

THE BREEDING SEASON OF THE ROCK HYRAX, *PROCAVIA CAPENSIS*, A LESSON IN ADAPTATION

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The Rock Hyrax, *Procavia capensis*, has received considerable attention from research workers in recent years. Published records indicate that the Rock Hyrax or Dassie mates between February and July and the young are dropped during the period September to March, depending on the area (Miller 1971, 1973).

To date there have been no records in South Africa of young being dropped in the winter months of June and July. No work has been done previously on this species in the arid zones of Namaqualand and Bushmanland.

During the course of a mammal survey of the Cape Province two visits were made to the farm "Steyr-kraal", on the south bank of the lower Orange River in Bushmanland. Both visits were made in July, of 1978 and 1984.

In the first sampling period two juvenile Rock Hyrax (300 g; 330 g) were collected, as well as one adult female carrying two full-term foetuses and one lactating female were shot. In the second sampling period one juvenile (305 g) and a lactating female were collected. Based on calculations of growth rates of captive born Rock Hyrax (Fairall 1980; personal records), it is estimated that the three juveniles were born in the first half of June.

In addition to the animals collected many juveniles were observed. In July 1984 eleven small juveniles were counted at one time, during a single observation period.

Thirty kilometres to the south, on the farm "Onder-Namies", where mean maximum temperatures are lower than those at "Steyr-kraal", no juveniles were observed (July 1984) and one adult female shot was carrying close to term foetuses.

Miller (1973) found that the Rock Hyrax is a thermolabile animal, exhibiting poor physiological regulation of body temperature. He goes on to say that the ultimate causes of the timing of the mating season in the Hyrax are probably a combination of several environmental factors and their relative effects on both young and adult animals.

In the case of the present study it would seem that temperature is the pivotal environmental factor.

When mean maximum daily temperatures are compared for areas previously studied, namely Jansenville (E. Cape), Montagu (SW. Cape), Willem Pretorius Game Reserve (OFS) and Percy Fyfe Game Reserve (Transvaal), and the current observation site, "Steyr-kraal" in the lower Orange River basin, it becomes clear that mid-winter daytime temperatures in the latter area (based on temperature information from Goodhouse) are comparable to spring and autumn temperatures in the other areas (Fig. 1). Mating and conception take place between February and July in previously studied areas, but between September and November in the current study site. Parturition in previous studies was determined as occurring between September and March, but in the lower Orange River basin young are dropped during June and July (Fig. 2).

At the lower Orange River study site rainfall plays little or no role in influencing Rock Hyrax reproduction, as the vegetation belt along the river provides an adequate year-round source of food. Adequate moisture is also supplied by the river and adjacent pools. Temperature is probably the environmental factor which determines breeding season in this area. The lower Orange River basin has some of South Africa's highest mean monthly maximum temperatures, with mean mid-summer temperatures being substantially higher than in other previously studied areas in South Africa. Mean winter maximum temperatures are consistently higher in the lower Orange River basin than in other previously studied areas already mentioned. The winter months are thus far more favourable for newly born young than are the summer months. This finding points to

the Rock Hyrax having adapted its breeding season to a period of more tolerable temperatures for newly born and developing young, in an otherwise highly suitable habitat.

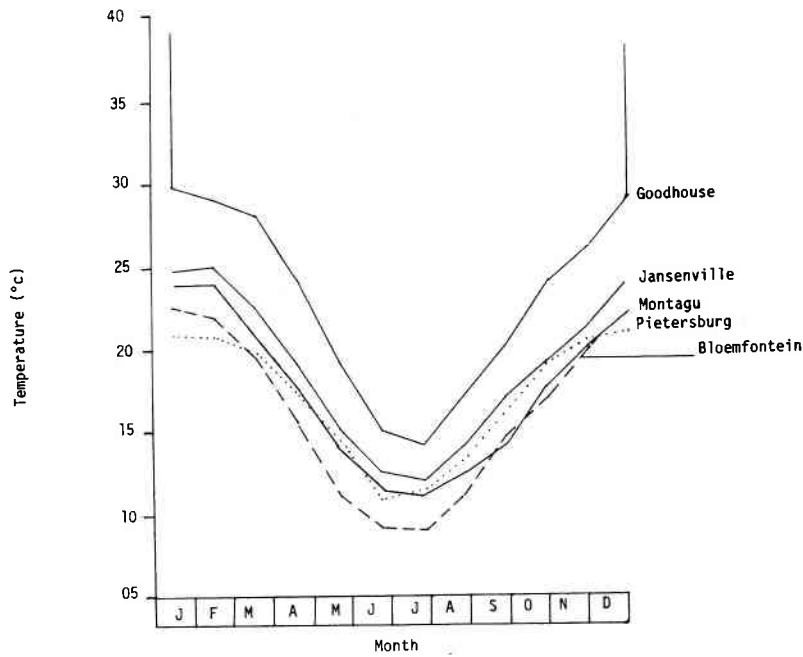


Fig. 1. A graph comparing temperatures of different areas in which Rock Hyrax were studied. Goodhouse was the nearest weather station to 'Steyr-Kraal'.

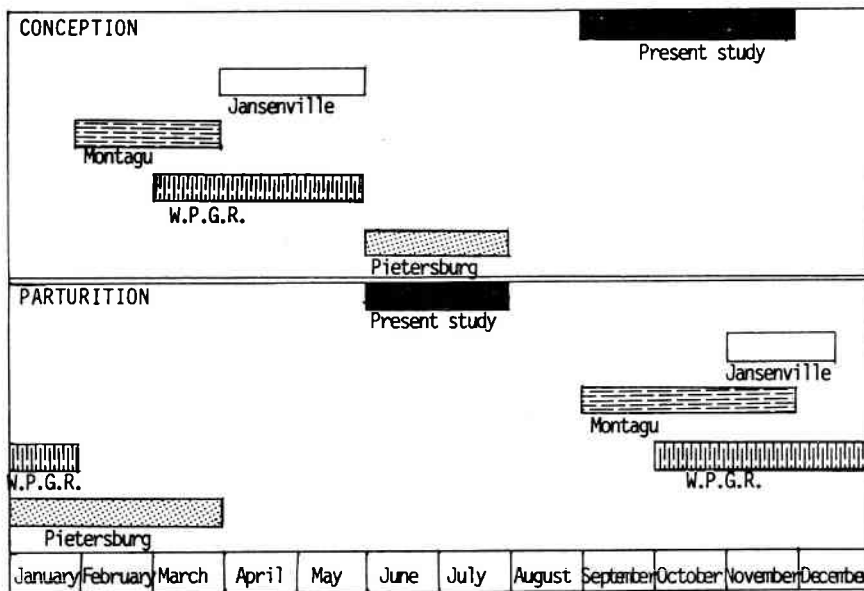
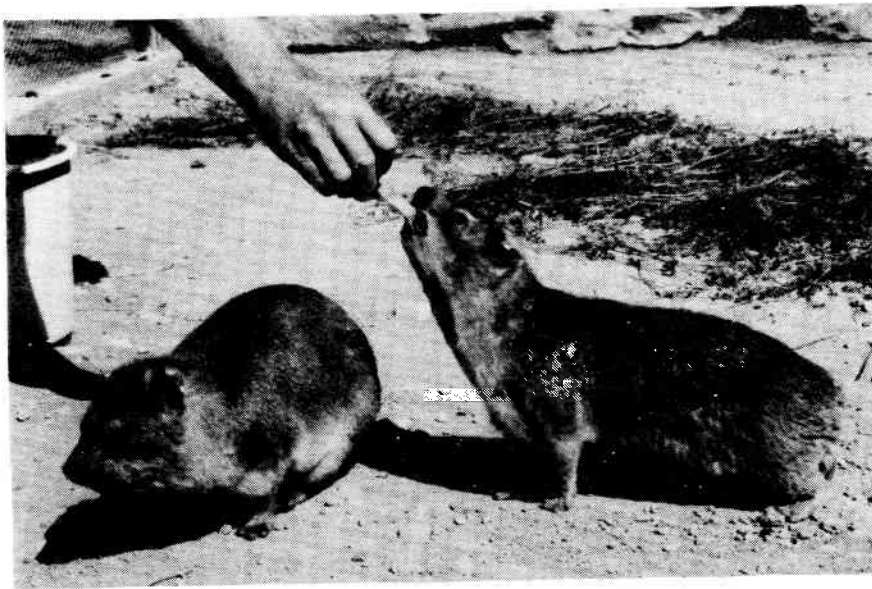
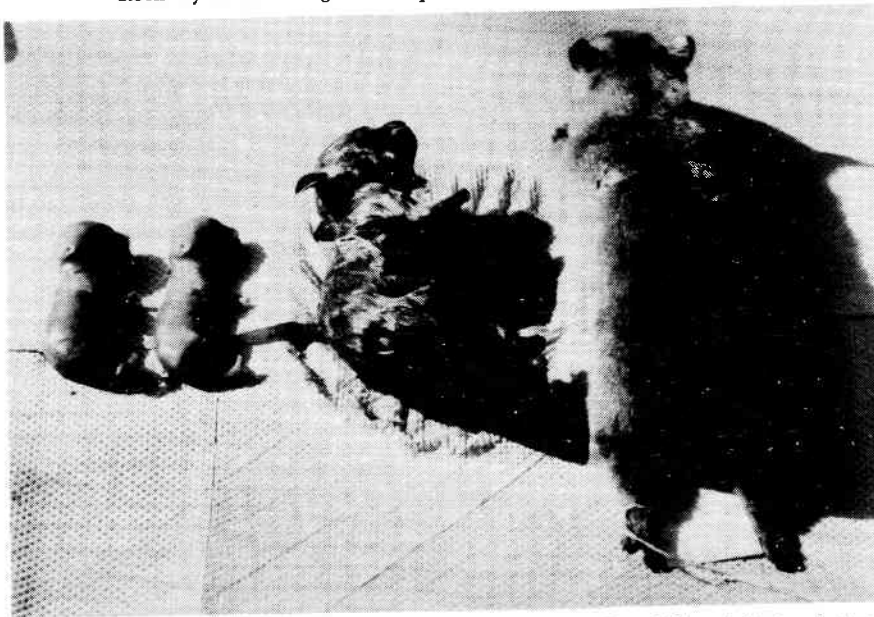


Fig. 2. A comparison of Rock Hyrax conception and parturition times in different study areas. W.P.G.R. stands for Willem Pretorius Game Reserve, Orange Free State



Rock Hyrax used in growth experiments (Photo: Chris Stuart)



Rock Hyrax foetuses and young collected in July/August 1984. From left to right: two foetuses taken from a female shot in the Karoo National Park, Beaufort West, a full-term foetus taken from a female shot at 'Onder-Namies' and, a free-running juvenile shot on the south bank of the Orange River at 'Steyr-kraal'.

References

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