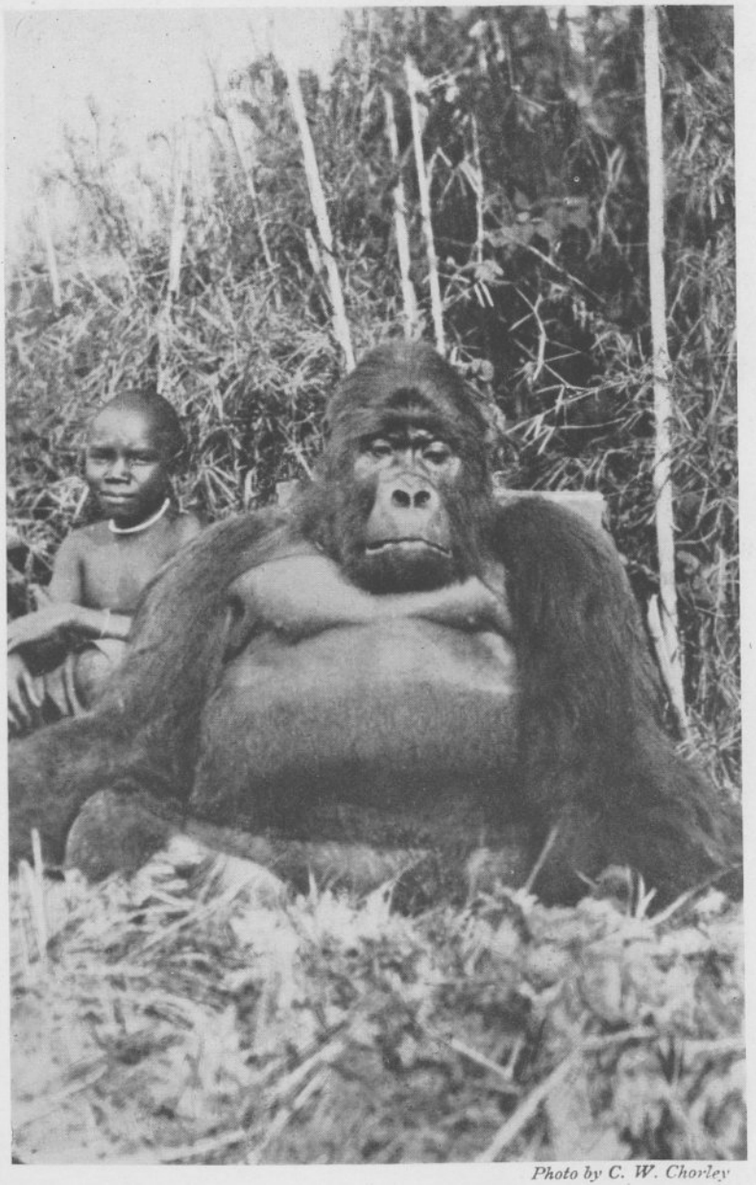


Photo by C. W. Chorley

EDMUND HELLER'S GIANT GORILLA FROM MT. SABINIO

A GAME WARDEN AMONG HIS CHARGES

BY

CAPTAIN C. R. S. PITMAN

D.S.O., M.C., C.M.Z.S., M.B.O.U.

Late 27th Punjabis, Indian Army
Game Warden Uganda Protectorate

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His military work in Mesopotamia and India and his later activities as Game Warden in Uganda have all been of great and lasting benefit to the Museum. In a country like Uganda, where settlement proceeds apace with the inevitable result of diminishing and sometimes of extinguishing all the more conspicuous and larger forms of animal life, it is of the highest importance that specimens should be collected while they can be got. Photography and notes are valuable, and of these, as this book testifies, Captain Pitman has accumulated great stores. But no scientific man could allow them to take the place of carefully collected and properly labelled specimens as the chief basis of his work. That fact has been realised to the full by Captain Pitman and he has accordingly provided admirable material for much future research on the Mammals of Uganda, material which, enshrined as it is in the collections at South Kensington, will constitute for all time a worthy memorial of a great Game Warden.

It is not necessary for me to say much about the present book. It speaks for itself. It is full of most valuable observations and suggestions, the product of first-hand experience in the field. Quite apart from its permanent value as a supplement to Captain Pitman's collections in the Museum it is full of thrilling and interesting matter which cannot fail to appeal to the general reader with a taste for natural history.

MARTIN A. C. HINTON,
Deputy Keeper of Zoology, British Museum (Natural History).

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PREFACE

OF recent years I have been constantly pressed to record my varied experiences in a permanent form, which must be my excuse for any presumption there may be in offering this book to the public.

It happens that I can claim more than a passing acquaintance with the animals which are the main subjects of this book, as from an early age I have regarded the study of natural history and in its broader sense natural science, as a hobby, while military duties during many years spent in India, Mesopotamia, Sinai, Egypt and Palestine afforded exceptional chances of sport and the study of wild life in the field. Subsequently pioneer farming in Kenya, followed by permanent employment as a controller and conservator of wild animals — in particular, elephants — in Uganda, have offered what I may fairly claim as unique opportunities of making the most intimate acquaintance with a fauna not only varied and interesting, but in certain instances of extreme rarity.

I am inclined to agree that knowledge such as I have been privileged to acquire during years of exhaustive study of the ways and habits of the denizens of the wild should not be locked up indefinitely, and if, as a result of the unrivalled opportunities which have not infrequently come my way, enabling me to investigate the mode of life of

London News, the *National Geographic Magazine*, and the *Asia Magazine* for similar permission in regard to illustrated articles. I also acknowledge with grateful thanks the generosity of Mr. E. A. Temple-Perkins, Mr. Kenneth Carr, Mr. C. W. Chorley, Mr. R. M. Pradhan, and the late Mr. P. C. Pearson in permitting the reproduction of certain of their interesting and beautiful photographs, as well as to the numerous kind friends who have rendered much appreciated and valuable assistance.

I am particularly indebted to Mr. E. D. Cuming, who has rendered invaluable help in revising the MS. and correcting the proofs.

I would also like to thank Mr. M. A. C. Hinton for his kindness in contributing an Introduction.

C. R. S. PITMAN.

A GAME WARDEN AMONG HIS CHARGES

CHAPTER I

THE WHITE RHINOCEROS

I

UGANDA, amongst its varied fauna, still retains a thriving colony of the rare white rhinoceros.

" White " is a complete misnomer for normally there is nothing of that colour about the animal : I have been told that this description originates from the corruption of a Dutch term [1] used in South Africa to differentiate it from its smaller relative, the black rhinoceros.

The expression in the vernacular was " bright " or " shining," and evidently referred to the smoother hide of the larger species which no doubt at a distance on the South African veld would appear in the sunlight almost to shine : a distinct contrast to the dull-surfaced, rougher skin of the black species.

Whatever its derivation the name " white " has remained to confuse for all time the field observer

[1] Since this was written it has been pointed out that " white " is more likely to be a corruption of the Dutch word *widg*, meaning " great." The several Dutch equivalents for " bright " or " shining " bear no resemblance to " white."

ceros, for judging from captive specimens of the latter I have seen in India and elsewhere, I consider that probably numbers of them are the larger. I am of opinion that the fully adult bulls I have observed in the field have invariably exceeded 6 feet at the shoulder, and have no reason to believe an estimate of 6 feet 6 inches to be excessive in some cases.

Difference in size, however, is not the first characteristic for which one would seek when endeavouring to identify the white rhinoceros in its native haunts, for it possesses several other pronounced distinguishing features by which it should be easily recognisable.

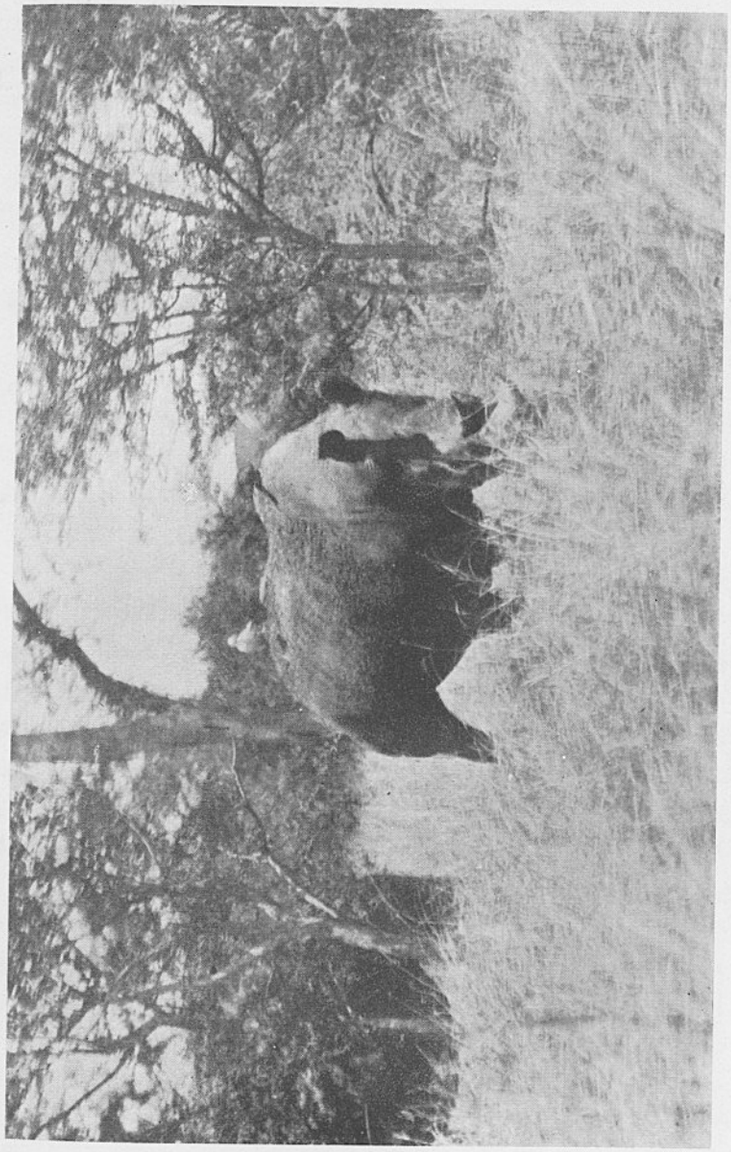
Primarily, there is the huge, square mouth—from which it derives its sobriquet of "square-lipped"—so distinct from the prehensile upper lip of the black; but when one takes into consideration the animal's grassy, scrub-dotted habitat, I would hesitate to recommend reliance on so easily obscured a feature for identification—at least not with the naked eye, even at close quarters.

The immense, square base of the front horn, as opposed to the rounded base of the black, is another well-marked difference but not easily discernible until a specimen is actually handled.

The most prominent distinguishing feature is the enormous fleshy hump on the nape of the neck just forward of the withers which is absent in the other species. This hump is much accentuated through the creature's habit of carrying its head low, a habit possibly due to the great bulk and excessive length

and the sportsman. Actually the animal is a dirty grey, but to the eye it varies from black to earthy-brown, dull whitish, and even deep red, according to the colour of the mud in which it has been wallowing. It is certainly lighter in hue than its black cousin, though as seen in the field there is no apparent difference. At the present day there is no opportunity of comparing the two side by side in the natural state.

It is the third largest living land mammal, in size being exceeded only by the African and Indian elephants ; it appears to be at least half as large again as its black relative, though Edmund Heller, who accompanied Roosevelt to the Lado, maintains that the size has generally been greatly exaggerated and that the majority of the specimens secured in the course of the expedition, as well as most of those as set up in various museums, do not exceed the height attained by many examples of the black species. Roosevelt suggests that in the past height measurements may have been taken to the top of the hump. Heller, however, only measured in the flesh one really mature animal—a female—whereas my own observations in the field made during periods of many weeks at a time, though no specimen has actually been measured, suggest that the old bulls, not to mention some of the mature cows, are indeed mighty beasts, and I should be very reluctant to discredit the figures recorded by some of the well-known hunters of the past. I would not go so far as to state that the white is vastly superior in bulk to the great Indian rhino-

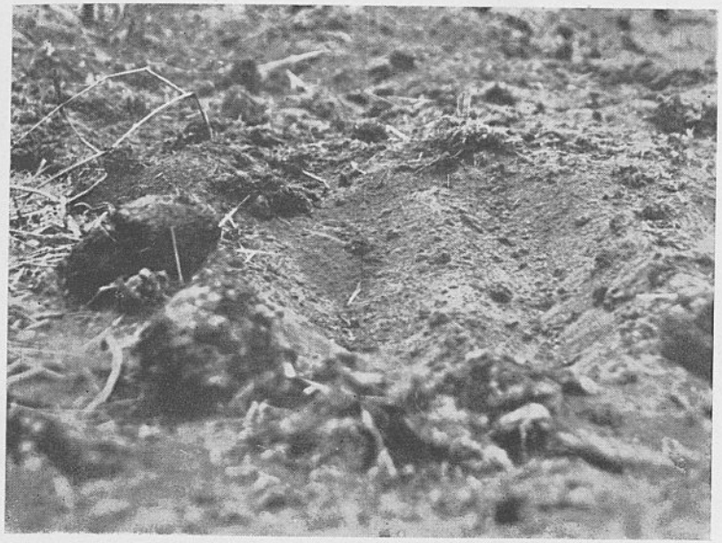


SHOWING THE RHINO'S HABIT OF CARRYING ITS HEAD LOW

of its head. Anyone who has endeavoured to photograph the beast in its grassy haunts will agree how irritating this habit can be ; I have waited many weary hours for white rhinoceroses to raise their heads and afford a clear view, not to mention the loss of scores of otherwise golden opportunities. It is troublesome enough having to contend with the stray stems of tall grass which constantly ruin pictures, without the serious drawback of the drooping head ; when the animal is at rest the chin is actually on the ground. With its head not unduly depressed the hump is less conspicuous.

The ears, which in the case of the black are almost hairless, are thickly fringed—almost tufted—and much larger in the white : in the former, when the beast is agitated or alarmed, the tail stands erect, but in the latter it is curled in a loop over the back. In the white there is almost complete absence of the dermal folds so characteristic of the other. Also, as one would expect, the feet are larger. There are, further, very great structural differences in the two species.

In the past there has been a tendency to deny that the white rhinoceros has the same habit as the black of resorting daily to well-used middens. That the white rhinoceros does not indulge in this habit to the same extent as the other is perfectly correct, and may be attributed to its more wandering nature ; but to state that it does not do so at all is entirely wrong. I have come across many of these middens, most of which bore direct evidence of the fact that this species, in common with the





SHOWING THE RHINO'S HABIT OF SCATTERING ITS DUNG

black, for reasons best known to itself, is addicted to the practice of scattering its dung, presumably by backward strokes of its hind legs : photographs have been taken as proof positive of this.

There is one characteristic of the white rhinoceros—a very marked one—which so far I have not found recorded in any text-book nor amongst the various descriptions of the beast and its ways. This concerns the droppings, and for the purposes of accurate identification it is infallible ; Roosevelt mentions a difference but does not say what it is. In composition the droppings of the black rhinoceros are not unlike those of small elephants, a fact due to the similarity in food and the browsing habits of the two species. In the case of the white rhinoceros they are absolutely distinctive ; the creature being a grazer and solely a grass-feeder, the droppings are black outside and horse-like, resembling on a large scale those of a Clydesdale when out at grass. There can be no question as to the origin of any reasonably fresh dung of this type, while one could not normally distinguish between the two species from the spoor.

Conclusions based on only cursory acquaintance with animals in the field are bound to require considerable modification later, and Heller's opinion that the horns of the northern race of white rhinoceros are generally small is erroneous. Also, I cannot find any reasonable evidence to support his statement that " The rear horn is so small that it is obviously disappearing, the species

showing a marked tendency to become single-horned, though actual single-horned specimens are rare."

A glance at the list of horns in Rowland Ward's *Records of Big Game* will indicate the size attained by the horns, which in the bulls are as a rule markedly superior to those of the cows. Horns exceeding forty inches are nowadays rare and probably were never common, while those of thirty inches and more are not as plentiful as one would expect. They are generally more massive, and in consequence heavier, than those of the black.

There is a conspicuous peculiarity in the horn-growth, apparently confined to the cows, which in extreme cases gives the creature an exceedingly odd, not to say grotesque, appearance. The anterior horn, instead of curving backwards as is usual, turns forward, and the tips of horns of this type come into contact with the ground when the animal is feeding; thus the points soon become worn flat on the outer surface. Horns with a forward pitch are by no means uncommon and it is unusual not to come across a few instances when travelling through the white rhinoceros habitat, though so far I have been unable to secure a photograph of one of these oddities. A cow has been observed with a very long horn approximately 28 inches of which curved back in the usual way, then a further twelve inches on a forward sweep.

Many of the longer, normally-shaped horns I

have seen—particularly those from bulls—have had much-flattened sides as if they had been worn down by frequent rubbing against hard ant-heaps and mounds. Posterior horns are remarkably short and stumpy, and usually much compressed at the sides. From the Lado the maximum length of horn recorded is $45\frac{3}{4}$ inches, and the longest which has passed through my hands in Uganda in recent years—that of an animal either killed by poachers or found dead—measured $42\frac{1}{2}$ inches, both being from males. From Bahr-el-Ghazal a cow horn of 38 inches is recorded, and from the N.E. Belgian Congo one of $37\frac{3}{4}$ inches. Traders informed Heller of the existence of 40-inch horns.

Horn measurements of the northern race are completely eclipsed in the very scanty data referring to the southern; Gordon Cumming possessed wonderful examples—both cow—of $62\frac{1}{4}$ and $56\frac{1}{2}$ inches, while Schillings, the German naturalist-explorer, mentions one of 6 feet 9 inches!

Before describing its habits in general I must allude briefly to its extremely restricted habitat.

It may well be claimed that in the northern race there exist the last representatives of a magnificent species which not so very long ago was to be found in thousands south of the Zambesi, but where now not more than three dozen, and possibly less than a score, remain. The distribution of this species is almost everywhere bounded by rivers, and it is curious that in the case of the black rhinoceros similar geographical barriers exist (though only locally), indicative of a strong aversion on the part

of these great beasts from crossing large rivers, a trait probably attributable to a fear of drowning. In the case of the black rhinoceros it is particularly noticeable how even a tiny stream will prove an effective barrier.

In South Africa, where the species had a wide range, all south of the Orange River had been exterminated early in the last century and the rate of killing continued with such rapidity in the vast area between that river and the Zambesi that a few decades later the southern race was on the verge of extinction, a state from which it has never recovered. One white hunter alone is known to have accounted for sixty in the course of a few months, and it might well be recorded here, on the evidence of photographs, that in recent years no less than seven of the northern race were killed at one fell swoop by a self-styled sportsman, all seven being so close together as to be practically touching each other.

It is truly astonishing that of the thousands of white rhinoceroses which must have been killed in South Africa by white men less than a dozen skulls remain in museums for scientific study ; authentic records as to length of horns, and size and weight of the creature, are equally scarce. It is therefore imperative that we should acquire—in so far as the northern race is concerned—of course with due regard to the effective protection of the species, as much material as possible for scientific purposes ; and at the same time the necessary steps must be taken to safeguard the race in perpetuity.

The habitat of this northern representative is

extremely limited and in recent years has unfortunately so dwindled that it now remains only in a very small district of Uganda, west of the Albert Nile (the southern portion of the one-time Lado Enclave) and in small portions of the adjacent S.W. Sudan and N.E. Belgian Congo ; possibly also in the eastern extremity of French Equatorial Africa.

In South Africa the black and white rhinoceros mingled freely, and occurred plentifully in the same areas, but where the northern race of white rhinoceros is found, the black species, as far as has yet been ascertained, is absent. The Nile appears to act as an impassable barrier, the white occurring on the left (west) bank and the black on the right (east).

I have not infrequently heard acrimonious discussions on a subject which crops up with wearisome regularity ; that is the reputed occurrence of the black rhinoceros on the left bank of the Nile (*i.e.* the old Lado). I have heard ridiculed the assertion that there are no black rhinoceroses on the left bank when there are plenty on the other just across the river, though I have never met anyone who has argued from the other point of view, *i.e.* that because the white species exists on the left bank it should also be found on the right. If the fact is granted that there are no white on the right bank, I cannot understand why the claim that the black is absent from the left should not be equally acceptable. The black rhinoceros also occurs farther to the west in the vicinity of Lake Tchad and the Niger watershed.

There is no evidence geological or otherwise to account for the extraordinary separation of the northern and southern races : it is a remarkable case of discontinuous distribution. This separation can have taken place only within comparatively recent times, for no specific differences have developed as would have been the case if such separation had taken place long ago.

Speke, Grant and others have reported the existence of the white rhinoceros in Karagwe, and other intervening localities, but there is conclusive evidence to the effect that in every instance it was a case of mistaken identity, the animal seen or collected being referable to the black species.

The white rhinoceros is now completely protected in Uganda and as illicit molestation is almost negligible it will be interesting to see after the lapse of a few years what effect this immunity from other than natural wastage will have produced on the species.

In 1925, 1926 and 1928 endeavours were made to take a census of the species, with the result that the 1928 total showed a decrease of twenty on the figures—approximately 150—of the earlier years. It is hoped that the total at the next count will exceed all previous estimates. The method of making this census is dealt with on a later page.

Exhaustive investigations have been made in regard to the rate of reproduction, but as yet we are very much in the dark on this all important subject. No specimens have been kept in captivity, and the data in regard to fœti taken from cows

which had calves at foot are but two. Powell-Cotton has one such record and Heller another ; the latter on dissecting a female, accompanied by an almost full-grown calf, found a large fœtus to which she would have soon given birth. This independent evidence to a great extent bears out my own calculations based mainly on observation of the numbers of juveniles of various sizes with particular reference to those which were known to be newly-born or not more than a few weeks old. I came to the conclusion that calves accompany their dams till practically full-grown ; that bulls do not normally run with a cow and calf ; that a calf remains with its dam till the birth of the next, when Number One is evidently turned away ; and that Number Two does not usually arrive until Number One is practically full-grown. There is still an appreciable gap in the chain of evidence which must be filled before it is possible to ascertain how rapidly successive calves appear, and the closing of this gap is dependent mainly on the rate of growth of juveniles—another subject on which authentic evidence is practically non-existent, although Heller has described a nursing calf obtained by the expedition as " half-grown," and another large specimen as less than three years old. Judging by the comparatively slow growth in the case of juveniles of the black species it is not unnatural to assume that growth is equally slow in the white. My own idea is that there is a period of several years—up to six or even seven—between successive births, but am open to correction, and prefer to

under- rather than over-estimate the rate of reproduction.

I should call the creature a slow breeder and I cannot follow Heller's contention that it breeds rapidly which he based on the fact that he took a full-term fœtus from a cow which had a nearly full-grown calf at foot ; nor can I find any evidence in support of his assertion that " the succession of calves is as rapid as the period of gestation will allow." Bearing in mind the admittedly slow growth of the juveniles I should have said that Heller's facts prove definitely the occurrence of a protracted period between successive births, though whether this is normally so remains to be verified. The period of gestation in the black is supposed to be 16 to 18 months, and there is no reason to believe that it would be less in the case of the white. It is gratifying to know that maturity in the cows, in so far as breeding is concerned, is attained at an early age, for Roosevelt killed a female in which, though the last milk molars were still in use, was accompanied by a half-grown calf ; and Powell-Cotton obtained two cows—both parents—in which no milk molars had been shed. I agree with Heller that the adult females are rarely without a calf.

I have seen for certain as many as three—and possibly four—juveniles of varying sizes accompanying the same cow elephant, but have never observed more than one youngster with a white rhinoceros, whether the calf was newly-born, nearly half-grown, or at any intermediate stage. Selous and others

have recorded, in the southern race, instances of two calves accompanying the same parent.

Investigation suggests that calves are dropped about the end of or early in each year just after the annual grass-burning when the countryside is swept by fierce conflagrations. The young at birth are no more hairy than the adults, are not unlike pigs, and are small enough to pass under the low-hanging belly of their dam. They have a habit not shared by any other animal : the calf always walks ahead of its parent, the latter moving with lowered head, guiding its offspring with the horn, which is often laid alongside the youngster's flank.

II

Fortunately, this species appears not particularly susceptible to disease and it is noteworthy that virulent outbreaks of rinderpest which have swept through its Uganda habitat, creating havoc amongst the buffalo herds and various other ungulates, have left it unscathed.

All investigations carried out so far indicate that the sexes are equally divided. The partiality of this species for limited localities in its already tiny habitat is well-known, and though on occasions as many as a couple of dozen may be in sight at the same time such a concentration is a result of chance rather than of intention. The most I have seen herded together is seven, and when first observed they were sleeping peacefully in a minute acacia thicket. This group included a large bull with a

massive horn, three cows and three practically full-sized juveniles. Amongst other combinations, I have come across two cows each with a tiny calf; cows with single calves of all sizes upwards from newly-born ; solitary bulls, pairs ; a bull and two cows ; three bulls ; and two practically full-grown juveniles evidently but recently " on their own."

The inoffensiveness of this creature is almost proverbial, and from my own experience as well as that of elephant hunters of renown who have been specially commissioned to study its habits, involving months of constant, close contact with the beast, there has not been encountered a single instance of hostility. There are black sheep in every fold, and it would be absurd to assert that a white rhinoceros never charges, but such an occurrence must be so rare as to be almost negligible.

Persons who have been taught to believe the lurid tales told of the truculence of the black rhinoceros cannot dissociate an animal with a horn on its snout from aggressiveness, and in consequence are on the look-out for trouble, and, I fear, are prone to exaggerate. If this beast had even a spark of animosity in its nature I cannot understand why neither myself nor my helpers have had experience of it. There are on record various authenticated cases of aggressiveness, probably the best known being that of Oswell, in South Africa, whose horse was disembowelled by a horn-thrust delivered by an enraged cow ; and I am not prepared to dispute the story of a sick officer who when being carried in a litter in the West Nile district was forced to take

refuge in a tree and was kept there for no inconsiderable period by an infuriated rhinoceros. It is, however, surprising to learn that during the very brief stay of the Roosevelt expedition in the rhinoceros habitat, members of the party were charged on no less than two occasions and in both instances were forced to fire—and kill—in self-defence.

On each occasion the aggressor was a cow accompanied by a calf, and the charge was not quite unprovoked as endeavours were being made to secure photographs. At the same time, at the present day, there is no doubt that there is a general absence of such nervousness culminating in hostility, and I can only conclude that formerly the animals suffered from the effects of undue molestation and were displaying a viciousness foreign to their nature. The fact that the expedition found numbers of weathered skulls of animals recently dead tends to support the theory of excessive persecution, but to claim that the Lado elephant poachers were responsible for this state is an assertion too sweeping. It is true that this slaughter was attributable to the activities of elephant poachers, but not to the grand old-timers of the Lado, who were far too busy hunting the big tuskers to waste their time in the pursuit of anything else.

Another, more recent, instance concerns a white rhinoceros which blundered towards a shooting party and was shot at and wounded after a bullet over its back had failed to turn it. It was shot on the assumption that it was one of the black variety, and the testimony of the natives present

upheld the plea of self-defence. Followed up, the creature was found lying under a tree, when it got upon its feet and determinedly charged its pursuers. Who can blame it ?

It is not difficult to suggest reasons for aggressiveness and I am inclined to believe that charges are likely to be made only by (*a*) cows heavy in calf ; (*b*) cows accompanied by tiny calves ; (*c*) bulls in the rutting season, a time when they fight savagely and frequently get terribly knocked about ; and (*d*) wounded animals. One such fight was witnessed from a distance, the combatants squealing loudly all the time ; and the natives state that such battles are of fairly frequent occurrence. On another occasion a big bull was seen—evidently just after an epic struggle—wickedly gashed and generally in a very miserable condition.

I think the majority of reports of this creature's supposed truculence are due to unfamiliarity with its habits, coupled with fear. Time and again my colleagues and myself when studying these animals at close quarters have had them walk right up to us, so close in fact that it has been considered necessary to have handy a piece of wood, a stone or a lump of earth as a missile. We never carried rifles and never had the slightest trouble, though we were careful to dissuade the great beasts from coming so close that a frightened sweep of the head would have brought us within horn-reach ! This will give an idea of the way we literally hobnobbed with them. At times, when it has been found necessary to throw something to turn the creature

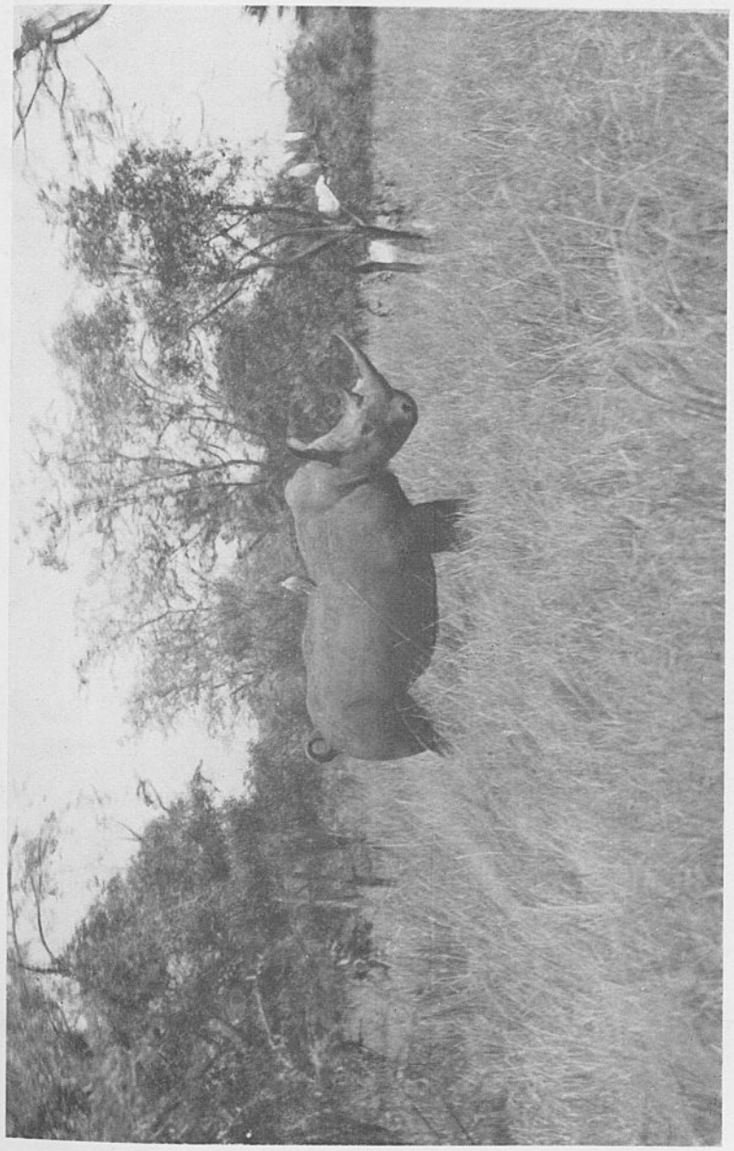
or make it halt, it was really most entertaining to see the hurt look on its face—expressive evidently of what it felt at the rejection of friendly advances !

It seems that these huge beasts are naturally so placid and inoffensive that they cannot understand any other living creature not being well-disposed towards themselves, and as a rule—except where they have been molested—they show no fear of man : for this reason they are often called " dull-witted," thereby I think, doing the creature an injustice. Their sight is bad and, like the black rhinoceros, they are extremely inquisitive. I am not quite certain but that a great deal of the seeming hostility of the black is not due to inquisitiveness coupled with shortness of sight. It trots up to investigate, becomes frightened, loses its head and charges ; for in so many cases if dodged or turned, it passes on. I can well imagine a novice, who, for the first time sees a white rhinoceros turn and trot towards him, visualising, out of sheer inexperience, the commencement of a charge.

Many curious incidents have occurred when I have been photographing these animals and probably none was more curious than the occasion on which I found myself on one side of a small bush with a fine bull on the other—not ten feet away ; each time it craned forward to have a look at me I took, as I thought, a picture of its comical expression. Unfortunately I was doomed to disappointment for I discovered that the dark slide had not been withdrawn, and I had wasted ten exposures.

Another time I spent more than an hour and a

half taking pictures of a party of seven during the heat of the morning, after eleven o'clock. The great brutes were most reluctant to leave the comforting shade of patches of bush and scrub and never moved further than a couple of hundred yards at a time. The old bull of the party always placed himself nearest the intruder, and finally, evidently satisfied as to my peaceful intentions, came right out into the open and deliberately posed. The result can be judged from the picture—there he stands head lowered and hump showing up conspicuously, pig-eye fixed on the camera, tail tightly curled, and a cattle egret perched on his back. I was using a large reflex camera and approached so close that the animal almost filled the view-finder. It seemed that only a carrot was necessary to complete the scene, when I should have probably found it feeding out of my hand! When first seen all the animals were lying down, but warned of my approach by the noisy cries of several dozen egrets and a few slender-tailed crows they rose to their feet. As I remained in concealment the birds ceased their outcry, and the great beasts, showing no desire to leave their shady refuge, one after another lay down again with grunts of obvious satisfaction. Such behaviour takes anyone unacquainted with their peculiarities completely by surprise and one feels inclined to burst out laughing. Later, when the whole group was on the move, the bull did not appreciate the attentions of the egrets and when numbers tried to settle on his back he bucked and bounded like a playful youngster. It was neces-



THE OLD BULL CAME RIGHT OUT INTO THE OPEN AND DELIBERATELY POSED

sary to keep a wary eye on the youngsters—nearly full-grown—which were gambolling ponderously all over the place for there was always the possibility that they might blunder into one by accident. On another occasion when I came across a pair of adults lying down I had the utmost difficulty in getting them to stand up. I whistled, threw lumps of earth at them, hooted, tapped a tree with a stick, but all in vain. They raised their heads, peered in my direction, and that was all. At last they did get up, not as a result of my efforts, but because one of my gun-bearers, who had heard the frequent whistling and thought that he was wanted, walked carelessly over to me—in light-coloured clothing—in full view of the recumbent creatures. Even then they were not inclined to move, and I secured many pictures of their various attitudes before I walked right up to them, when they turned tail and fled.

One does not, however, always find them so placid and fearless ; I have been detected by sight when more than a hundred yards distant and have seen startled beasts hastily disappearing in a cloud of dust. In one particularly striking instance three were observed lying down in the formation of a three-bladed propeller, heads outwards, as if on the alert to detect approaching danger from any quarter, and I was not given the opportunity of getting near them.

When at rest they usually lie down either stretched at full length on their sides, or on their bellies with legs doubled up and heads on the

ground. When assuming a recumbent position they usually sink down on the fore-legs, though I have frequently seen them drop on the hind quarters first. Similarly, when getting up from the ground it is usual for the hind quarters to be raised first, leaving the creature for a moment on its bent forelegs, but I have also seen it come up on straightened forelegs sitting on its haunches and looking exceedingly comical. Roosevelt was very surprised to see a standing one sit down on its haunches, but this is not so rare an occurrence as he imagined, and he is quite wrong in his impression that no other heavy game has this habit ; I have seen hippopotami in the wild state assume this posture : and an adult pigmy hippopotamus in captivity deliberately sat down and rested in this fashion. This is also a common characteristic of wart-hogs and wild pigs.

The creature's extreme fearlessness, verging on stupidity, is sometimes its undoing ; and recently, after a ban had been placed on all hunting, a fine rhinoceros was foolish enough to walk through a native village in broad daylight. This was too much for the members of a meat-loving community ; they were not going to let a few tons of meat on the hoof escape for the sake of observing the law, and speared it to death.

I have many times seen fresh tracks of white rhinoceroses which had walked during the night through the centre of villages, and on one occasion a pair followed an unnecessarily tortuous trail, literally brushing against the huts, which were



A PAIR OF RHINOS PEERED AT ME

packed closely together. On another occasion by night three climbed a steep hill, entered by a narrow entrance the fenced-in compound of a rest-house built on a cliff overlooking the Nile, walked round the building and departed by a gateway on the opposite side! Their aimless wanderings are a constant source of perplexity to anyone who has endeavoured to follow their tracks or study their habits. In fact to the uninitiated the countless tracks that are often seen in a small locality would suggest the presence of dozens of animals. It is on such misleading data that entirely erroneous and optimistic estimates of white rhinoceros numbers are often based. One investigator who had been much puzzled by the extreme frequency of tracks compared with the numbers of animals actually seen, determined to solve the problem, and when he was travelling through the bush, along a broad highway which ran parallel to the Nile, and across which he observed much rhinoceros spoor passing to and fro, he and his men followed the tracks in detail and discovered that they had all been made by a party of three which were actually moving in the same direction as himself. He had to travel twelve miles along that road and the spoor crossed and re-crossed it throughout. His experience demonstrates clearly how little reliance can therefore be placed on the counting of tracks for the purpose of making an accurate estimate of the numbers of the animals.

I have mentioned that a census has been taken

of the remnants of the race in Uganda, and in order to dispel any impression that may have been gained that we set out armed with pots of paint and brushes I will outline briefly the plan adopted. The procedure was the same whether a couple of Europeans were collaborating, or only one working with reliable native assistants. The district was toured exhaustively and at each place where either native information or rhinoceros tracks indicated the presence of the animal, investigators went out simultaneously in opposite directions and recorded only what they actually saw in the flesh. Particular care was taken to avoid the possibility of counting the same animal twice and the tracks seen were ignored.

I am confident that the results are a fairly accurate estimate of white rhinoceros numbers. Not only has exceedingly valuable information been acquired as to its status, but also in regard to general habits, local movements and seasonal migrations, the last two being governed by such factors as food-supply, water, grass-burning and excessive length of grass, which last it dislikes. Conditions of drought do not necessarily drive these animals to the Nile ; in fact all available evidence and our investigations tend to show that they avoid going to that river to drink. It is not running water they require so much as mud-wallows ; and an absence of mud-wallows or pools in semi-dried watercourses quickly drives them out of a locality. They are also partial to rolling in sandy river-beds. Local movements account for a great discrepancy in numbers by

areas, though not in the grand total found during the various investigations.

Powell-Cotton, in 1904, only found the species in a very restricted part of South Lado. Nowadays it can be found throughout the length of the left bank of the Albert Nile (or Bahr-el-Jebel) in Uganda from Albert Nyanza to Dufile. Three were seen near Dufile on the Sudan border in 1925, but none have been recorded from that district since. Two marches up the Nile from Rhino Camp and further south, there were plenty in 1925, though in early 1928 there was scarcely one : later, in the same year many were reported.

In West Madi, which adjoins the Sudan, in 1925, all the white rhinoceroses encountered were exceptionally nervous and timid, the result of constant molestation by the natives, so in 1928 it was particularly gratifying to find how peaceful and tame they were in the same locality.

There is little doubt that in the old days the white rhinoceros was not unduly persecuted, although hunted for the sake of its meat, for it had plenty of sanctuaries in the uninhabited tracks which separated the various warring tribes. The introduction of firearms, the activities of the petty trader and the demand from the East for rhinoceros horns have nearly brought disaster to the race. Only just in time was a measure of protection afforded it, and even that, a few years later, was admitted to be inadequate, and it now enjoys—as far as the law can ensure—complete immunity from molestation by man. When game pits were abun-

dant many fell victims therein. Accidents may account for the loss of a few : one year two fell into a deep pool by a " lick " and were drowned. A local chief who went to investigate also fell in and did not appreciate intimate acquaintance with the rotting remains as he could not get rid of the disgusting aroma for weeks ; his plight became a standing joke in the neighbourhood.

It was Sir Samuel Baker who first made known the existence of a northern race on the strength of horns he had seen, but it was not till 1900 that Gibbon obtained the first skull from the Lado.

As before said, no specimen has yet been kept in captivity. It was the capture of a tiny juvenile destined for a European menagerie which brought about the murder of an Italian in the days when the Belgians administered the Lado. This hunter caught the rhinoceros as he was starting on a trip after elephants, so he handed it over to a local chief to be cared for pending his return. As soon as he was out of sight the villagers killed and ate the little creature. On the hunter's return he behaved brutally to the chief; and subsequently when moving on again he was ambushed and killed after putting up a desperate and plucky fight. He was a red-headed man with a long beard and the natives cut off his head and carried it about on a spear for weeks. Knowing the full details of the case I cannot help feeling that he asked for all he got.

One of the old-time Lado poachers once tried to ride quite a small youngster but it was much too powerful for him and threw him at once. At his

second venture he was deposited in a dense clump of thorns which put an abrupt and painful termination to his equestrian efforts.

I have never shot a white rhinoceros, and have never had any inclination to do so, much less after experiencing its inoffensive nature—and he must be a bad shot and a poor hunter who allows one of these creatures to get away wounded.

After lengthy acquaintance with the creatures of the wild one usually finds that with each species there is associated some outstanding incident ; in the case of the white rhinoceros there is a memory which will remain ever-green when hunting days are over and Africa itself may be but a memory. It was too dark for photography as I watched three great bulls grazing near me. The sun was fast setting behind a cloud as they slowly wandered from a vast expanse of grassy flats up a scrub-covered hill. Suddenly the sun burst forth from its draping curtain and silhouetted against the huge red orb on the point of making its nightly plunge over the distant horizon, was one of the trio, picturesque, prehistoric and alert ; to me a sad sentinel, symbolical of a noble species standing on the threshold of extinction.