

This map, prepared for the accompanying article, will also be found useful in indicating the scheme put forward in (b) page 5.

LAST STRONGHOLDS OF RHINOCEROS

By R. I. G. ATTWELL

Photographs by author, except page 50.

IN an article in "African Wild Life" (Vol. 1, No. 2) attention was drawn to the importance of the Zululand Game Reserves in the preservation of a representative localised fauna of the Union. These reserves, and in particular the Hluhluwe and the Umfolosi, are of importance in that they are the only strongholds in South Africa of the two African species of Rhinoceros, bizarre, almost prehistoric, odd-toed Ungulates.

The white species does not occur in the Kruger Park, having been long since exterminated south of the Zambesi with the exception of the Zululand area. No traces of the black, spoor or dung, have been seen in the Kruger Park for some years, and in his last report Colonel Stevenson-Hamilton considered that it must be written off as a species there.

A few black Rhino are still to be found in northern South-West Africa, but their future must be regarded as precarious. When South Africa has a properly organised Game Department, an urgent necessity, it might be possible to re-introduce both species to the Kruger Park. For although there are probably more Rhino per square mile of country concentrated in these small areas than anywhere else in Africa, this does not thereby necessarily mean that the future of the two species is safeguarded; indeed, as is pointed out later, it is possible that on this account their safety may be threatened.

It can be confidently stated that anyone wishing to see black Rhino (and incidentally, buffalo as well, which he would be very fortunate to see in the Kruger Park) is bound to do so if he visits the Hluhluwe Reserve. It would be unusual for him to come across the white species there, but a short car trip from the Hluhluwe to the Umfolosi Reserve would rectify that, always providing the visitor was accompanied by a Zulu game guard.*

Protected For 50 Years Both species have enjoyed protection in these areas for more than 50 years. A very rough approximation of their numbers would be from one to 200 for each species, confined in an area of about 170 square miles. It is difficult to obtain more than such crude approximations of numbers even where such large animals are concerned because the thickness of the bush in their habitat coupled with their wanderings makes it possible to recount the same animals when a census is being made.

Each species is two-horned, with the anterior the larger. There is, however, considerable variation, especially in the black, where one comes across adults with the two horns of equal length; and there is at Hluhluwe at least one animal carrying a posterior horn which is longer than the anterior. Elsewhere tri-horned varieties have been found. But whereas formerly the black was classified into different species according to horn variations, now only one species is recognised.

In Hluhluwe, some of the Natives speak of a "mpunyane"—a smaller, short-horned animal which is reputed to be invariably bad-tempered. Some consider that this evidence is sufficient to regard it as a variety, but there

[*The Umfolosi is not at present open to the public.]

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Black and White Compared

appears to be no adequate reason to regard it as such. In Nature there are stunted growth forms. It is worth mentioning here that in Vol. 1, No. 2 of "African Wild Life," the first photograph of a Rhino showed a black species carrying only one horn. This animal, known as Matilda to visitors, lost its posterior horn as the result of a fight, and the writer has a photograph of it taken shortly afterwards when the horn was still loosely attached. The second photograph in the same issue showed a black Rhino wrongly captioned white.



Top: Black rhino cow with large calf (right) showing interest in the photographer who is "creed". Note small tree pushed over for feeding purposes, and bristles on ears.

Horns Not Bony Growths The horns are not bony growths but are outgrowths of the epidermis, and as such are made of a substance akin to hair cemented together. In spite of this, and the fact that they are not attached to the underlying nasal bones, they are efficient weapons capable of inflicting frightful wounds. One has to see Rhinos wounded in fights to appreciate this; the damage done to such tough, thick hides is remarkable. Of anterior horn size in the white, Schilling records one 8½ inches long; Gordon Cumming obtained one of 6½ inches. Both of these were taken from females, in which the horns are longer and more slender than in the males. In this species, the base of the anterior horn differs from the black in tending to be squared off. Rowland Ward's record for the black is quoted at 4½ inches, but a 45-inch, which grew forward instead of upward, was obtained from Mount Kenya. In Hluhluwe, what is probably the longest-horned specimen carries one between 30 and 36 inches which is beautifully shaped.

The black Rhino (*Diceros bicornis bicornis*), although still found in parts of Central Africa, is very rare in the Union. In Africa, taken as a whole, it is probably as much in danger of extinction as its far less numerous cousin; the latter being accorded better protection outside of the Union. Nearly all the specimens surviving in Zululand today are found in the Hluhluwe Reserve; there are very few in the Mkuze.

Curiously enough, in the Umfolosi, separated from the Hluhluwe by a strip of Crown land about 20 miles in length, black Rhinos have hardly ever been recorded. This corridor of country is occasionally used by the white for wandering between the two reserves, but the black appears to be more static. This supports the usual theory that, if left un molested, the black does not wander to any great extent. There is as yet no satisfactory explanation of the specific distribution; the fact remains that the Umfolosi is the home of the white, the Hluhluwe that of the black.

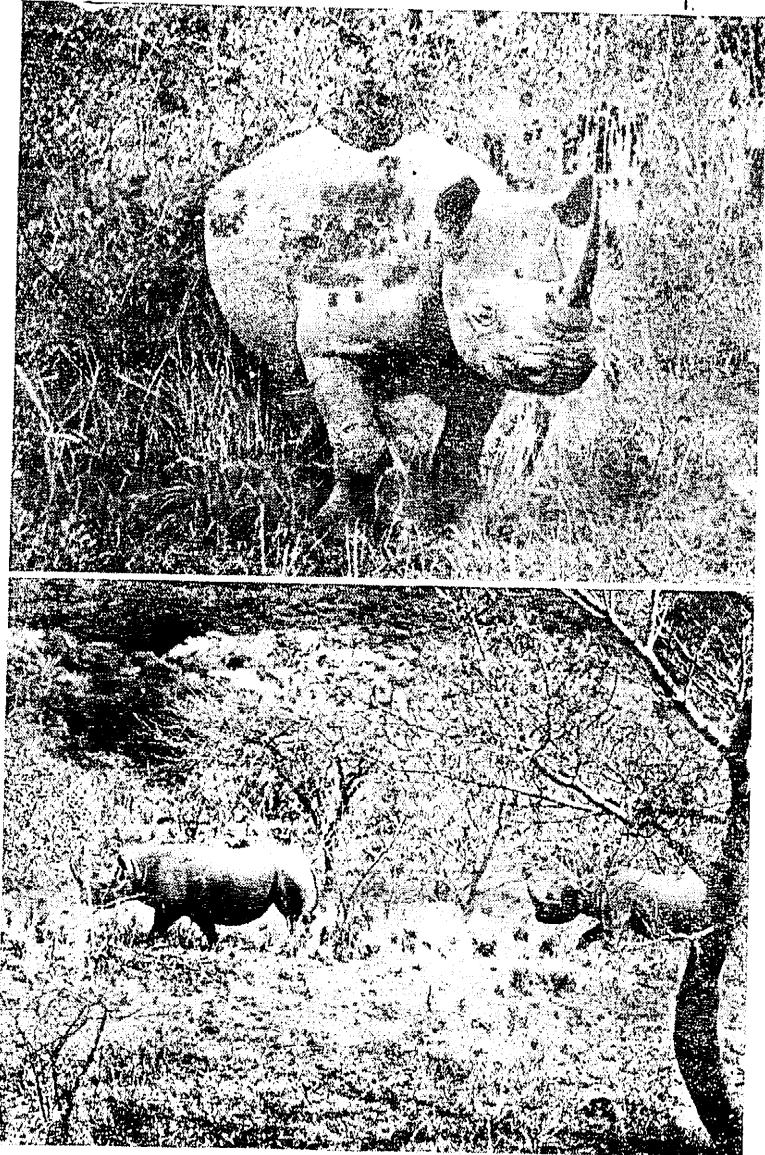
The black reaches to 5 feet 6 inches at the withers, and over 11 feet in length. It has a pointed prehensile upper lip which is used in browsing, and the colour is a dark grey, almost black. Sometimes a truculent beast, it can at times, be dangerous.

Suppurating Sore

An extraordinary feature of the Zululand specimens is that they, almost without exception, have what appears to be a sore (generally suppurating) set back behind the shoulders on each side of the body. This should not be confused with the usual sores on other parts which result from fighting and other causes. Some observers have declared it to secrete noticeably at times, for example, during sexual excitement, and consider that it might be of a glandular nature. The explanation of its origin and function, whatever it is, has still to be put forward.

Captain Ritchie, the Kenya Game Warden, has told the writer that he has not observed this feature in the East African forms; and taxidermists

Looking for Trouble



Top: Black rhino bull, having emerged from thick scrub, in aggressive attitude but undecided about charging. Note bent foreleg and "sore" area.

Bottom: Black rhino cow followed by calf. Note ears of calf set back to avoid thorns (the ears are frequently torn) and "sore" of leading animal. This gives some idea of the Hluhluwe habitat.

in this country obviously do not regard it as an anatomical feature, because they fill in the area.

Histological examination would, of course, supply the answer as to its being a gland, but Rhinos are obviously far too valuable for one ever to be killed for this express purpose.

If a sore, it is indeed curious that the site varies but little. It seems most likely that it is one, however, possibly caused by the irritation of ecto-parasites, and the resultant efforts of the animal to rid itself of the pests.

The southern race of the white Rhino (*Ceratotherium simum simum*) has even more of the romance of rarity attached to it than the black species. Formerly numerous in the area lying between the Zambezi and the Orange it is today extinct except for the remaining few in Zululand. That it was formerly numerous is evidenced by the writings of Andrew Smith, Andersson, Gordon Cumming and others.

Extermination of this magnificent animal, in size second only to the elephant among the world's land animals, was brought about by the ruthless hunting of earlier Europeans and Natives. Because of its inoffensiveness, this animal is easily destroyed.

Races Strangely Separated There is, however, a northern race found in limited numbers on the west bank of the Nile in Uganda (as lately as 1900), extending apparently into the North-East Congo and Southern Sudan.

The separation of the northern and southern races, Colonel C. R. S. Pitman points out, is a remarkable case of discontinuous distribution. There is apparently no geological or other evidence to account for this separation, which must have occurred in recent geological times, because no specific differences have developed. Approximately 15 degrees latitude separated the two races before the extermination of the southern race in all areas except Zululand, south of the Zambezi.

Another curious feature of Rhino distribution, this time in respect of the two species, is that while on the west bank of the Nile the white is found, on the east bank the black occurs—there is no mixing of the two. It would appear that a few hundred yards of water has proved an effective barrier to the spread of each species.

Square-lipped Rhino would be a better name than the present common one of white Rhino, for it is not white in colour—in fact, it is not noticeably lighter than the black.

There are several explanations given as to the origin of the term white, but none of them are satisfactory. The sooner it is dropped, the better. This animal is considerably larger than the other (Chapman, the African explorer, mentions one of his being 6 feet 8 inches in height) and is correspondingly heavier in build. It is often seen in small parties—the writer has seen seven together—whereas the black is seen alone or in pairs, or as cow and calf.

Identification Features The easiest identification features for the casual visitor to use are the square lips with no upper prehensile tip, a longer head usually carried close to the ground, and the massive, pig-like appearance (due to relatively short legs) of the build. The photographs bring out some of the differences between the two species.

For the really interested, there is a host of other differences. For example, if a comparison of skulls is made, the black's teeth will be seen to be worn into alternate ridges and hollows, whereas the white's are flatter. These are adaptations to the diet, and as a result of the different diets of the species the

This Month's Full Plates

We are indebted to Mr. Dick Wolff, of Pretoria, for the following eight full-plates of animals in the Kruger National Park. The magnificent game pictures by himself, Mr. J. W. McDonald, A.R.P.S., Mr. P. W. Willis and others have done much to make South Africans and tourists from overseas more aware of the Union's unique asset and attraction for which succeeding generations have so much cause to acknowledge with gratitude the foresight of Paul Kruger.

respective droppings are easily identifiable: that of the black (the browser) being always more shrubby in content. Again, the white has longer, narrower ears, the nostrils are more slit-like, the skin more folded.

And naturally the habits are different. The white is essentially a grazer of grasses and small shrubs, whereas the black copes with the thorny, dwarf form of *Acacia* karroo, and also numbers the Tomboti tree (*Spirastachys Africana*) among its favourite food materials. It is interesting to watch the method used in reaching the more succulent tips of the thorn bush: the anterior horn is often hooked around the trunk and the animal then leans on the tree, with the desired effect. In many parts of the Hluhluwe Reserve, small trees pushed over in this manner can be seen.

Legends Based on Habit

Bulls species have the habit of voiding their dung in the same place while they are resident in any particular locality, and in the Umfolosi enormous masses of the white's ordure are not uncommon. The black's, however, does not accumulate in such piles because it habitually scatters its dung by kicking it or by pushing it about with the horn. This interesting habit has given rise to several Native legends.

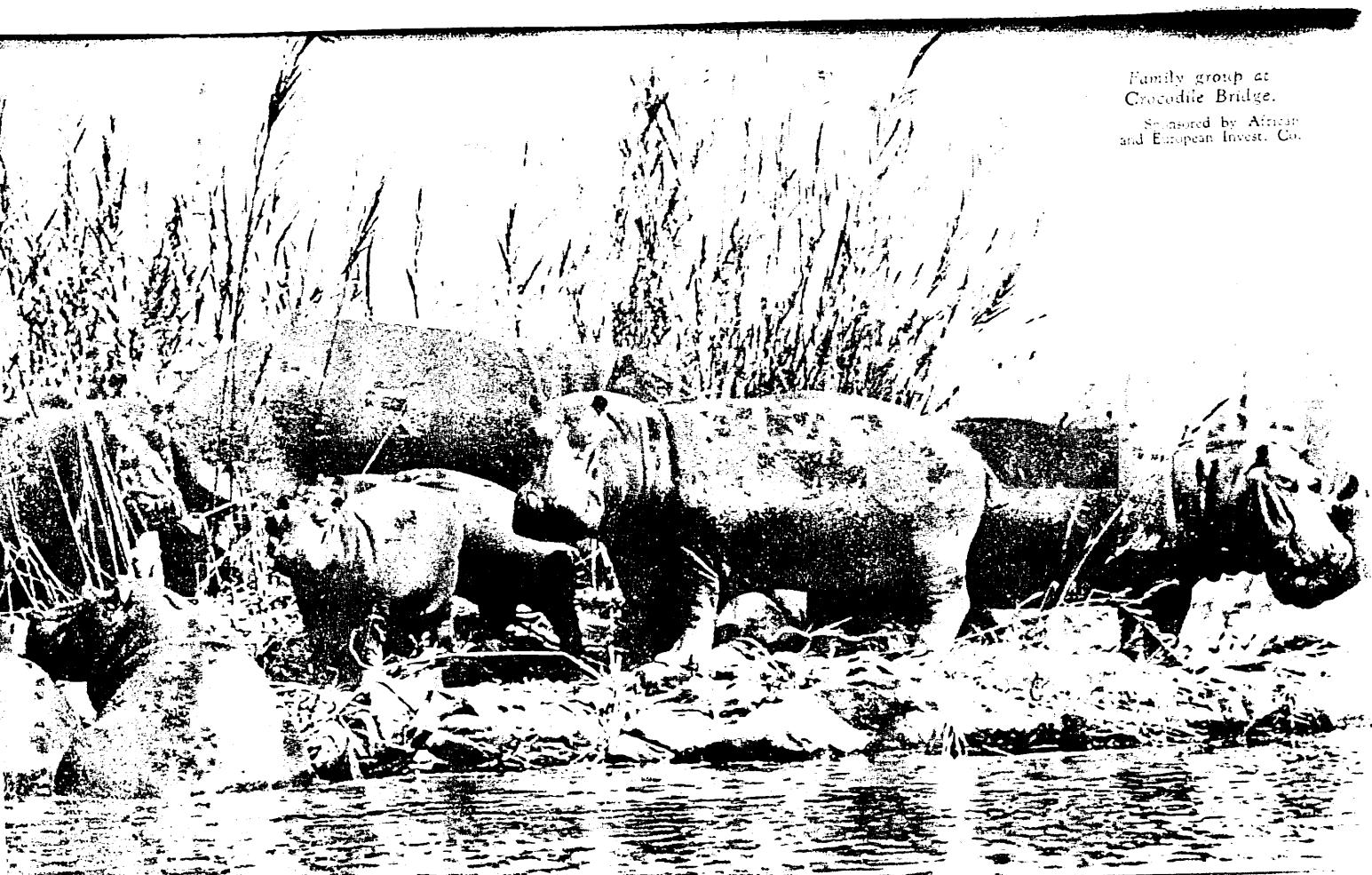
With regard to reproduction, the length of the gestation period does not seem to have been established, but Colonel Pitman mentions that it is believed to be about 16 months for the black. The writer has witnessed, in the spring months, mating of the black; and play, which might have been a form of courtship, in the white.

It is possible that mating occurs at other times, but if fighting is any indication of the breeding season, then it would appear that breeding does take place in the spring months particularly. At this time the bulls are wounded by the cows as well as by their own sex. In the case of mating that was seen, the cow black Rhino had a three-quarter grown calf in attendance, and both she and the calf ferociously attacked the bull before she permitted mating to occur. Between attacks both cow and calf made curious hissing noises at the gory bull, which carried several deep wounds. On another occasion, a bull, obviously attempting to follow up a cow on heat, urinated 12 times within 15 minutes as it moved forward.

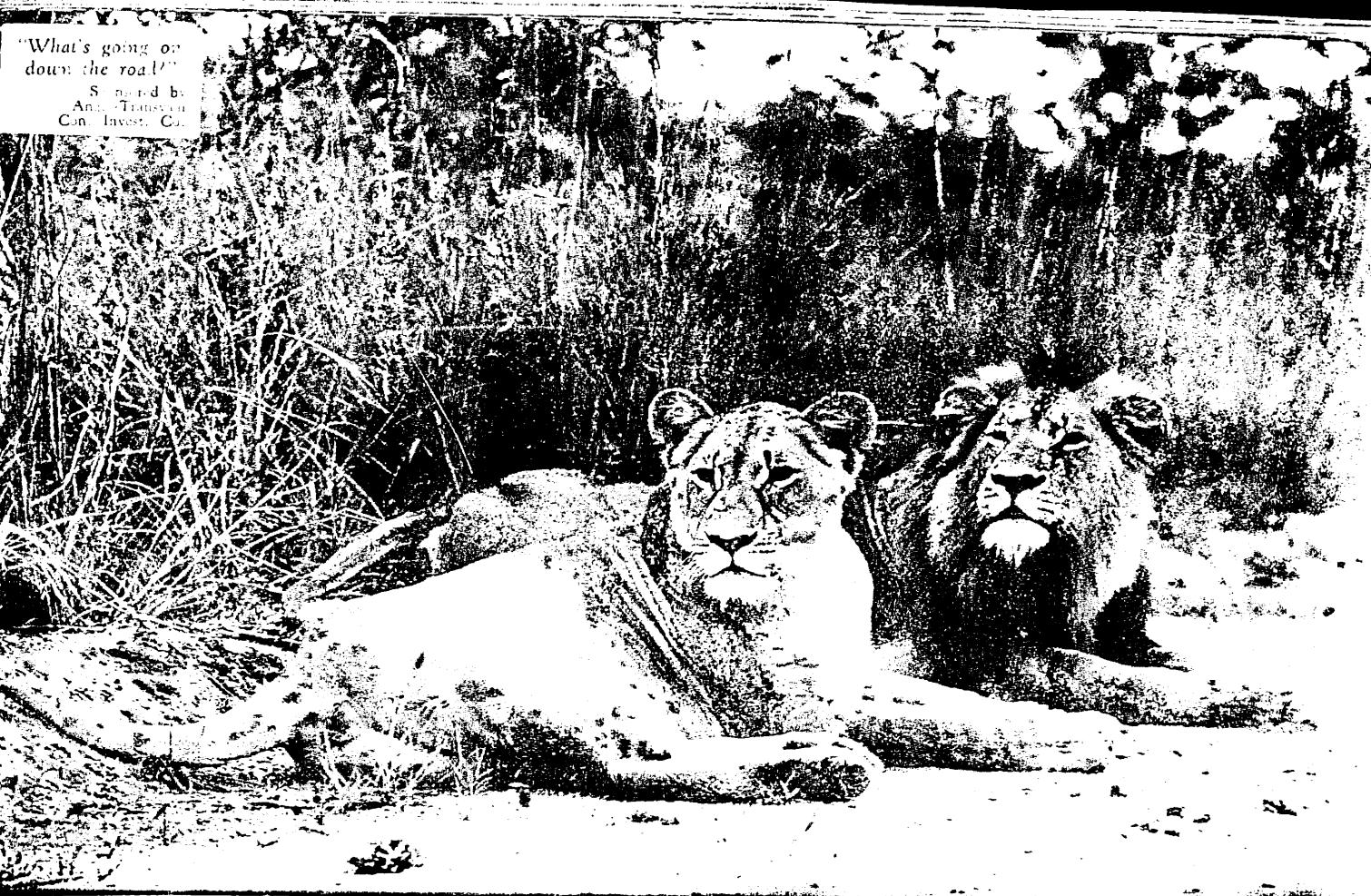
Fights to the Death An idea of the severity of the fighting that sometimes occurs is given by the reported finding in November, 1941, in the Umfolosi, of four dead white Rhino together, presumably killed in battle. On one occasion in the Mkuzi area, loud

Family group at Crocodile Bridge.

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squealings through a portion of the night led to an investigation the following morning which disclosed a young black bull dead, obviously killed in battle. The calves in both species remain with the mother for a considerable time—in fact, it is sometimes difficult to differentiate between parent and offspring—but always leave before the next calf is born. It is commonly accepted that the black leads its calf, but that the white cow follows behind her calf directing it with her horn. Although this is frequently observed, it does not appear to be always the case. Both species have been seen to behave contrary to their rule when frightened, but perhaps the rule holds in normal circumstances.

Both species are sometimes seen in association with other game, but this is no doubt a matter of chance. An inter-relationship exists between the tick birds, the red and yellow-billed oxpeckers (*Buphagus* genus), and both Rhinos. The red-billed bird is the one more commonly noticed climbing over the mammals. These birds, as well as the Burchell's glossy starling (rarely), seem to cope with the ecto-parasites with which the Rhinos are liberally supplied. The oxpeckers are well-known for their screeches of alarm when the human animal approaches Rhinos and other game hosts. The noise serves to warn the animals.

Are Easy to Photograph

Rhinos must be among the easiest of game animals to photograph. All the accompanying photographs were taken without telephoto lens.

The eyesight of the animals is very poor (the white giving the impression of being worse off in this respect), and their hearing cannot be regarded as good; but their sense of smell is acute. Yet despite the earlier remark, photography is often difficult on account of the nature of the habitat: bush and grass, although affording cover, often conceal some part of the subject.

As is usual with all game, these animals, despite their size, can melt into the background of grass and bush, and it is surprising how one can sometimes almost walk on to one of them when they lie up in the heat of the day.

The white is singularly nervous and more care is required to approach closely. This nervousness is possibly part of the animal's makeup, but is far more likely to be due to the frequent harrassing to which the animals have been subjected over the last few years of slaughter campaigns waged on the other game around them in the Umfolosi Reserve. Complete and utter protection from further harrassing should be effected by the Natal Parks, Game, and Fish Preservation Board.

Shout Can Stop a Charge

It is pointed out by authorities that the so-called charges of the black species are induced, in nearly all cases, by alarm rather than by ferocity. Further, more often than not a charge will not be pressed right home; complete inactivity on the part of the observer often brings about a sense of bewilderment in the animal. If it seems that the charge is going to be carried through, a shout or loud whistle will break it down and the animal will retreat hastily in most cases. There is always the possibility of the bad-tempered individual (this goes for any community), and then trouble can ensue.

Natives have been killed in Zululand, but very rarely. It is essential to understand the mentality of your animal if close approaches are to be made—the little signs of indecision or otherwise, fear, inquisitiveness, or anger are there for the observer to witness. And in case this should tempt the uninitiated to take chances, it should be remembered that the agility of a black Rhino, when roused to attack, has to be seen to be believed—it is

Well-Known Characteristics



Black rhino bull breaking off charge.

Capt. J. L. Stanton, M.C.

amazing to see so large and clumsy-looking an animal turn so quickly at speed.

In conclusion, it might be added that with the Natal Province lies a real responsibility in so far as game preservation is concerned—the maintenance and adequate control of the areas wherein these two Rhino species are contained for the nation.

The possibility exists of the ultimate abolition of the Zululand Reserves if D.D.T. and B.H.C. do not provide the answer to the tsetse fly problem for all time. The destruction of these rich and varied areas would be a measure so contrary to our present growing determination to save the little that remains of the irreplaceable handiworks of nature in our country, and so inhuman, that it cannot be tolerated; yet the possibility does exist.

Politics has already played its part in helping to destroy our wild life sanctuaries, and the tsetse problem in the past has not been entirely divested of politics.

Natal Must Get Control

Again, there is the possibility of an epidemic to which Rhinos might be subject, and the Zululand ones would be particularly susceptible in view of their concentration into small areas. In this lies a strong case for the retention by the Province of the Umfolosi and Mkuzi Reserves. The more areas there are, and isolated ones, the better the chances of survival. Every effort should be made by the Province to regain control of these areas now that the tsetse appears to be well under control.



Top: White rhino. Note long head and ears.



Bottom: Old black rhino bull ("Matilda"), the most photographed animal in the Hluhluwe Reserve. Note lack of posterior horn (site marked by scar), a wound above the "sore", caked mud on rear leg from wallow.

The Mkuzi is sufficiently far apart from the other reserves, and, stilling reserve; it is, or rather was, before the recent termination of the campaign, the home of the Nyala in Natal. And the Nyala is of sufficient rarity for this fact to be the sole reason for the retention of the area, quite apart from Rhino.

Unfortunately, the Natal Game Board has given a distinct impression of having a distrust of scientists and their methods—no doubt as a result of their experiences with the veterinarians of the Department of Agriculture, the advocates of the shooting policy as a means of combating tsetse, in the beautiful areas already set aside as reserves.

Pressing for Proper Control Fortunately the Natal Wild Life Society existing state of affairs and is agitating for proper control. For it becomes increasingly obvious (See R. A. Dyer's article, Vol. 1, No. 2) that it may be dangerous to leave nature to itself—such a policy may well lead to serious vegetal deterioration.

Nor are "hit or miss" methods likely to be better. To what extent has indiscriminate annual winter burning contributed to the spread of the thorny Acacia karroo and other undesirable plants in the Zululand areas? Only

ecological research can supply the answer. Again, to quote Colonel Stevenson-Hamilton (*The Low Veld: Its Wild Life and Its People*):

"The terrible damage to the flora in general as a result of these passed, less readily than the ranker and less succulent grasses recover, after they have destruction and wringing of many of the better types, while the and the complete immolation of most of the tiny saplings, are obvious even to the casual observer."

He goes on to show how the effects of indiscriminate burning can be potentially dangerous to the grass-eating fauna generally, and attributes the 1927 period in the Kruger Park, when antelopes died in hundreds, to fierce grass fires occurring in 1925. There is no alternative to the scientific approach. But the adequate any more than one can hope to save our wild life on the cheap: for nothing.

Our Publication Months

The publication months of "African Wild Life" will in future be March,

The Wild Life Protection Society is able to arrange for members inclusive of postage. It is intended in the near future to print a loose index to Volume 1 at a cost of 6d. each for Volume 2 and subsequent volumes to be appreciated if members who require the Volume 1 index will notify the secretary, P.O. Box 1742, Johannesburg, as soon as possible. Orders for the index and/or binding, accompanied by cash, should also be sent to the secretary.

TO TONGALAND

By Dr. E. G. CAMPBELL
President, Natal Society for the
Preservation of Wild Life and
Natural Resorts.

THE Natal Society for the Preservation of Wild Life and Natural Resorts has organised two expeditions, in July, 1947, and July, 1948, into Tongaland in order to carry out a biological survey of this little-known area. To condense the findings into a short article must indeed do them scant justice and can present only a vague reader's imagination.

The party, numbering 22, contained experts in all the natural sciences whose combined reports would fill several volumes and make most wonderful reading for anyone who loves nature. Tongaland is bounded on the west by the Lebombo range of mountains, rising to a height of about 2,000 feet. To the east is the Indian Ocean; north is Portuguese territory, and south is Zululand.

The Pongola River turns sharply north after cutting through the mountains, and presumably through repeatedly changing its course has left a number of pans in which the Tiger fish flourish. The Umkuzi River turns abruptly south after cutting the range and runs into Zululand to St. Lucia Lake.

Down the centre of Tongaland lies the Mosi Swamp, 16 miles wide and about 100 miles long. If you fall into this swamp in a drought, like Leonard Fleming's Free State rivers, you have to get up and brush the dust off.

Prof. Beyer's theory, published in the Natal Society's last Bulletin, that the land has risen, diverting the Pongola north to join the Usutu from its natural flow to the Kosi group of lakes, and diverting the Umkuzi south to St. Lucia from its natural flow to the Ngobeseleni gives much food for thought. It is founded partly on the findings of how the level of Lake Sibayi has fallen, or rather the banks have risen between 30 and 40 feet in successive movements.

implements of Stone Age

Our archaeologist, Gordon Cramb, found in the hill-washes of volcanic gravels east of the range many implements of the middle and late stone ages, worked in agate, chalcedony, chert and other fine-grained stones, which because of the comparative smallness of the raw material were smaller than expressions else-where of these two phases. He found the dune formations on the