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OBSERVABLE CRITERIA FOR ASSESSING THE PHYSICAL CONDITION OF THE WHITE RHINOCEROS CERATOTHERIUM SIMUM IN THE FIELD.

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Objective criteria for assessing the physical condition of the white rhinoceros are defined. These include the order in which the signs of condition loss occur. Mention is also made of certain phenomena which are often mistaken for signs of condition loss, but do not in actual fact indicate a deterioration.

When attempting to make decisions regarding the management of a white rhinoceros population in a certain area it is important to consider both the condition of the habitat, and that of the animals utilizing the habitat. The habitat deteriorates before the animals; so when signs are observable in the latter, it is most important that they should be noted, and action taken immediately.

Observations have been made during each season of the year in areas of varying population densities and habitats.

To demonstrate clearly the signs to be noted during a deterioration in physical condition they are described, and shown on photographs taken in the field.

- (a) The first sign is a groove seen on the neck caused by the reduction of the fat deposit over the funicular part of the ligamentum nuchae. This is clearly shown in figure 2. The lamellar part of the ligamentum nuchae stands out clearly along the dorsal edge of the groove. This massive body of fibrous elastic-like tissue does not atrophy when the animal loses condition. The groove is bordered ventrally by the complex mass of the cervical muscles. In the early stages of condition loss this groove is best seen when the head is down in the grazing position. When the head is raised the cervical muscles contract, tending to obscure the groove.
- (b) The next stage of deterioration is seen in the region of the scapula, or shoulder-blade. The anterior border of the scapula bone shows as a sharp line as the suspensory muscles of the front limb begin to atrophy. Then the wasting of the supra and infra-spinatus muscles becomes noticeable with the protrusion of the spine of the scapula (Figs. 2 and 4)
- (c) By the time the spine of the scapula has become very prominent there is a general progressive muscular wasting all over the body. The skin fold of the flank which is nearly always present, becomes very prominent, and may become double, particularly when the rhino is lying down (Fig. 3). At the same time there is a marked groove along the back,



Fig. 1:
Subadult. Female. Nearly full grown. Condition 'good'.

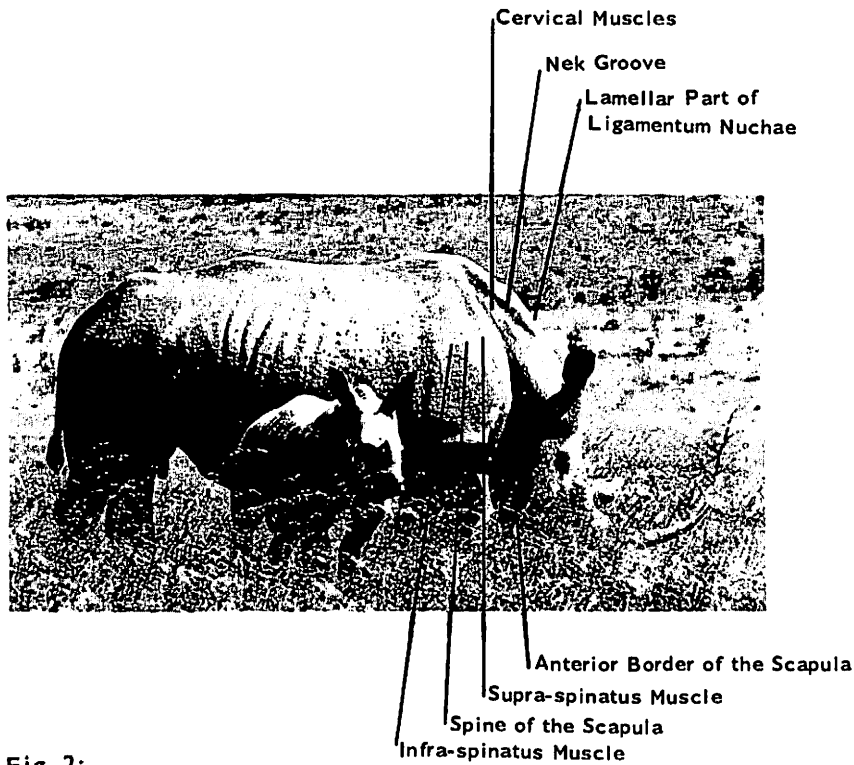


Fig. 2:
Adult female with calf. Condition 'fair.'



Fig. 3:
Adult female with calf. Condition 'poor'.



Fig. 4:
Adult female. Condition 'very poor'.

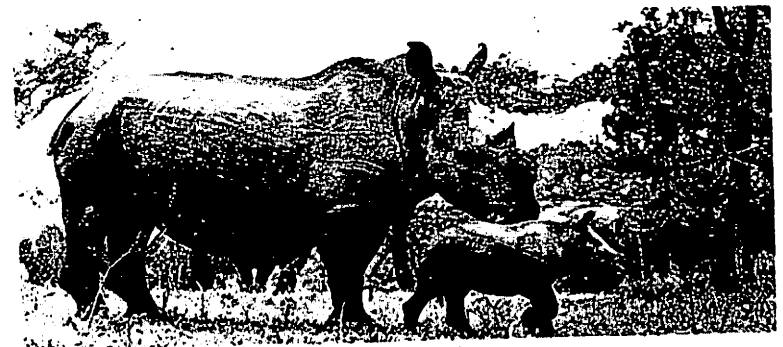


Fig. 5:
Adult cow and young calf about 3 months old.

bounded medially by the vertebral spines and laterally by the proximal end of the ribs (Fig. 4). This is due to the atrophy of the massive longissimus dorsi muscles. Finally a distinct hollow is seen on the upper hind limb as a result of the wasting of the large gluteus and biceps muscles.

Animals which have reached the condition described under (c) above, are very unlikely to survive, even if the environment were to become favourable.

It is stressed that there are a number of signs that would suggest a deterioration of physical condition but do not appear to do so. The skin folds over the ribs, particularly the last seven, often give a rhino a 'ribby' appearance, which can often be seen in animals which are in excellent condition (See Fig. 1). Also, the white rhino always has three dorsal bony protruberances. The front one is caused by the long dorsal spines of the anterior thoracic vertebrae, the middle one by the dorsal spines of the lumbar vertebrae, and the posterior one by the sacrum (See Fig. 2).

Figure 1 shows a subadult female in excellent condition. There is no wasting of the muscles in the shoulder region. The fold of the flank is not prominent, and the dorsal groove lateral to the spine is almost absent. There are, however, the skin ridges over the posterior ribs, and the three dorsal protruberances.

Figure 2 shows fairly early deterioration of condition. The neck groove is deep, the anterior edge of the scapula is marked by a sharp line, and the spine of the scapula is just visible with some atrophy of the supra and infra-spinatus muscles.

The animal in figure 3 is in poor condition. The neck and scapula changes are well advanced, and the fold of the flank is very prominent and double.

The cow in Figure 4 exhibits all the above retrogressive changes, plus the marked dorsal groove lateral to the vertebrae. There was also some atrophy of the hind leg muscles.

For purposes of classification the following terms are proposed to describe the physical condition of white rhinoceroses.

'Good' the animal shown and described in Figure 1.

'Fair' that in Figure 2.

'Poor' that in Figure 3, and

'Very Poor' that in Figure 4, and worse to the point of death.

THE DEVELOPMENT AND BEHAVIOUR OF A RUSTY-SPOTTED GENET, GENETTA RUBIGINOSA PUCHERAN.

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INTRODUCTION

Observations on a young rusty-spotted genet (Genetta rubiginosa Pucheran) were made over a period of a year to establish facts concerning its development and behaviour.

While it is clear that the behaviour of a captive animal must differ from that of an individual living in its natural environment, information of value may be derived from the actions of an animal that is brought up and allowed to wander at will in a human habitation. Under these conditions one can learn much about an animal's innate behaviour and achieve what would have been a virtually impossible field task. Field observations on small nocturnal carnivores are rare, and when encountered, such animals are rarely seen for more than a few minutes, but these brief observations could become much more meaningful when associated with detailed observations on a semi-captive animal.

The genet used for these observations was acquired at the age of approximately four weeks and was kept at the writer's home in a Pietermaritzburg suburb.

These are the first observations on Genetta rubiginosa, but Dücker (1965) has considered various aspects of genet behaviour, Leyhausen (1965) has dealt with prey capture and killing patterns, Taylor (1970) has dealt with some aspects of genet locomotion, and Volf (1959) gives details on the physical development of specimens of Genetta genetta. The species studied by these authors are closely related to Genetta rubiginosa.

GROWTH AND DEVELOPMENT

When acquired, the genet's eyes had opened, canine teeth had just started to erupt, and the animal could crawl, lifting the front portion of the body and pulling the hindquarters along. The age of the animal was estimated to be three or four weeks. A week later the genet was able to walk a few steps, very unsteadily. At the approximate age of eight weeks the genet could walk very well and started to run about the house. When nine weeks old the hindquarters appeared to be strong and the animal was sure-footed.

The estimation of the animal's age when acquired seems to be fairly accurate. Volf (1959) noted that in the case of three young Genetta genetta, the canines erupted when the animals were four weeks old. Mansfield (pers. comm.) reared a young Genetta rubiginosa of known age. The eruption of canines in this animal was