oz.		
-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 $\frac{1}{4}$	10 $\frac{2}{3}$	...	...	N.E. Bengal . . .	A. M. Murdoch.
15 $\frac{1}{4}$	10 $\frac{1}{4}$	...	...	Cooch Behar . . .	Lord Stavordale.
-15 (A)	10 $\frac{2}{3}$	...	...	Bengal . . .	Col. Evans Gordon.
14 $\frac{5}{8}$ (F)	10	...	...	Duars . . .	Major S. H. Pollen.
14 $\frac{1}{2}$	9 $\frac{3}{4}$	4	10	Do. . .	Sir Edmund G. Loder, Bart.
14 $\frac{1}{2}$ (G)	10 $\frac{2}{3}$	...	...	Deccan . . .	W. J. R. Wingfield.
-14 $\frac{1}{2}$	10	...	...	Terai . . .	Bombay Natural History Society.
14 $\frac{1}{2}$	10 $\frac{5}{8}$	...	...	Central Provinces . . .	Capt. W. H. Hunter.
-14 $\frac{1}{2}$ (C)	10 $\frac{1}{4}$	...	...	Bijnor District, N.W.P.	The late A. M. Markham.
14 $\frac{1}{4}$ (H)	10 $\frac{1}{2}$	5	2	Central Provinces . . .	Capt. 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 $\frac{1}{2}$	...	...	Terai . . .	R. Nolan.
-13 $\frac{3}{4}$ (B)	9 $\frac{1}{4}$	...	...	North Kanara . . .	Lieut.-Col. L. L. Fenton.
♀ 13 $\frac{1}{4}$	9 $\frac{3}{8}$	...	...	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. le Duc d'Orléans.
11	3 $\frac{1}{2}$	Do. . .	Col. W. Hall Walker.

The LEOPARD (*Felis pardus*).

Ngo of Uganda. *Harvard* of the M'Kua. *Chita* in India.

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. The African leopard, which has the spots on the body of smaller size, and many of them without light centres, like those on the head, is known as *F. pardus leopardus*, the pale East African leopard being the type of this race. West African leopards are darker. The Somali leopard (*F. pardus 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. pardus panthera*) characterised by its pale colour, long fur, and thick tail; it is to some extent intermediate between the typical race and the ounce. Lastly, there is the Manchurian leopard (*F. pardus villosus*), a very distinct 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 moist forest districts of Asia black leopards are by no means uncommon, and there is a tendency to darkening of a different type in some South African specimens; but these do not constitute distinct local races. 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 8½ inches in length; the length of the tail being 35½ inches, the girth of the neck 21½ inches, of the forearm 11½ inches, and of the body behind the shoulder 35½ inches; weight, 160 lbs.

Distribution.—Africa, the Caucasus, Asia Minor, and Asia generally, with the exception of Northern Siberia, the Tibetan plateau, and Japan.

General Measurements—Indian Specimens.

Length before skinned.	Total length dressed.	Weight.	Locality.	Owner.
ft. ins.	ft. ins.	lbs.		
—8 6	Kashmir . . .	Capt. A. G.'Arbuthnot.
—8 4	Cooch Behar . . .	H. H. the Maharaja of Cooch Behar.
—8 2½	Do. . . .	Do.

— Owner's measurements.

Length before skinned.		Total length dressed.		Weight.	Locality.	Owner.
ft.	ins.	ft.	ins.				lbs.
-8	1½	...	...	...	Cooch Behar . . .	H. H. the Maharaja of Cooch Behar.
-8	1½	...	...	...	Central Provinces . . .	G. W. Hemans.
-8	0	...	...	154	Cooch Behar . . .	H. H. the Maharaja of Cooch Behar.
-8	0	8	8½	...	India . . .	Count J. Potocki.
7	11	...	...	...	Mandla . . .	O. Kauffmann.
7	10	8	4¾	...	Ganges Kadir . . .	See below. ¹
-7	9½	8	6	...	Central Provinces . . .	James J. Harrison.
-7	9	...	...	...	Nepal . . .	C. H. H. B. Caldwell.
-7	9	...	...	...	Oude . . .	Mrs. Innes.
-7	8	...	...	...	Hyderabad, Deccan . . .	Major C. E. G. Norton and Capt. Sir K. Fraser, Bart.
-7	8	...	...	...	Ganges Kadir . . .	Mutra Tent Club. ²
-7	7	8	7½	...	Siwaliks . . .	E. H. E. Green.
7	6	8	10	...	Oudh . . .	H. A. Houghton.
7	6	...	...	...	Chaubattia . . .	Lieut.-Col. R. B. Fell.
-7	4½	...	...	...	Gujerat . . .	Capt. H. J. Morphy.
♀-7	4	8	1	145	Bijnor District . . .	Major E. McK. Williams.
-7	4	...	...	...	Kathiawar . . .	Lieut.-Col. L. L. Fenton.
7	3½	8	2	...	Central Provinces . . .	Lieut.-Col. R. W. Mapleton.
-7	3¼	...	...	...	Do. . .	H. B. Learoyd.
-7	3¼	...	...	...	Kotah . . .	H. H. the Maharaja of Bikanir.

- Owner's measurements.

¹ Speared by Capt. H. Hoare (5th D.G.), Major J. G. Rotton (R.A.), and Major W. Gillman (R.H.A.).

² Speared 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	3½	3	7
Height at shoulder	2	2½	1	9
Girth	2	7	2	1
Circumference of upper arm	0	13	0	10
" forearm	0	10¾	0	8½

General Measurements—African Specimens.

Length before skinned.		Height at shoulder.		Weight.	Locality.	Owner
ft.	ins.	ft.	ins.			
-7	10½	2	7½	...	East Africa . . .	Marquis Pizzardi.
♀ -7	9	2	3½	...	Matabililand . . .	Rhodesia Museum.
-7	3½	...	...	...	Somaliland . . .	Count J. Potocki.
-7	3	...	...	...	Wadelai, E.C. Africa . . .	Col. W. P. Pulteney.
-7	2	...	...	...	Somaliland . . .	Count Scheibler.
-7	3¼	...	...	136½	N.W. Rhodesia . . .	C. H. S. Bellis.
-7	2	...	...	...	South-East Africa . . .	F. Vaughan Kirby.
-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	2	2	1½	...	Jebba, Nigeria . . .	The late Capt. H. W. Baker.
-6	0	...	...	...	Somaliland . . .	Count E. Hoyos.
♀ 5	10½	2	1	55	East Africa . . .	Capt. R. Meinertzhagen.
-5	7	1	10 (girth 21¼ ins.)	...	Nigeria . . .	Col. T. D. Pilcher.

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.		Shoulder height.	Girth of neck.	Girth behind shoulder.	Girth of forearm.	Length of Zygomatic width.	Cleaned weight.
ft.	ins.	ft.	ins.	ft. ins.	ins.	ins.	ins.	ins.	lbs. oz.
6	11	7	2	2 7	22	35½	12½	9¾	6¼ 1 8
6	9	7	2	2 7	20	33½	11¼	9	5¼ ...

Skulls.

Total length.	Width.	Weight.	Locality.	Owner.
ins.	ins.	lbs. oz.		
-10¼	6¾	...	Bijnor District, N.W.P. . .	The late A. M. Markham.
-10⅞	6¼	...	Gir Forest, Kathiawar . . .	Lieut.-Col. L. L. Fenton.
-9¾	6	...	Africa . . .	Julius Jeppe.
9	5¼	1 3	Somaliland . . .	J. H. Thomson.
-9	5¼	...	S.E. Africa . . .	F. Vaughan Kirby.

- Owner's measurements.

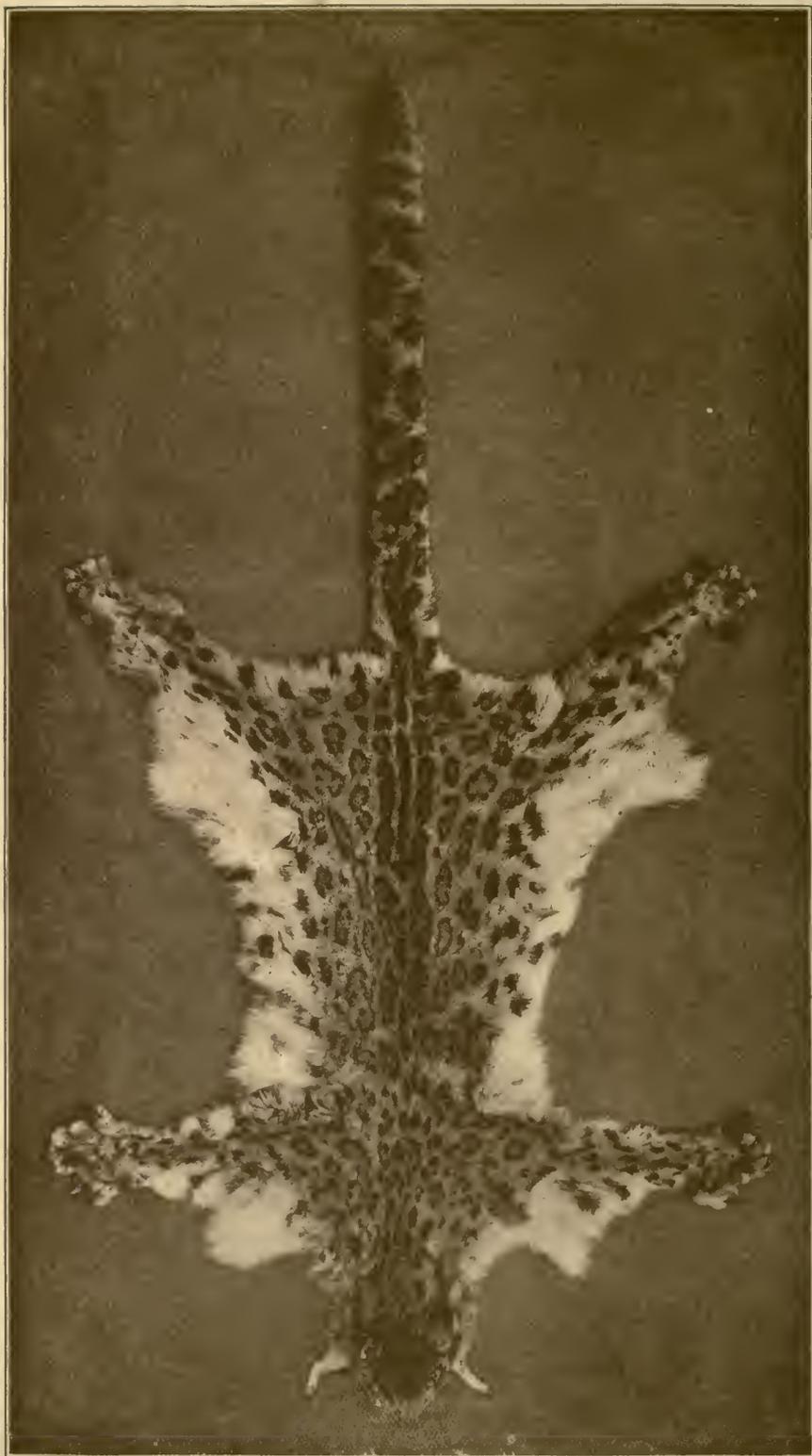
The SNOW-LEOPARD or OUNCE (*Felis uncia*).

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	7	...	Tibet . . .	Rowland Ward.
8	6	...	?	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	4	Skull, $7\frac{1}{10} \times 4\frac{7}{8}$	Kashmir . . .	Major H. C. Tytler.
-7	10	...	Near Leh . . .	Lieut.-Col. S. Frewen.
-7	$5\frac{3}{4}$	...	Pamir . . .	Viscount Edmond de Poncins.
-7	5	...	?	Major F. J. Harden.
-7	4	(24 inches at shoulder)		The late R. A. Sterndale.

— Owner's measurements.



Skin of Snow-Leopard.

The CLOUDED LEOPARD (*Felis nebulosa*).

The *ariman-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 Sikkim and Bhutan Himalaya, through Assam, Burma, Siam, and the Malay Peninsula, to Sumatra, Java, and Borneo. Represented by a smaller variety (*F. nebulosa brachyurus*) in Formosa.

Skins.

Length dressed.		Weight.	Locality.	Owner.
ft.	ins.	lbs.		
-6	6	...	Assam	The late B. H. Hodgson.
-6	4	44½	?	The late R. A. Sterndale.
5	9	...	?	Capt. B. R. M. Glossop.
5	7½	...	Assam	The late B. H. Hodgson.
5	7½	...	Do.	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 skinning.	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 . . .	James 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 in the field.	Weight.	Locality.	Owner.
ft. ins.	lbs.		
-8 6	about 150	...	A. Pendarves Vivian.
-7 6 $\frac{1}{2}$...	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*, 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 variety, and the Canadian lynx (*F. lynx canadensis*), which ranges as far south as California, is another race. The red lynx (*F. rufa*), which is also widely extended in America, and has numerous local races, is a second 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.

Length in the field, nose to root of tail.	Height at shoulder.	Locality.	Owner.
-49½ ins.	...	Andalusia . . .	Abel Chapman.
-42.9 "	...	Eastern Carpathians . . .	Prince Henry of Liechtenstein.
-42 "	23	Do. . .	Count Henry Coudenhove.

(b) TIBET LYNX.

Height at shoulder, 16 or 18 inches.

(c) CANADIAN and RED LYNX.

Length in the field, nose to root of tail.	Height at shoulder.	Weight.	Locality.	Owner.
1-38 ins.	25	60 lbs. (about)	Wyoming . . .	Major G. Dalrymple White.
-33 "	17	...	Do. . .	Capt. M. M'Neill.
2-32 "	22	40 lbs. (about)	Nova Scotia . . .	Major G. Dalrymple White.

- Owner's measurements.

¹ Canadian Lynx.

² Bay Lynx.

(d) CARACAL.

Flat skin.	Locality.	Owner.
46½ ins.	Nr. Grahamstown, S. Africa . . .	Dr. H. Smith.

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.

This animal is the "Ihlose" of the Zulus and Swazis, and 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 writes 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."

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.	Length of tail.	Height at shoulder.	Locality.	Owner.
ft. ins.	ft. ins.			
-7 9	...	...	East Africa . . .	Capt. R. Meinertzhagen.
-7 3 $\frac{1}{2}$	...	...	N.W. Rhodesia . . .	C. H. S. Bellis.
-7 0	...	...	India ^{136$\frac{1}{2}$ lbs.} . . .	The late R. A. Sterndale.
-6 6	2 6 $\frac{1}{2}$	...	Zululand . . .	A. Cameron.
-6 4 $\frac{1}{2}$	2 3 $\frac{1}{2}$	28 $\frac{1}{2}$	N.E. Transvaal . . . 90 lbs.	Dr. Percy Rendall.
-6 0 $\frac{1}{4}$	2 2 $\frac{1}{4}$	...	Near Rajkot, Kathiawar	Lieut.-Col. L. L. Fenton.

— 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.	2 ft. 9 ins.	2 ft. 11 $\frac{1}{2}$ ins.	8 $\frac{1}{4}$ ins.	31 ins.

The SPOTTED HYÆNA (*Hyæna crocuta*).

Somali *Uaraba*.
 Danakil *Yangula*.
 Abyssinian *Jib*.
 M'Kua *Kochupa*.
 Mpisi in *Ugandu*.

Setongwani in Barotsiland.
Piri in Ngamiland.
Chimbwi in the Chilala and Chibisa
 countries.

The hyænas form a small family of Carnivora allied in some respects to the cats, but distinguished by the form 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 is the largest of the three well-marked 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.

Nose to root of tail in a straight line.	Length of tail.	Extreme length over all.	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.

Skulls.

Length.	Width.	Weight.	Locality.	Owner.
ins.	ins.	lbs. oz.		
-12¼	7¼	2 8	South-East Africa	F. Vaughan Kirby.
-12¼	7¾	2 12	Zomba, B.C.A.	D. MacAlpine.
11½	7⅞	...	Benue River	E. J. Wolseley.
-11	7½	...	Somaliland	Viscount Edmond de Poncins.
-11	6¾	...	South-East Africa	F. Vaughan Kirby.
-10¾	6¾	2 3	East Africa	Rear-Admiral R. A. J. Montgomerie, R.N.

- Owner's measurements.

The STRIPED HYÆNA (*Hyæna striata*).

Distribution.—India, Arabia, etc., and North and East Africa.

Nose to root of tail.	Length of tail.	Locality.	Owner.
ft. ins.	ft. ins.		
3 6	1 5	India	Dr. T. C. Jerdon.



Brown 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 may be mentioned: 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—not that this is a matter of very much importance one way or another. The typical member of the group is the familiar brown bear (*Ursus arctus*) of Europe, whose 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 Siberian and Kamchatkan bears (*U. arctus collaris* or *piscator*) grow to 9 feet. Even more gigantic is the Kodiak bear (*U. arctus middendorfi*) 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 typical grizzly of the Rocky Mountains is a smaller animal, with longer and straighter claws, but scarcely entitled to rank as more than another local race (*U. arctus horribilis*), next to which comes the Barren Ground bear (*U. arctus richardsoni*). Finally, the last animal which can be included in this group of the genus is the African 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. It is noteworthy that the bears of Alaska are much closer to the brown bear of N.E. Asia and Europe than is the grizzly, which is just what would be expected, and indicates the propriety of regarding all as local races of a single species.

The little blue bear (*U. pruiuosus*) 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 is generally black, and exhibits distinctive features in the skull and teeth. Not improbably the Himalayan black bear (*U. torquatus*) is a relative of the last-named species; it may be recognised by the conspicuous white gorget on the breast. In Japan it is represented by the Japanese black bear (*U. japonicus*). The smallest species of the genus

are the very distinct Malayan bear (*U. malayanus*) and the allied spectacled bear (*U. ornatus*) of the Peruvian and Bolivian Andes, the latter 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 group 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.			
18 $\frac{3}{4}$	11 $\frac{3}{8}$	12 0	Cave bear	Europe.	Sir Edmund G. Loder, Bart.
18	11	10 0	Kamchat- kan	Siberia.	Hon. Walter Rothschild.
17 $\frac{1}{2}$	9 $\frac{1}{8}$	6 5	?	Alaska.	Capt. C. R. E. Radclyffe.
-17 $\frac{1}{4}$	10 $\frac{3}{8}$	...	...	Do.	Rev. Dr. R. J. Nevin.
17 $\frac{1}{4}$	10	6 12	...	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 $\frac{3}{8}$	9 $\frac{1}{8}$	5 14	...	Kamchatka.	Capt. C. R. E. Radclyffe.
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.	Comdr. R. E. R. Benson, R.N.
14 $\frac{1}{4}$	9	...	Brown	Do.	St. George Littledale.
14 $\frac{1}{2}$	8 $\frac{1}{4}$	4 8	Grizzly	Brit. Columbia	S. B. Bennett.
14 $\frac{3}{8}$ (C)	8 $\frac{1}{4}$	5 0	Do.	New Mexico.	Montague Stevens.
13 $\frac{5}{8}$	8 $\frac{3}{8}$	...	Snow	Kashmir	B. H. Shaw-Stewart.
-12 $\frac{5}{8}$	7	...	Sloth	Mysore	Capt. M. McNeill.
12 $\frac{1}{2}$	7 $\frac{3}{8}$	...	Do.	Cent. Prov.	C. F. Egerton.

- Owner's measurements.

BEARS

Basal length from back to front.	Width across the zygomatic arches.	Weight cleaned.	Race, or Species.	Locality.	Owner.
ins.	ins.	lb. oz.			
12½	7	...	Grizzly	Wyoming	J. L. Scarlett.
12½ (B)	6¾	...	Sloth	Cent. Prov.	Surgeon-Major M. O'C. Drury.
12¾	7⅝	...	Snow	Kashmir	A. Ezra.
12¾	7½	...	Do.	Do.	Col. C. B. Wood.
12¾	7⅝	...	Grizzly	Wyoming	J. L. Scarlett.
12	7⅝	...	Sloth	Cent. Prov.	C. F. Egerton.
11½ (A)	6¾	...	Brown	W. Caucasus	St. George Littledale.
8·5	8·3	...	Malayan.	Borneo	The late W. T. Blanford.

(b) Skins.

Length from nose to tip of tail.	Length of skin.	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 6½	10 2 ¹ (from one front paw to other)	...	1536	?	Nevada, 1881.	W. F. Sheard.
...	-11 6	...	...	...	?	Alaska	American Museum of Natural History.
...	9 10	...	...	...	Alaskan	Do.	Rowland Ward.
...	9 8	...	...	...	Do.	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.
...	8 10	4 0 (mounted)	...	...	Do.	Do.	British Museum.
-8 7	...	...	...	1600	Polar	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	...	...	...	...	Black	Kashmir	Major W. Westropp White.
-8 3	...	...	...	...	Kamchatkan	Kamchatka	Dr. F. H. H. Guillemard.
-8 0½	...	...	...	...	Grizzly	Wyoming	T. W. H. Clarke.
-8 0	...	...	...	...	Polar	Spitzbergen	A. Barclay Walker.
-8 0(D)	...	3 11	...	...	Grizzly	Brit. Columbia	Sir Peter Walker, Bart.

- Owner's measurements.

1 Measurement of head in the flesh from tip of nose to base of skull, 29 inches; between ears, 16 inches.

RECORDS OF BIG GAME

Length from nose to tip of tail.	Length of skin.	Height at shoulder.	Girth.	Weight.	Race, or Species.	Locality.	Owner.
ft. ins.	ft. ins.	ft. ins.	ft. ins.	lbs.			
-8 0 (C)	735	Grizzly	New Mexico	Montague Stevens.
-7 11	800	Brown	Norway	Capt. Gerard Ferrand.
7 9½	1162	...	Alaska	Capt. C. R. E. Radclyffe.
-7 9	Snow	Kashmir	Lieut.-Col. C. F. Blanc.
-7 5½	Black	Wyoming	T. W. H. Clarke.
-7 4	Snow	Kashmir	B. H. Shaw-Stewart.
-7 0¾	680	Brown	Lithuania	Prince Radziwill.
-7 0	...	3 2	...	...	Do.	India	Lieut.-Col. A. E. Ward.
-6 11	Black	Wyoming	James J. Harrison.
-6 10	...	3 0	4 4½ forearm	423	Sloth	Cooch Behar.	H.H. the Maharaja of Cooch Behar.
-6 9½	25	...	Red	Kashmir	S. V. Occleston.
6 8	...	4 0	...	625	...	Kodiak I.	A. W. Merriam.
-6 8 (B)	Snow	Kashmir	A. Ezra.
-6 6	Grizzly	Wyoming	Count E. Hoyos.
-6 5	Do.	Do.	J. L. Scarlett.
-6 4½	Red	?	Major H. M. Biddulph.
-6 3	Grizzly	Wyoming	J. L. Scarlett.
-6 2½	Black	Brit. Columbia	Count E. Hoyos.
-6 1½	Sloth	Mandla, Cent. Provinces	Capt. B. H. Boucher.
-6 1	Cinnamon	Wyoming	James J. Harrison.
-6 0½	Sloth	Hyderabad	Count E. Hoyos.
-6 0	...	4 6	...	...	Black	?	Col. H. G. Mainwaring.
-6 0	...	3 0	...	280	Do.	?	The late G. P. Sanderson.
-5 10½	...	3 0	3 4	...	Snow	?	Major H. M. Biddulph.
-5 5	...	2 5¾	2 10¾	250	Black	Brit. Columbia	Count Scheibler.
-5 2½	...	2 11¼	4 4	600	Grizzly	Do.	Do.
-5 2 (A)	Brown	W. Caucasus	St. George Littledale.
-4 7	?	Asia Minor	H. O. Whittall.

- Owner's measurements.

N.B.—Some of the specimens entered as "Grizzly" may be the Barren Ground bear.

The WALRUS (*Odobaeenus rosmarus* and *O. obesus*).

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, which are adapted for crushing the shells on which these monsters feed, 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, now generally regarded as separate 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 they do not appear to inhabit the vast extent of coast lying between the western shore of Hudson Bay and Alaska. The Pacific walrus, which is the larger animal of the two, with considerably the longer tusks, always had a restricted range, and is now becoming very scarce. In European museums it appears to be represented only by skulls and tusks, and even these are rare. 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.	Weight. lbs. oz.	Girth.	Locality.	Owner.
36	...	...	?	Sir Thos. Hesketh, Bart.
-33½ ¹	7 10½	8½	Kamchatka . . .	G. E. H. Barrett-Hamilton.
32½	...	8½	?	Bethnal Green Museum.
-32	9 9	...	Pacific . . .	Norwich Museum.
-31	6 1	...	...	F. Gordon George.
30½	...	9½	Kamchatka . . .	Lieut. H. A. Gillett, R.N.
29	...	9¼	Arctic America . . .	C. C. Branch.
-25½	...	8½	Baffin Bay . . .	W. Livingstone Learmonth.
...	Length from gum 22½	7¾	Spitzbergen . . .	Sir Edmund G. Loder, Bart.
...	20¾	7½	Do. . .	Sir Victor Brooke's Collection.
...	18½	7½	Do. . .	Arnold Pike.
...	♀ 18	4¾	Do. . .	A. Barclay Walker.

¹ 25½ from gum.

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.		lbs.	
9	4½	7½	...	Major H. A. Steward.
8	8¼	8½	...	Bethnal Green Museum.
-8	7	...	...	Royal Scottish Museum.
8	7	8¼	15	Sir Edmund G. Loder, Bart.
8	3¼	7¾	...	Bethnal Green Museum.
8	2	...	...	American Museum, 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 it with four pegs ; one at the end of nose, one at end of tail, one at root of tail, and the fourth at the nape of neck behind 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 :—

<p>A to F. Straight length from nose to tip of tail.</p> <p>A to E. Length along curve to root of tail.</p> <p>E to F. Length of tail.</p> <p>A to B. Length of head to nape of neck.</p> <p>N. Girth, upper arm.</p> <p>M. „ fore-arm.</p> <p>O. „ of body.</p>	<p>P. Girth of head.</p> <p>D to G. Height at hind-quarters.</p> <p>C to L. „ shoulder.</p> <p>K to L. Length of fore-leg.</p> <p>H to G. „ hind-leg.</p> <p>Weight, cleaned.</p> <p>„ not cleaned.</p> <p>Cleaned skull (length, breadth, height, weight).</p>
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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.



Tiger shot by Lieut.-Col. H. G. C. Swayne in the Central Provinces.



Head of African Lion.

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