

water or a rising water level for triggering the act of spawning, and that spawning may be delayed until conditions are suitable.

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THE REPRODUCTIVE SEASONS OF SOME MAMMALS IN THE
KRUGER NATIONAL PARK*

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INTRODUCTION

The Kruger National Park, some 7,340 square miles in extent, occupies the north eastern corner of South Africa between 22°25' and 25°32' latitude south and 30°50' and 32°2' longitude east. The area is covered by semi-arid bushveld vegetation and receives an annual rainfall ranging from 18-28 inches.

The larger mammals occurring in this area are also distributed in areas further north, most ranging as far as Kenya. Considering the extreme range of distribution, it may be expected that there will also be a corresponding variation in their breeding seasons. Most of the information published on this subject to date relates to the central regions of Africa, or comprise records from zoological gardens. It was, therefore, considered that the publication of our results, admittedly incomplete at this stage, may serve as a useful basis for comparison.

The terminology in this field is rather confusing. In this paper "reproduction" and "breeding" seasons are general terms, while "mating" and "calving" season denote the function under discussion.

TECHNIQUE

The results summarised here are observations made by the biological and ranger staff over the years, and are derived from records kept at Skukuza.

Not wanting to imply statistical accuracy where none exists, an attempt has been made to present the seasons schematically in weekly intervals. Calving seasons, where these exist, are indicated on the diagrams in solid black. Where no season is apparent, the available calving records are entered as blacked-in circles. This procedure is also followed in the case of unseasonal calves. Mating records are presented in the diagrams as circles.

Although the calving seasons, as presented here, are not statistically derived, they are accurate, and have been confirmed through repeated observation over the years.

The taxonomic status of the animals presented below is according to Meester and Davis (1964).

RECORDS OF INDIVIDUAL SPECIES

HERBIVORA

Loxodonta africana (Blumenbach) African Elephant.

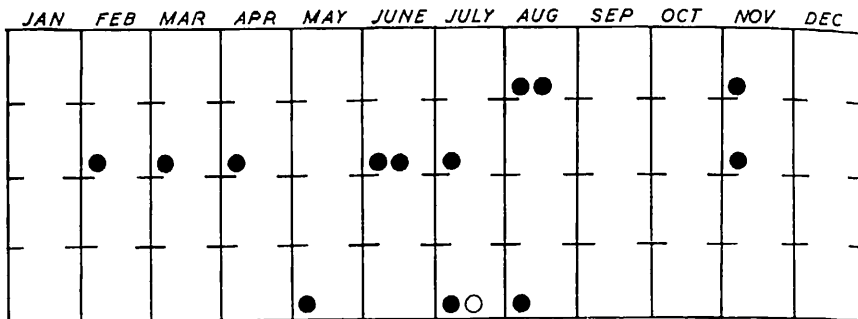
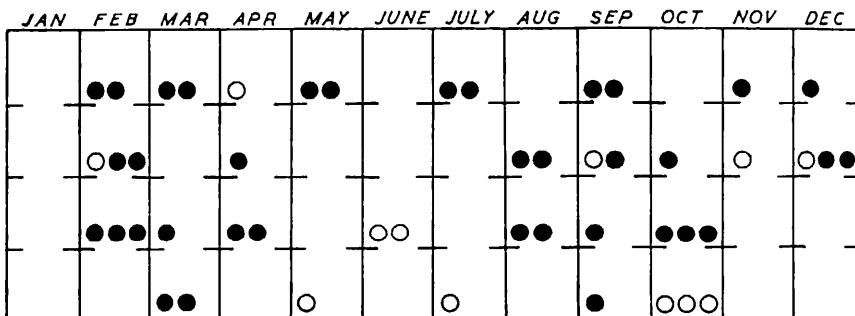
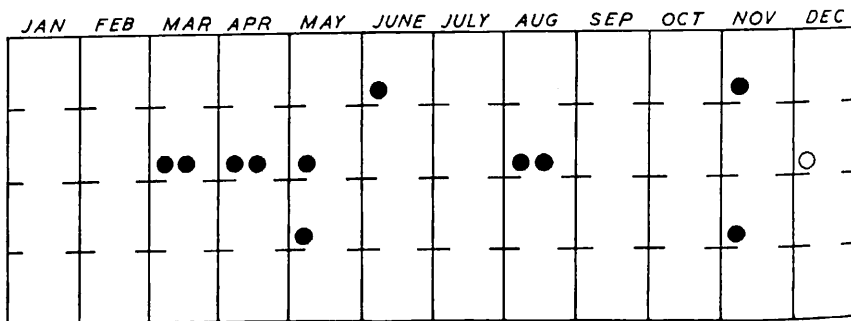
The recording of reproductive data concerning the elephant is particularly difficult in the Kruger National Park. The breeding herds are shy and seldom allow prolonged periods of observation. Fig. 1 depicts the distribution of the meagre records available for this species.

At this stage we have no reason to doubt that the elephant here, as in Uganda (Perry 1952) and Zambia (Ansell 1960), have no fixed calving season.

*Received August 1966

Zoologica Africana 3 (2): 189-210 (1968)

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Fig. 16. *Sylvicapra grimmia*Fig. 17. *Giraffa camelopardalis*Fig. 18. *Ceratotherium simum*

season and the middle of the dry season. Their results are based on a large number of skulls obtained from tsetse control operations.

Oreotragus oreotragus transvaalensis Roberts. Klipspringer.

In the case of the klipspringer, we have records of lambs in November (1) and December (1), while mating behaviour was observed in July.

These results are inconclusive and considering the lack of data in the literature, special attention should be paid to this species.

Giraffa camelopardalis giraffa (Boddaert) Giraffe.

Giraffe in the Kruger National Park appear to have two definite peaks in their calving, one during the months February to March, and the other during August, September and October. The observations outside these periods may well be observations of older calves as it is by no means easy to determine the age of a young giraffe in the veld.

Ansell (1960) finds no definite calving season for giraffe in Zambia, but quotes other authors mentioning the months October and March.

The fact that two peaks were not as clearly indicated as in our data, might have influenced these authors in believing that giraffe calve throughout the year.

Ceratotherium simum simum (Burchell) Square-lipped Rhinoceros.

Square-lipped Rhinoceros have only recently been re-introduced to the Kruger National Park, and consequently we have limited data concerning their calving season. This data, however, constitutes the record of every known calf to date.

Fig. 18 presents the information at hand and it is quite evident that no conclusions can be drawn at this stage.

Player and Feeley (1960) report no season for this species, but find that females in oestrus are most frequently seen from July to September.

Equus (Hippotigris) burchelli antiquorum H. Smith. Burchell's Zebra.

In the Kruger National Park zebra foal from September to March. There is, however, a peak during the period November to February.

Brand (1963) states that in the National Zoological Gardens at Pretoria, zebra seem to have no specific season. His data, however, also appears to indicate a peak during January and February.

The results Ansell (1960) obtained in Zambia are interesting in that he finds a distinct season from March to October, with a peak during July and August. This is exactly opposite to the season experienced locally.

Klingel (1965) provides accurate data for the Ngorongoro crater in Tanzania. He finds a foaling season from October to March, with a peak in January and February. This confirms our observations and makes Ansell's data difficult to explain.

In horses the reproductive cycle is controlled by an increase in the photoperiod, in contrast to the ruminants, where it is regulated by a decrease in the amount of daylight. It would appear from the available data as if this is also the case with zebra, and this fact also tends to invalidate Ansell's findings for zebra in Zambia.