

Ulcerating Wound Behind the Shoulder of the Black Rhinoceros (*Diceros bicornis*) in the Hluhluwe and Mkuzi Game Reserves of Zululand

By DR. K. C. A. SCHULZ

IN an article entitled "Some Notes on the Rhinoceros" appearing in the June issue it was stated that it seems incredible that a proper examination does not appear to have been made of certain wounds that occur behind the shoulder of the black rhinoceros. This condition has been under investigation at Onderstepoort for some time, although, to date, no data have been published. In this connection it must be realised that very little is known of these wounds due to the difficulty in collecting suitable material for investigation from such a restive and dangerous animal, particularly as such information as is forthcoming can only be obtained at postmortem examinations done immediately after death.

The appearance of these peculiar sores, most often seen behind the shoulders of the black rhinoceros in the Hluhluwe and Mkuzi Game Reserves, has been the subject of interest for many years. They cover an area about six inches in diameter, and the shoulder sore is always situated in the same position. The sores are more active and clearly visible during summer months, when they become distinctly red and bloody. At this stage they are usually accompanied by itching of varied intensity and the harried animals try to gain relief by rubbing the affected regions on stationary hard objects, thereby causing more severe and extensive wounds.

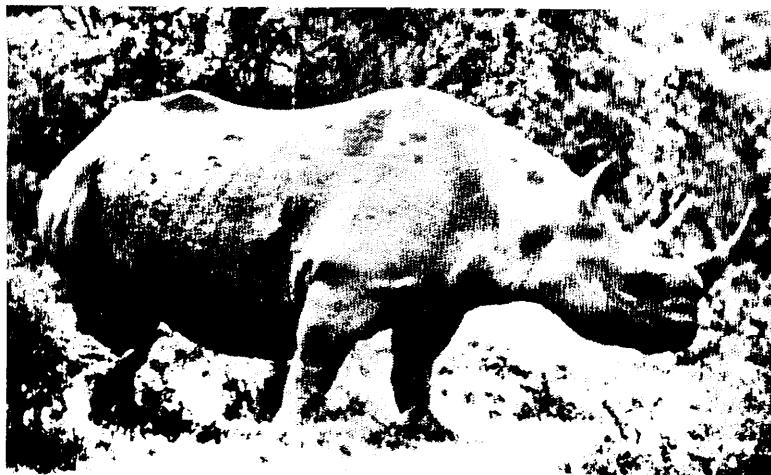
As winter approaches the lesions gradually recede, and for certain periods they are hardly visible. They also become less apparent after a rhinoceros has been rolling in mud or dust. Similar sores often develop in other parts of the body, such as the ventral aspect of the neck and abdomen, and the front of the shoulders and flanks, but these latter never attain the intensity of those behind the shoulder.

Except for the skin affection the rhinoceros appear quite normal and no systemic disease is observed. The sores tend to reappear off and on for a period of several years.

The marks are apparently present in all adult animals, both sexes being affected to the same extent, irrespective of the type of country or the grazing. The age at which the affliction appears is not known, but animals under 15 months do not usually show it.

Strangely enough only the black rhinoceros and not the white (*Ceratotherium simus*) is affected, despite the fact that the two species often occupy the same areas in the Hluhluwe Game Reserve.

A similar condition has been described in the black rhinoceros in the Amboseli National Park in Kenya, but whether it occurs in Southern Rhodesia could not be ascertained.



A Black Rhinoceros in the Hluhluwe Game Reserve showing the lesion behind the shoulder.

(Photo: Natal Parks, Game and Fish Preservation Board.)

The cause of these lesions has been variously ascribed to wounds acquired whilst fighting or whilst repulsing the attention of an undesirable bull, or caused by external parasites, or by the pecking of the red-billed ox-pecker (*Buphagus sp.*) or to some sort of glandular activity. Of all these possible causes, only that relating to the gland can be regarded as a primary cause, the others being merely contributory factors.

The appearance of the marks in adults only and their seasonal occurrence have supported the belief that they are associated with a special "glandular activity," in these localised areas during the mating season. Although this theory seems the most popular, no one has as yet been able to produce evidence to substantiate it.

Glandular tissue of this nature is not uncommon in mammals and is particularly prevalent among wild species. It is usually present in both sexes but is invariably more prominent and better developed in the sexually-active male. Periodically these glands become enlarged and clearly defined, actively secreting a tenacious, syrupy or greasy substance with a pungent, offensive or aromatic odour. These glandular products play a very important part in attracting the sexes and/or stimulating their sexual desire. The site of this specialised tissue differs in the various mammals. It is confined to the genitalia either in the preputial (beaver) or perineal area (civet cat); midway between the eyes and ears (elephant), along the dorsal aspect of the neck (camel), posteriorly at the base of the horns (chamois); and the back, sacral region of an American pig (*Dicotyles sp.*) In none of these instances, however, has an ulcerative wound been recorded.

Visible sexual behaviour in the rhinoceros is seldom observed. It appears to be most active during the summer months. Mating may, however, occur during winter, i.e. at a time when the lesions seem to be dormant or less visible. There is no evidence that the sexual desire of the black rhinoceros is in any way influenced by this condition.



This close-up photograph clearly indicates the roughened and mottled appearance of the affected skin.



Portions of the adult worm (filaria). Note the marked changes in the epithelium.

The result of the histological examination of affected tissue, taken from different sores and at different stages of the disease, revealed the presence of young (*microfilariae*) in active lesions, and adult forms of a worm (*filaria*) in milder lesions, whereas in less apparent ones no *microfilariae* and only an occasional *filarid* could be found. The normal tissue and glands adjacent to the sores do not harbour these parasites. The lesions are usually localised ulcerations involving the superficial dermal layers only, which are frequently further contaminated by bacteria and/or fungi deposited by visiting flies, or by the soiling of the skin's surface with mud or vegetable matter. Though ectoparasites, like ticks and numerous biting and/or blood-sucking insects, pester the animals considerably, their exact rôle in the transmission of this condition is not known.

The findings leave no doubt that the primary cause of the lesion is a worm (*filarid*), the type of which could not be determined from the sections. The apparent periodic seasonal itching of the skin, with consequent damage through rubbing, is probably closely associated with the expulsion of the *microfilariae* (immature worms) or a new infestation. Such periodic exacerbation of cutaneous filarial infections is known to occur in other species, as for example, in the Indian elephant. In this case it may be assumed to coincide with the prevalence of a possible arthropod (tick or insect) vector (transmitter).

Editorial comment

The known vectors for filarids are various species of mosquitoes (both anopheline and culicine), culicoides (midges) and simulids (sand flies); in this order of importance.

Chrysops (a Tabanid or Horse fly) has been shown to be a vector of two human filarids, but thus far has not been implicated as a vector of filarid worms parasitic in other hosts.

Fieldwork Section

IN its desire to foster a wider appreciation of wild life with the object of encouraging members to assist in the conservation of all our natural resources, the Council has for long endeavoured to establish some form of fieldwork section that will undertake excursions into the veld to study different forms of wild life. It is therefore extremely pleasing to be able to report that certain members have come forward with offers to assist in organising such a section providing a sufficient number will intimate their intention to take an active part in the operations.

It is suggested that, as an initial step, ten members will be sufficient to start the project, but the protagonists of the scheme feel that satisfactory results can only be achieved if those who volunteer are prepared to become active participants. It will not be necessary for volunteers to be scientifically inclined or experts in any particular sphere, but enthusiasm and the desire to undertake research work in connection with mammals, birds, insects, reptiles or flora will be the major requirement.

Immediately sufficient members intimate their wish to join the section, arrangements will be made to set it in motion.

CORRECTION

The photograph of three White Rhinoceros by W. Schäfer, on the cover of the December, 1960, issue was taken in the Umfolozi, and not the Hluhluwe, Game Reserve, Zululand.

Rhino and Elephant



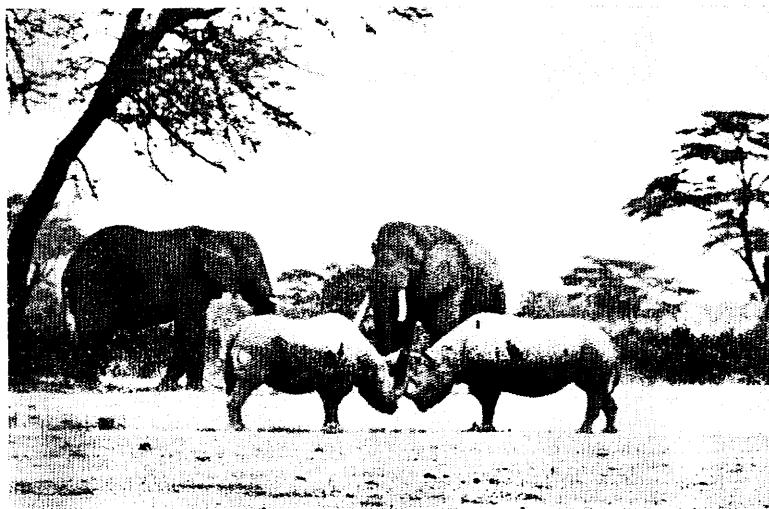
The rhino passes the elephant at a distance of 15 feet.



The rhino meets a friend.

Although passing within a few feet of each other these rhino and elephant in the Amboseli National Reserve ignore each other completely.

in Amboseli National Reserve



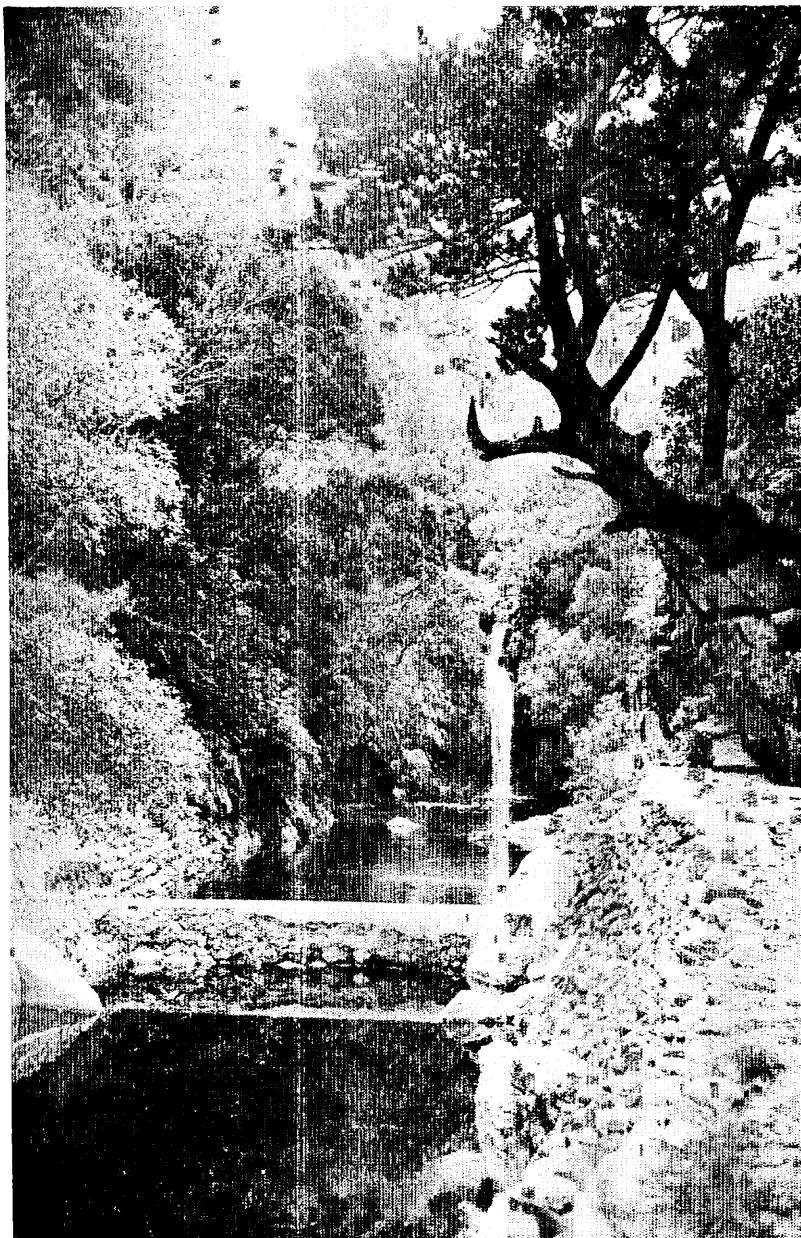
The two rhinos rub horns in greeting.



The rhinos nonchalantly depart and the elephants remain unmoved.

The lesions behind the shoulder of the rhino, referred to in this issue, are clearly evident on both rhino.

(Photos: A. Duveen)



The waterfall and weir on the boulder-strewn stream in the western portion of the Reserve.