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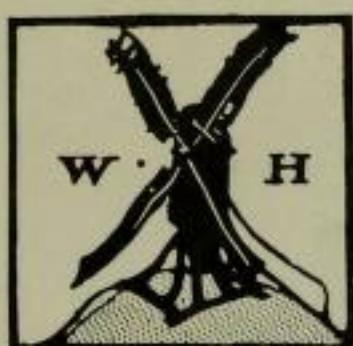
# The Encyclopaedia of Sport & Games

EDITED BY  
THE EARL OF SUFFOLK AND BERKSHIRE

*A New and Enlarged Edition with Colour Plates  
and Illustrations from Photographs and Drawings*

VOLUME I  
**A — CRICKET**

*WITH OVER FIVE HUNDRED ILLUSTRATIONS*



LONDON: WILLIAM HEINEMANN

1911

you, shoot anywhere, at his rump or tail; load quickly, and fire into his chest as he turns round to charge. If below you, aim between his shoulders or loins, or at the centre of back. Should you suddenly come on a she-bear with cubs, kill the old one first; if the cubs escape, fix up the mother's carcass and wait near; you will then probably bag them also. In the event of shooting a cub at some distance from the mother, load immediately, and hide near the body, for she will certainly turn up sooner or later. Should she rush in on you, making a loud, angry "huff, huff," keep your nerve and shoot straight. Never approach a dying or apparently dead bear with unloaded rifle, but go up cautiously with both barrels at full cock. Do not smash the skull with your finishing shot, as one in the neck or behind the head is equally effective.

**Measurements.**—Scandinavian bears will run up to nearly 900 lb. in weight, and a skin has been measured 9 ft. 3 in. long and 6 ft. wide. The largest shot by the writer weighed about 800 lb., having a skin 7 ft. 11 in., from nose to tail, by 4 ft. 8 in. in width. Thirty-five years is about the limit of age.

**Guns and Ammunition.**—A '500 or '450 express, by a good maker, firing a conical expanding bullet with a thick solid base and small, shallow hole at apex is a very useful weapon, being accurate at long ranges and effective at close quarters.

GERARD FERRAND.

#### BIG GAME.—

**AFRICA.**—Although shooting in Africa has vastly changed since Captain Cornwallis Harris (the forerunner of the great hunters) first entered the present Transvaal country in 1836, and discovered a wilderness teeming with game, where the sound of the rifle had never yet been heard, there is still, if the sportsman will travel far enough, plenty of sport to be got among the great fauna. But the wonderful plenty of what may be called the great game-slaying epoch—1836 to 1890—is not nowadays to be found except in a few remote and difficult places. The sportsman, then, must be prepared to work much harder, and to travel very far before he can find and bag big game. He will discover, as a general rule, that heavy game in Africa is much wilder and more suspicious than of old, and that its pursuit involves much more difficult hunting. Many species of game that fifty or sixty years ago grazed quietly in vast legions upon the open plains, and merely stared at the wagons as they plodded slowly across the Veldt, now drink

by stealth during the night, feed across the flats at very early morning, and then betake themselves to the bush, where they find sanctuary during the hot hours. The mere pursuit of many of these animals frequently involves long and weary days in the saddle, starting from the wagons before sunrise, and often not coming up with the game until after several hours of steady spooring, which is undertaken by a native hunter or bushman. Perhaps another two hours are occupied in the actual chase, and the operations of skinning and cutting up, after which ensues a long ride of possibly another five or six hours back to the wagons. Not infrequently, after leaving camp at dawn, the hunter does not reach it again until dusk or even darkness has set in. To hunt successfully in South Africa nowadays, therefore, the sportsman should possess patience, endurance, an even temper, and a hardy frame. The actual shooting of the game, in itself not always an easy operation, is by no means the most difficult part of the business of modern South African hunting. The mere fatigue of riding under a burning sun for from eight to ten hours, or even more, day after day, over a rough, and often parched and waterless country, is no light matter. And even with good and willing native servants (not always to be counted upon), the labours of the day are by no means ended when the camp fire is reached. The skinning of specimen heads, and perhaps rare birds, which should never be entrusted to raw natives, cleaning guns, changing camera plates, writing up the diary, seeing that horses and dogs are fed, and many other necessary matters, have to be attended to before the wanderer can settle himself down by the fire, and enjoy in quiet his pipe and cup of coffee.

If, however, the sportsman is possessed of patience and a determination to succeed, he will find at the end of a week's hunting that his labours are becoming somewhat lightened. Every succeeding day hardens him and puts him in condition. The irksome detail of carrying a heavy rifle in the right hand during a long day while riding, which at first seemed so wearying, becomes a mere trifle as the muscles of the arm grow hardened to the task; and so with the rest of the labour. In some parts of Africa, where Tse-Tse fly abounds, and horses cannot be used, the fatigue of hunting on foot, no light operation in Africa, has to be faced. In these districts, however, bush and covert are more abundant, the game has been less disturbed, and shots are more easily obtained.

**Hunting-grounds and Game.**—Thanks to the advance of railway communication in South Africa, the traveller can get within hail of his hunting-ground, at the present day, with far more ease and at considerably less expenditure of time and money than was formerly the case. It is not worth while lingering in Cape Colony, unless it be intended to shoot the smaller antelopes, such as springbok, klipspringer, steinbok, duiker, rhebok, bushbuck, and bluebuck, or in the Orange River Colony and Transvaal. If the sportsman is minded to shoot in Khama's Country, Eastern

plentiful, while elephant, black rhinoceros, and giraffe may be occasionally encountered. Hunting, however, must be performed on foot. All information as to outfit and cost of hunting in Southern Rhodesia, North-West and North-East Rhodesia can be obtained at the offices of the British South Africa Company, 2 London Wall Buildings, London, E.C.

North-West Rhodesia is one of the best game countries now to be found in Africa. This can be reached by the Cape Town to Cairo Railway, which carries the passenger as far as Broken Hill (rail-head) for the



(Photo, by A. Radcliffe-Dugmore.

TWO RHINOCEROS ABOUT TO CHARGE.

Matabeleland, and towards Lake Ngami and the Zambezi, his best plan will be to proceed by rail direct from Cape Town to Serowe (Palachwe Road) or Bulawayo, and fit out there. If he means to hunt in Mashonaland (Southern Rhodesia) he will do best to go on to Salisbury, and there procure his wagon, stores, and equipments; from Salisbury also can be reached the country between Beira and the Zambezi, one of the best hunting-grounds now left to South Africa. In this latter country buffalo are still found, and roan and sable antelope, eland, blue wildebeest, Lichtenstein's hartebeest, waterbuck, reedbuck, spotted bushbuck, inyala, kudu, pallah, tsesseby, Burchell's zebra, wart-hog, bush-pig, lion, leopard, and hippos are fairly

sum of £20 8s. 11d. first class, £14 14s. 2d. second class, or £8 8s. 1d. third class. From here also the magnificent sporting-grounds of North-East Rhodesia can also be reached. The game of these regions include elephant, rhinoceros, hippo, buffalo, Burchell's zebra, giraffe, eland, kudu, hartebeest, blue wildebeest, sable and roan antelope, waterbuck, lechwe, puku, pallah, sitatunga, tsesseby, reedbuck, bushbuck, duiker, steinbuck, oribi, grysbuck, ostrich, lion, leopard, hyæna, &c. In Khama's Country, Matabeleland, and Ngamiland, elephants and rhinoceros are for the most part shot out, but most of the above-mentioned species can be procured and the splendid gemsbok is also to be encountered. In South-West Africa, in German territory, especially in

the Kaoko Veldt, and in the Ovampo Country, fair sport may be obtained. Behind Benguela and Mossamedes, in Portuguese West Africa, elephant, buffalo, lion, leopard, zebra (mountain and Burchell's), Penrice's waterbuck, lechwe, eland, roan and sable antelope, kudu, and other antelopes, as well as lion, leopard, and other carnivora are to be found. Here, however, bush is very prevalent, the country is difficult to work, native servants are bad and hard to get hold of, and neither wagons nor horses can be always reckoned

oryx beisa and oryx callotis, Clarke's, Waller's, and Thomson's gazelles, sitatunga, bushbuck, bongo, reedbuck, klipspringer, duiker, steinbuck, oribi, lion, leopard, buffalo, giraffe, Burchell's and Grévy's zebras and ostriches. Elephants and black rhinoceros, as well as hippopotami, are in some parts numerous. But it is to be remembered that hunting has to be conducted mainly on foot, and, as a general rule, it may be stated that the climate, especially near the Equator, is more trying than in South Africa. Somaliland, where horses



HERD OF GIRAFFE NEAR THE TANA RIVER.

(Photo, by A. Radclyffe Dugmore.

on. Good sport can also be obtained in Portuguese East Africa.

British East Africa is, of course, one of the finest game countries to be met with at the present day. Landing at Mombasa, the sportsman now finds much of his former difficulty of transport obviated by the Uganda Railway, which takes him right up to the best of the hunting-grounds, and puts him down at the most favoured spots. Nairobi, a rapidly growing town on the Athi plateau, is the best place to fit out from. In British East Africa, in addition to a large number of well-known antelopes, such as kudu, lesser kudu, various hartebeests, blue wildebeest, pallah (or impala), eland, waterbuck, and roan and sable antelope, are to be found the rare Hunter's antelope,

can be employed, is still a fair sporting country, where many species of big game are to be encountered. The White Nile and Bahr-el-Ghazel regions also offer fine shooting-grounds—with the drawback of a feverish and exhausting climate.

**Outfit, Expenses, &c.**—For hunting in all Africa south of the Zambesi, except in the Beira Country and a few districts close to the river itself, wagons, oxen, and horses can be employed. They can be used also in parts of North-West Rhodesia, in German South-West Africa, and at times in Portuguese West Africa. If the sportsman fits out in South Africa, say at Serowe (Khama's Town), Bulawayo, or Salisbury, he may reckon upon buying a good second-hand wagon outright for from £80 to

£110. Oxen will probably cost from £8 to £10 per head; good hunting-ponies from £40 to £70. Ordinary ponies, which can be broken to the gun, can be purchased in South Africa, at places like Mafeking or Serowe or Bulawayo, for from £25 to £35. The hire of a wagon and team of oxen or donkeys would cost in Southern Rhodesia about £1 10s. per day; a full span of oxen for a Cape hunting-wagon is eighteen. Donkeys are much slower travellers than oxen, and the latter are preferable. The wear and tear of horseflesh is very considerable, and each sportsman should take with him not less than three reliable hunting-ponies. If the hunting trip takes place in winter, the best season—from May to October—a "salted" horse, which is an expensive luxury, is not necessary. Mealies (Indian corn) should be carried on the wagon for the purpose of feeding the stud, and nosebags save waste and are always useful. When travelling among native tribes, mealies and Kaffir corn (millet) can usually be purchased. These vary in an average season from 10s. a bag (205 lb.) to 35s., and occasionally more, in time of drought and scarcity. With each wagon are required a driver, whose wages should not exceed from £2 10s. to £3 10s. per month, and leader £1 to £1 10s. per month. Horse-boys get about £1 per month. A native cook should be secured for £3 10s. per month. All native servants have, of course, to be found in food, chiefly mealie meal and game meat. A small waterproof oblong tent is a useful thing, if the trip is to be a prolonged one. This can be lashed on to the buck-rail of the wagon. Every necessary article required for a hunting expedition (tea, coffee, sugar, tinned milk, tinned meat and fruits, mealie meal, Boer meal, pots, pans, &c.) can nowadays be procured at up-country stores at Bulawayo, Salisbury, Serowe, and Kalomo. In North-West and North-East Rhodesia it would probably be better to secure the services of an experienced white hunter, who would act as guide and transport-master, and undertake the whole outfit of the expedition. The British South Africa Company will furnish the names of reliable men undertaking such work. In North-West Rhodesia the cost of hire of a heavy and light wagon, and oxen, three horses, drivers, native servants and cook, including maintenance, would run to from £150 to £200 per month. This would be for a party of two, and the guide's own time and remuneration would be included. Where an expedition is conducted on foot, in Tse-Tse-fly country, for instance, where horses, oxen, and wagons

cannot be employed, the cost should not exceed, for a party of two, £50 per month.

As regards other items of outfit, it is a mistake to use heavy saddles; light English saddles, furnished with plenty of "dees," and bridles should be taken out from England. Half a common cotton Kaffir blanket, folded small and placed under the saddle, saves horses many a sore back. Breeches or knickerbocker breeches of velvet cord, moleskin, or Burberry are best for the veldt. Strong brown boots and pigskin gaiters, or field-boots, are best for foot and leg gear. A broad-brimmed felt hat, plenty of flannel shirts, and a strong cord or Burberry coat for hunting in thorn or bush country, when following game on horseback, complete the outfit. The coat can be strapped on the saddle-bow, and a compass, a box of matches, and a full water-bottle should never be omitted when leaving the wagon in search of game. When hunting in Equatorial Africa, a sun helmet (the Khaki Service pattern is best) will replace the South African felt hat. A pair of light field-glasses should always be carried. A small case of medicines, preferably in tabloids (Burroughs and Wellcome's can be strongly recommended), in case of fever or dysentery, should be remembered. Corrosive sublimate or permanganate of potash tabloids, for treating sores and wounds, should be carried, and, if hunting beyond the Zambesi or in South-East Africa, a fine-mesh mosquito net should also be taken. When hunting in the waterless deserts of the Kalahari and Western South Central Africa, where the loss of one's horse may mean disaster, it is a wise plan to secure one's mount to the hunting-belt by means of a cord or thin hide *riem*, the other end of which is made fast to the cheek-ring of the bridle. With a little practice, a South African horse will almost always stand quietly for the shot. A few mongrel dogs are useful for baying lion, leopard, or other dangerous game, and guarding the wagons. A pointer should certainly be taken for finding feathered game. It may be noted that at the end of a hunting-trip the whole outfit, including wagons, spare rifles, horses, and stores, can usually be sold, for about the price paid for them, on the hunter's return to a frontier town and semi-civilisation. With average luck and judgment, therefore, a South African hunting expedition need entail nothing like the extravagant expenditure hinted at by luxurious travellers.

It is a good thing to take green rotproof canvas sacks for scalps and skins of game. These, when dry, should be sprinkled with

naphthaline, and the sacks carefully sewn up. They are then practically insect proof. If the expedition is away for a long period, the skins should be gone through again before shipping for home.

In East and Central Equatorial Africa the cost of hunting is a good deal increased by the number of native carriers required to convey stores, ammunition, guns, and camp equipment. The Uganda Railway has, however, obviated some of this expense. The actual cost of an expedition of some length would probably work out at something like £80 or £100 per month, if a man were hunting alone. If headquarters were made at Nairobi, and short trips taken from the railway, the expense would be considerably less. At Nairobi, at the present day, most of the necessary stores can be procured, and competent hunters, who will undertake entire charge of the expedition, are also to be obtained. Many experienced sportsmen, however, still prefer to take all stores out from England. It is to be remembered that a considerable reduction in customs duties is made on goods sent as freight. All stores, such as provisions and ammunition, should be packed in 55-lb. or 60-lb. cases. If the cases measure 24 ins. by 14 ins. by 19 ins., they can be carried with equal convenience by men or donkeys. Trade goods, for barter and payments, can be conveniently bought in East Africa. In Somaliland, which is reached from Aden, camels are used for crossing the waterless desert which separates the coastline from the hunting-country.

**Battery.**—We come now to that most important subject, the choice of weapons. For any part of Africa, at the present time, a useful battery would be the following:—

(1) A '400 double smokeless-powder (axite or cordite) Express rifle, accurately sighted for shooting on the plains. This is a most useful weapon for all-round sport, from elephant or rhinoceros to a springbuck or gazelle.

(2) A Mannlicher sporting rifle, '256 calibre; magazine action; 5 shots. As a light weapon, weighing no more than 7 lb., this rifle, for all ordinary game, is very hard to beat. It has an extremely low trajectory, and shoots with great accuracy up to 400 yards. For stalking, in plain or hill country, it is a most excellent weapon.

(3) A 12-bore ball- and shot-gun of modern and improved type. These guns are extremely useful in bush or jungle, when in pursuit of dangerous game. They are as handy as a shot-gun and need weigh no more than 7 lb. Westley Richard's "Explora" is a first-rate weapon of this type. It has great smashing power, good penetration, and carries accurately up to 300 yards. It can be used as a shot-gun, if required.

(4) A 12-bore shot-gun for bird shooting.

Such a battery would be sufficient for all needs of the present day in Africa; and if

the writer were starting for the hunting-veldt to-morrow, he would desire no more complete outfit in the shape of guns and rifles. An alternative battery might be chosen as follows:—

- (1) '450, '465, or '470 smokeless Express.
- (2) '275 Mauser-Rigby sporting magazine rifle.
- (3) "Explora" ball- and shot-gun.
- (4) 12-bore shot-gun.

If, however, the sportsman desires a weapon of yet heavier calibre for use against such formidable game as elephant, rhinoceros, and buffalo, he can make use of a '600 smokeless Express, which gives a velocity of rather more than 200 feet per second, and has the enormous striking force of 8,700 foot-pounds, or about 1,700 lb. more than the heavy four-bore rifle formerly in use. Such a weapon can be relied upon to stop or turn the charge of an elephant at close quarters. At the present day, however—so great has been the extension in the power of rifles since the introduction of smokeless powder and improved bullets—the average hunter is content with no heavier weapon than a '450 or '500 rifle, even against the most formidable and dangerous of game. Armed with such a weapon, and with a really good ball- and shot-gun, such as the "Explora" or "Paradox," carried in reserve by a reliable gun-bearer, the sportsman need by no means be afraid to tackle elephant, rhinoceros, buffalo, or lion in bush or forest country.

For stalking antelopes and other game on the plains, or in hill country, great improvements have, in recent years, been made in sighting. Good aperture backsights can be fixed at very trifling cost; these greatly increase accuracy in shooting, and are a very distinct advantage at either moving or stationary objects. A still greater improvement is the telescope sight, which can be readily affixed to the rifle, and for long range stalking enormously increases the shooting powers of the gunner. Great care, however, should be taken in the selection of such a convenience, and only those to be obtained from high-class rifle-makers, whose telescope-sights have been well proved in the field, under the rough and ready conditions of foreign sport, should be chosen. Messrs. John Rigby & Co. and W. J. Jeffery & Co. have acquired well-deserved reputations for these sights.

**Hints on Shooting.**—As regards the actual shooting of game, it may be said that only experience in the field can teach a man the knowledge of which he stands in need. Spooers and native hunters may be relied upon to take the gunner up to the game he seeks; the rest of the business

lies entirely with himself. In shooting lions, leopards, and other thin-skinned game at close quarters, the modern smokeless-powder rifle, preferably of a calibre of not less than .350, in conjunction with an expanding bullet, is a very deadly weapon. A broadside shot through the heart or lungs, or a chest shot, if the beast is facing the gunner, is pretty certain to kill or turn dangerous carnivora. The frontal head shot for elephants, often resorted to in the East, is not so frequently relied upon against the African elephant, which has a more convex skull. Since the introduction

In shooting heavy game, most beginners usually make the mistake of firing too high for the vital parts. The aim should be, if possible, directed just behind the point of the shoulder, a trifle below the middle of the body. A shot through the neck vertebrae of any formidable animal is instantly disabling. It should always be remembered that for thick-skinned game, such as elephant, rhinoceros, buffalo, and giraffe, only solid bullets should be used.

**Game Laws and Licences.**—It is to be remembered that Game Laws now obtain in all parts of Africa. Wherever the sports-



HERD OF GRANT'S GAZELLE.

(Photo, by A. Radclyffe Dugmore,

of the modern high-velocity rifle and smokeless powder, however, African elephants have often been killed in this way, even with bullets of such slender calibre as the .303. A much safer shot with African elephant, however, is that between the eye and the ear, when the brain is pierced with a well-directed bullet. With these enormous beasts, however, a heavy-calibre bullet, directed at the heart or lungs, is the safer shot. Rhinoceros are, as a rule, not difficult beasts to kill, and are often surprised and slain at close quarters; a shot from a .450 to .577 rifle, or a twelve-bore—using the solid bullet—through the heart, lungs, or neck vertebrae, may be confidently relied upon to bring this gigantic game to bag.

man may direct his steps, he has not only to pay a licence, usually varying from £25 to £50, but is very properly restricted in the number of head of game that he may shoot. Game regulations vary in different countries, and are frequently being added to or altered. Broadly speaking, it may be said that for a £25 licence the gunner will be allowed to shoot several specimens of most of the numerous antelopes of the country, as well as zebra, wart-hog, bush-pig, lions, leopards, and other carnivora. If he desires to shoot elephant, rhinoceros, giraffe, buffalo, and a few of the rarer antelopes—of course, in restricted numbers—he will have to pay a £50 licence. In East Africa, at the present time, on the £50

licence, which lasts for one year from the date of issue, the gunner may shoot two elephants (tusks to weigh not less than 60 lb.), one buffalo, two rhinoceros, two hippos, two zebra, two oryx callotis, two oryx beisa, one roan antelope, one sable antelope, two kudus, two topi, ten Juba-

shoot three eland bulls, one kudu bull, five bulls and three cows of the sable antelope, and three zebra. In Southern Rhodesia, under an ordinary £1 gun licence, not only may all the numerous game-birds be shot, but also all the smaller antelopes, such as klipspringer, steinbuck, duiker, &c.



CARIBOU.

land topi, two Neumann's hartebeest, one bongo, ten Grant's gazelle, ten Thomson's gazelle, ten Jackson's hartebeest, ten Coke's hartebeest, ten impala, ten reedbuck, ten duiker, ten klipspringer, ten waterbuck, ten wildebeest, ten bushbuck, ten paa, ten lesser kudu, ten gerenuk (Waller's gazelle), two cheeta. Lions and leopards are here, as in other parts of Africa, classed as vermin, and no licence is required to kill them.

In North-East Rhodesia—a fine hunting-country—the Game Laws are the most liberal in Africa. Here, with a licence costing no more than £2, the sportsman may shoot hippos, buffalo, sable and roan antelope, kudu, waterbuck, reedbuck, impala, sitatunga, puku, lechwe, inyala, chevrotain, and various other small antelopes, as well as wart-hog and bush-pig. With a special licence, costing £25, elephant, rhinoceros, eland, wildebeest, and zebra may also be obtained. In North-West and Southern Rhodesia the £25 licence covers buffalo and most of the large antelopes. Special permits, costing another £25, have to be obtained from the Administrator to shoot elephant, rhinoceros, giraffe, and some few other species of rare game. In North-West Rhodesia, however, the ordinary £25 licence enables the holder to

It would be impossible, within the space of this article, to refer at length to the various game regulations in other parts of Africa. The above instances give a fair idea of what the gunner may expect to pay in the way of licences. But before proceeding to any particular district or territory, it will, of course, be necessary to become thoroughly acquainted with the existing game laws. In South and South Central Africa, including South, North-East, and North-West Rhodesia, the shooting season extends from the beginning of May to the end of October. In East Africa from May to the end of January is the proper time for a hunting expedition. It should be noted, however, that in this region rain may be expected in October and November.

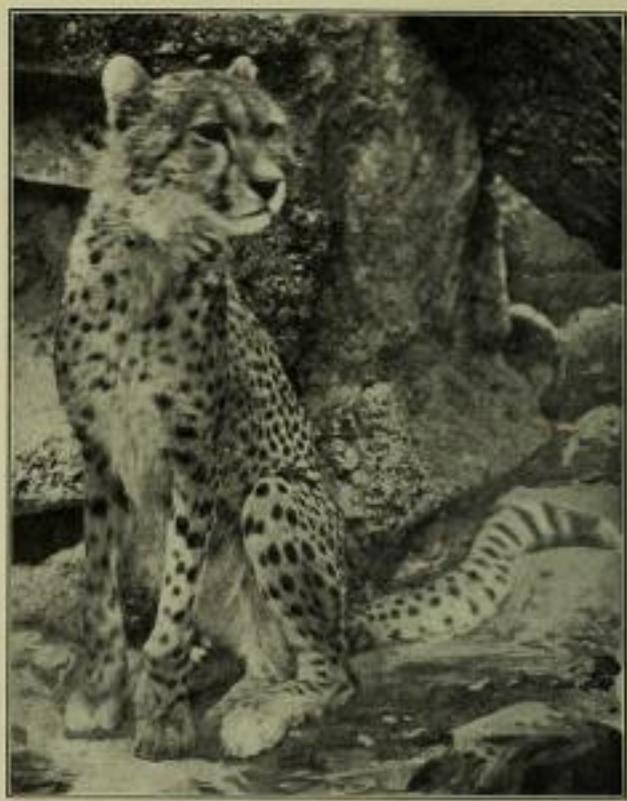
H. A. BRYDEN.

AMERICA, NORTH.—With the exception of British Columbia, the North American continent is, in spite of a few remaining districts where good sport may still be had, practically played out from the sportsman's point of view. In British Columbia the sportsman must be prepared for downright hard work in a dense, rugged country. Here we shall find in far greater

the handle of which closes on the blade; the latter fits neatly into a sheath. A second knife should be carried, commonly known as a shoemaker's knife, the blade of which has an upward turn; it takes a rough edge, and is excellent and quick for skinning. A roll valise is very handy for sleeping upon and carrying blankets, &c. The sportsman should be careful not to burthen himself with more than he absolutely requires, and that is very little. A fishing-rod and large trout flies will often come in handy.

J. TURNER TURNER.

INDIAN.—India affords as large a variety of animals for the rifle as any country in the world. Some of them are not met with elsewhere. Tiger, Panther or Leopard, Bear, the Gaur (always called in India Bison), Buffalo, Sambur, Swamp Deer, Cheetul, Hog Deer, Barking Deer, Nilgai, Black Buck, Gazelle, Four-horned Antelope, Neilgherry Wild Goat (called in India Neilgherry Ibex), Rhinoceros, and Elephant, are the principal animals in India. In the Himalayan ranges, there are the Markhor, Ibex, Serow, Tahr, Gooral, Shapoo or Oorial, Burrel, Snow Leopard, Musk Deer, Brown and Himalayan Black Bear, and Cashmere Stag. In the hills to the west of Sind are a wild goat (*Capra argagrus*), the same animal that is found



CHEETAH.

horn having a spiral twist. The Striped Hyena, Wolf, Indian Wild Dog, Cheetah or Hunting Leopard, the Lion, Lynx, Wild Ass, and Wild Boar complete the list of what are usually styled the "big game" of India, though, to the old shikari, the smaller deer and antelopes are not reckoned as such.

The Indian Lion is now represented only by a few animals in Kathiawar. They are very properly preserved and not shot, except occasionally by some one specially privileged to do so. The writer sees no difference between the Indian and the African Lion and believes them to be identical. Tigers, Panthers, and Bears are found throughout India, generally speaking, though there are many thousands of square miles without any, and a stranger to the country, unless he has information as to the exact localities and the assistance of some experienced friend, could easily spend months without seeing a single example. All the large mountain ranges of the Indian Peninsula hold the Indian Bison: the Satpura and Vindhyan ranges, the Mysore and Travancore Hills are the best. The Buffalo is found only in Assam, parts of Bengal, and certain limited portions of the Raepore, Sambalpore, and Chanda districts of the Central Provinces. Sambur, Cheetul, Swamp Deer, and Hog Deer are jungle deer, the two former being found in suitable localities throughout India. The range of the Swamp Deer is more limited, its



INDIAN ELEPHANT, SHOWING SHOOTING HOWDAH.

in Crete and the Caucasus (it is known to Indian sportsmen as the Sind Ibex), and a variety of the Markhor with a straight

principal habitat being in the heavy grass and forest land in Assam and the foot of the Himalayas. It occurs also in the Mundla, Raepore, and Sambalpore districts of the Central Provinces. The Hog Deer is found in Sinde, Assam, and Northern India; but does *not* extend, as stated by Jerdon, into Central India. The Barking Deer is also a jungle deer, and is found throughout India. Of the Antelopes, the Black Buck lives in the plains; the Nilgai in the jungles and also in the open country; the Four-horned Antelope in the jungles;

of Cutch, and is not shot. The Hyæna is also not an object of sport, and is common. The Wolf and Wild Dog are not uncommon, and are found throughout the country; the former generally in the open country; the latter do not leave the jungles. The Hunting-Leopard is not often met with when out shooting. Some of the native Rajahs keep them for coursing Black Buck. The Lynx is also seldom seen. Jerdon states that it is unknown in the Himalayas and in Bengal. That it occurs in Sinde is certain, as one was pulled down there by



CHEETAH, HAWKS, AND LYNXES USED FOR HUNTING BIG GAME.

the Gazelle in the jungles and in open ground. The Neilgherry Ibex only occurs in the Madras Presidency, in the Neilgherry and Annamallay Hills, and in Travancore. The only other member of the same genus (*Hemitragus*) is the Tahr or Himalayan Wild Goat. The Elephant is still numerous in Travancore and Mysore, and in the large forests at the foot of the Himalayas. It is not now found in Central India. Shooting Elephants is prohibited in British territory. In the native states of Travancore and Mysore, also, they cannot be shot without permission from the State. There are two kinds of Rhinoceros, the larger and lesser. The former occurs in the Terai and Assam, and the latter in the Bengal Sunderbunds. The Wild Ass is only found on the Rann

a couple of greyhounds belonging to a friend of the writer. The Wild Boar is found throughout India. In all suitable localities it is killed with the spear only.

**Season.**—The best season for Tiger, Panther, and Bear-shooting in Western and Central India is March, April, and May; after the monsoon breaks, usually in the second week in June, nothing can be done. The jungles are then very feverish till about the end of November. In December, January, and February, which are the best months in the writer's opinion for stalking Deer, the jungle is too thick and the water too plentiful for much to be done with the *felidae*, though some can, no doubt, be procured at that season. Bison and Buffalo-stalking on foot, which is the only sports-

manlike way of attacking these animals, is best followed in April and May, and for three weeks, or a month, after the rains commence. In Northern India, where the long grass necessitates the use of elephants, the shooting is generally done in the hot weather, March to June. In Southern India, on the other hand, the feverish time in the hills is the hot weather, and October and November are safe, although much discomfort is experienced from the rain. In the hot weather the stags have mostly shed their horns, and about Christmas is the time to stalk them. In the Central Provinces, rules have been framed which establish a close-time for Deer, and this includes the hot weather. A copy of such rules should be obtained from the Secretary to the Chief Commissioner, Central Provinces, by all

places, from 2 to 4 annas a day. It is usual to give *double* pay if a tiger is killed. The shikaris' pay is from 4 to 8 annas a day. The rewards given by Government for tigers, &c., killed, should be distributed among the shikaris and men. (The Indian rupee equals 16 annas, and at the present rate of exchange is equal to about 14 pence.)

**MEASUREMENTS.**—Probably no subject has given rise to more controversy than the measurements of animals which, in hunters' parlance, are classed as "Big Game," and of trophies of the chase. The reason for this is not far to seek; for the question is dominated by that exceedingly elastic quantity, the personal equation. Sportsmen, generally, are not too exact in



INDIAN BLACK BUCK JUMPING.

[Photo, by W. W. Reach]

who wish to shoot in the Central Provinces. Large tracts of country, forest reserves, are also closed to sportsmen in the Central Provinces; and in other parts also it is necessary to obtain permission from the forest officer in charge to enter the jungles for shooting.

**Equipment.**—For big game shooting it is necessary to have one horse at least, and it is better to have two for each gun. As in hot weather it is much cooler in the open air than in a tent, an 80 lb. Cabul tent for each sportsman is sufficient; this will keep things dry in case of the rain and heavy thunderstorms that sometimes occur at this season. A double-barrelled '500 Express rifle is all that is necessary, but for a battery, the writer recommends two '500 Express rifles, an 8-bore gun built for ball (not a rifle: a gun is as good and not so heavy) and a 12-bore gun. Bullock-carts can be hired by the month at about 12 annas a day. Beaters' pay varies in different

their methods of calculating size or weight, and this inexactitude may arise, not so much from pardonable anxiety to secure a trophy whose weight, length, or girth will rival or exceed that of any other particular trophy, as from the difficulties which attend the exact mensuration of animals killed in situations such as confront the adventurous hunter all the world over. Nevertheless, the means to greater exactitude in measurement are simple in the extreme, and may be summed up by saying that with a five-foot rule, a two-foot rule—some part of it divided into millimetres—a tape-measure of any length over ten feet, a large pair of calipers, and a notebook and pencil, one ought to be able to achieve absolute accuracy.

At present, few of the tables of measurements found in books of sport detail the methods adopted. Some sportsmen measure along all the curves of a carcase (even pressing the tape into inequalities), whilst

others measure in a straight line. Obviously, the difference between the two methods sometimes amounts to feet—a serious matter when the measurements of two animals, each taken by a different method, are compared, and therefore the method adopted should in all cases be stated; otherwise, confusion worse confounded arises when it is sought to institute comparisons.

Perhaps an indication of what the present writer considers a proper method of measurement may be acceptable to sportsmen generally. For ordinary mammals the method should be to measure, as shown in the diagram, Fig. 1, which is that of the Leucoryx Antelope (*Oryx leucoryx*).

In a direct line along back from tip of nose to end of tail.

The same along under surface from end of lower jaw to end of tail.

Length of tail, measured underneath from anus to tip, the deduction of which gives the length of body above and below.

Length along top of head, following all curves from nose to just behind and between ears.

Length from proximal angle of nostril to distal angle of eyelid on dotted line A.

Length between distal and proximal angles of eyelids.

Length from proximal angle of eyelid to insertion of ear on dotted line B.

Breadth of head between eyes.

Breadth between ears.

Length and breadth of ears.

Girth around muzzle at proximal angle of jaws (c, c).

Girth around muzzle in front of eyes (d, d).

Girth around head, under throat, in front of ears (e, e).

Girth of neck behind ears (e, f).

Girth of neck in front of shoulders (c, g).

Length of neck, on upper surface, from back of ears to distal edge of shoulder (f, g). Also, on under surface, from throat (e) to point g.

Girth of body just behind fore limbs (h, h).

Girth at greatest depth of abdomen (i, i).

Girth just in front of hind limbs (k, k).

Length of body between posterior edge of fore, and anterior edge of hind limbs.

Extreme length along side from throat (e) to below spring of tail (m).

Extreme height from ground to shoulder or withers.

Extreme height from ground to above hip.

Length of limbs as separate items where practicable.

Girth of limbs in three places: at foot, knee, and junction with body.

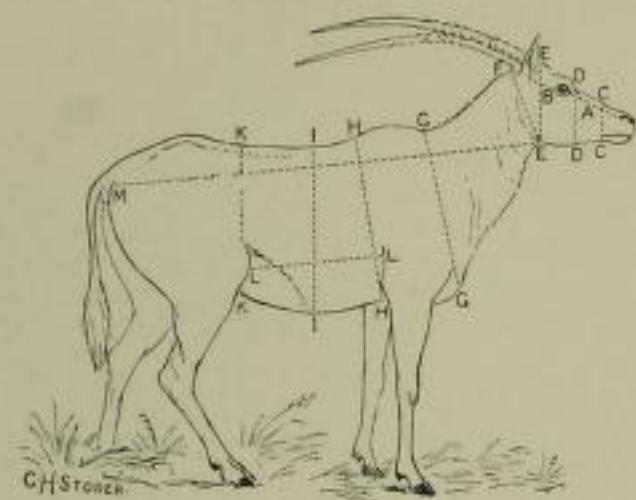


FIG. 1.

Note colours of muzzle, eyes, and all soft parts, and also any peculiarities.

The weight, if possible, to be recorded, and in many cases this may be calculated by the method detailed in certain works for ascertaining the weight of cattle.

Place and date in all cases to be given.

If a horned head, the position of horns in relation to the muzzle, eyes, and ears should be noted, and the width on top of head between their insertions.

The antlers of such an animal as a stag should be measured as shown in the diagram, Fig. 2, drawn from the horns of a Wapiti (often misnamed "Elk").

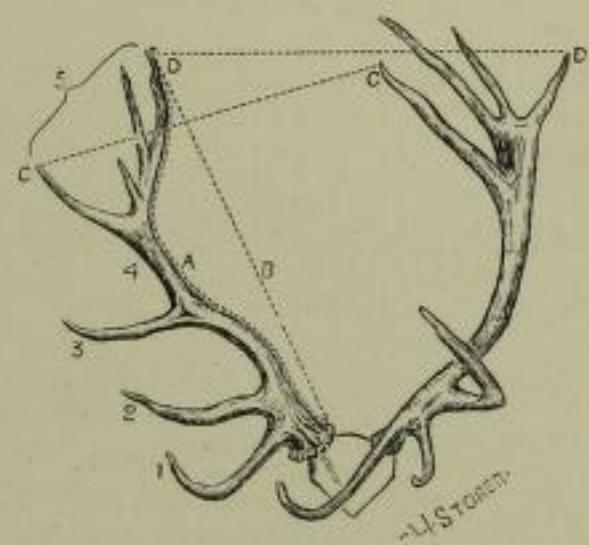


FIG. 2.—ANTLERS OF AN ELAPHINE DEER.

1. Brow-tine. 2. Bez-tine. 3. Tre-tine. 4. Royal-tine.  
5. Sur-royals.

Length of beam of each antler, following all curves along back of beam to tip of highest posterior tine (see dotted line A).

Length in a straight line from burr to tip of same tine (see dotted line B).

Length along centre of beam to crown.

Distance from burr to spring of first or brow-tine.

Length of brow-tine along under surface.

Distance between brow-tine and next or bez-tine.

Length of bez-tine.

Distance between bez- and tres-tines.

Length of tres-tine; and so on, measuring length of each successive tine, and distance from this to next. Also note if any anterior sur-royal makes, with the beam, a greater length than that along the dotted line A.

Span between burrs.

Span between tips of brow-tines.

Span between tips of bez-tines.

Span between tips of tres-tines.

Span between tips of anterior sur-royals on dotted line C, C.

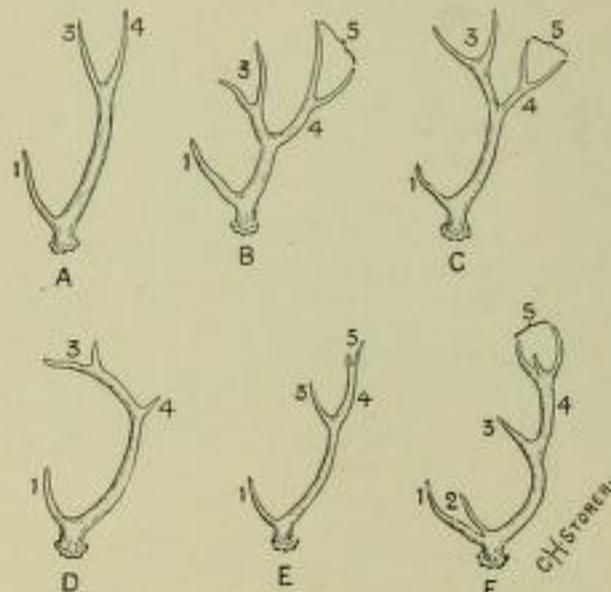


FIG. 3.—TYPES OF ANTLERS (modified from P.Z.S.)

A. Rucine type.	D. Extreme Rucervine type.
B. Normal Rucervine type.	E. Sub-Elaphine type.
C. Intermediate Rucervine type.	F. Elaphine type.

Span between tips of posterior sur-royals on dotted line D, D.

Greatest span at crown.

Girth of beam at burr.

Girth between brow- and bez-tines.

Girth between bez- and tres-tines.

Girth between other tines.

The length and girth of any other noticeable tines should also be taken.

It should be noted that the apparent beam above the tres is the "royal tine," and that all points springing therefrom are called sur-royals, anterior and posterior, and often form a cup—the "throstle's nest" of the Scot. Six points on each antler constitute a "royal head." In horns of other than Elaphine deer there is no bez-tine, and the

next anterior one above the brow-tine is, therefore, the tres (sometimes, although erroneously, called the "royal").

The diagram, Fig. 3, shows the different types of antlers, for all of which, except the last, the foregoing method of measurement must be modified.

Twisted horns such as those of the Antelopes and of various sheep should be measured along their front, back, and side curves in the manner described by Sir Victor Brooke and other authors, together with girths and distances between the various points.

The length, width, and girth of the skull at various points is desirable.

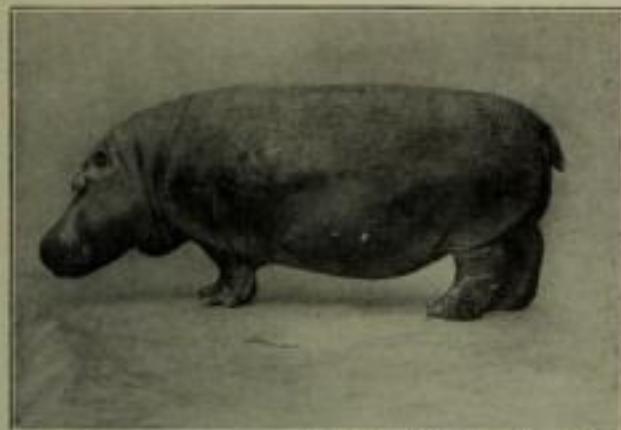
The following tables of Big Game measurements have been compiled from various works; but, as will be observed, in scarcely any case is the exact method indicated, and therefore those measurements for which the writer is not responsible must be taken on their merits. Probably no skin-measurements are of the slightest avail, skins being stretched out of all proportion in the process of pegging-out and drying.

In an article like the present, which is necessarily limited, it will be readily understood that not a tithe of the measurements to be found in books of sport, travel, or reference can be given, nor, indeed, can all the animals known as beasts of chase be even mentioned, this omission being particularly noticeable in the great order of the *Ungulata*, or hooved animals. The reader is referred, therefore, to the various works by Anderson, Baillie-Grohman, Baker, Blanford, Sir Victor Brooke, Bryden, Buxton, Caton, Chapman, Gordon-Cumming, Danford and Alston, Dodge, Cornwallis, Harris, Jerdon, Littledale, Lord, Lydekker, Lord Mayo, Peek, Percy, Clive Phillips-Wolley, Pike, Roosevelt, Sanderson, Slater, Selous, Sterndale, Ward, Williamson, and a host of others, pre-eminent amongst which, for wealth of measurements, stands out Rowland Ward's *Records of Big Game*, 1907, which contains nearly all measurements, weights, &c., prior to that date.

#### CARNIVORA.

Taking the mammals from highest to lowest form, the Lion heads the list, and although sportsmen imagine specific differences to exist between the African and Asiatic Lion, and between those of various parts of Africa, nevertheless, maned or unmaned, small or large, dark, ruddy, or pale, these are but slight or local varieties, and there is really only one species.

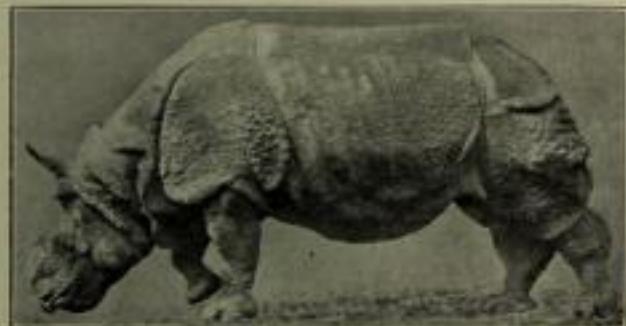
**Lion (Felis leo).**—Sir Samuel Baker ap-



[Photo. by W. S. Berridge, F.Z.S.  
Hippopotamus.]

length of 12 ft., kept in confinement, weighed about 4 tons. Maximum tusk-measurements, different examples: Length around outside curve, 5 ft. 4½ in. Girth, 10½ in. Weight of a good pair, 15 lbs.

**Indian Rhinoceros** (*Rhinoceros unicornis*).—Height at shoulder, 5 ft. 9 in. to 6 ft. 4¼ in. Horn measurements: Jerdon mentions one 2 ft. in length, and there is one in possession of Lord Curzon which



[Photo. by W. S. Berridge, F.Z.S.  
INDIAN RHINOCEPHOS.]

measures: Length, 1 ft. 9½ in.; girth, 2 ft. 0¾ in.

**Javan Rhinoceros** (*Rhinoceros sondaicus*).—Sterndale gives the height at shoulder as 5 ft. 6 in.; length, 12 ft. 3 in., including tail of 2 ft. 4½ in. Horn of one in British Museum measures: Length, 10½ in.; girth, 1 ft. 7½ in.

**Sumatran Rhinoceros** (*Rhinoceros sumatrensis*).—Height at shoulder, 4 ft. to



[Photo. by W. S. Berridge, F.Z.S.  
SUMATRAN RHINOCEPHOS.]

4 ft. 6 in.; length, tip of snout to root of tail, 8 ft.; weight, about 2,000 lbs. Maximum length of anterior horn, 2 ft. 8½ in., with girth, 1 ft. 5¾ in. Longest posterior horn, 17 in.

**African Black Rhinoceros** (*Rhinoceros bicornis*).—Sir Samuel Baker and Selous state that the males may attain a height of from 5 ft. 6 in. to 5 ft. 8 in. at shoulder. An adult female stood 4 ft. 8½ in.; length, tip of snout to root of tail, 4 ft. 11½ in.; tail, 1 ft. 9½ in. Maximum measurements:



[Photo. by W. S. Berridge, F.Z.S.  
AFRICAN BLACK RHINOCEPHOS.]

Anterior horn, length, 4 ft. 5½ in.; girth, 1 ft. 6¼ in. The next best pair measure: Anterior horn, 3 ft. 11 in.; girth, 22 in. Posterior horn: 1 ft. 10¾ in.; girth, 20 in.

**White or Burchell's Rhinoceros** (*Rhinoceros simus*).—Height at shoulder, maximum 6 ft. 6 in. One, a male, mentioned at p. 320, P.Z.S., 1894, measured 6 ft. 1½ in. at the withers; length between uprights, 12 ft. 1 in.; girth behind shoulders, 10 ft. 3½ in.; round fore-arm, 3 ft. 4½ in.; anterior horn measures 2 ft. 3 in. Maximum length of anterior horn, 5 ft. 2½ in., with girth, 1 ft. 10½ in. Another, in the British Museum, measures 4 ft. 8½ in., with a girth of 1 ft. 11½ in. Posterior horns are noted of 1 ft. 5¾ in. in length; maximum girth, 2 ft. 1½ in.

**Indian Elephant** (*Elephas indicus*).—Average height of adult male, about 9 ft.; of adult female, 8 ft. A first-class "Koomeriah" or thoroughbred, which was probably sixty years of age, is stated by Sanderson to have measured 9 ft. 2 in. at shoulder. Sterndale gives 10 ft. 7½ in. as the maximum authentic record, but a specimen killed by the late Sir Victor Brooke is said to have stood 11 ft.; and for another,



[Photo, by W. S. Berridge, F.Z.S.  
GREVY'S ZEBRA.

**Grevy's Zebra** (*Equus grevyi*).—Height, 4 ft. 10 in. to 5 ft.

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**BIG HORN** (*Ovis canadensis*).—This magnificent animal ranks high from a sportsman's point of view among the Big Game of North America. Although becoming scarce elsewhere, it is still very

plentiful in British Columbia, especially in the district of Sheep Creek, East Kootenay, where it is preserved by a close time and a limit on the quantity to be killed.

Probably no animal is keener of scent, sight, and hearing; often, high up the mountain side, it will spend hours upon a solitary rock gazing into the depths below where no movement escapes its notice. Most necessary is it therefore to circle widely round one which may have been sighted, and approach it only from above, and that with the greatest caution, lest a dislodged pebble should give the alarm. At certain seasons large bands of rams herd together high up the mountains; at other times most mixed bands contain at least one old ram, and occasionally two or three old rams appear to wander about by themselves.

**Shooting.**—There are three modes of hunting these sheep. The most legitimate of these is by fair stalking, when the man who scores a fine head will have many reasons to remember the exciting climb it entailed. In some districts trained dogs are used, and when a ram is sighted these are laid on, quickly bringing the animal to bay on some projecting rock, where, if the dogs know their work, they will detain him until the hunter arrives within range. A ram is easily approached under these conditions, for it seems to see nothing but the dogs.



BIG HORN.  
Height at shoulder, 3 ft. 2 in.; ab. horn meas. 35 in.;  
max. horn meas. 45 in.

The third method entails constantly watching "Licks," whither sheep make periodical excursions, singly and in bands, from the mountain tops to gorge themselves with clay. They may remain from an