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# CHROMOSOME ANALYSIS IN THE KRUGER NATIONAL PARK – THE CHROMOSOMES OF THE SADDLE-BACKED JACKAL *CANIS MESOMELAS*

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## *Introduction*

Among the present-day members of the Canidae family are included the dogs and foxes (Wurster and Benirschke 1968). The genus *Canis* is represented in Africa by four species of jackal (Bigalke 1972). This paper presents the chromosome findings in a male saddle-backed jackal *Canis mesomelas* studied in the Kruger National Park, Republic of South Africa.

## *Material and Methods*

The animal used in this investigation was shot for chromosome and other studies. As soon as possible after death, bone marrow was squeezed from the dissected sternum. The marrow cells were successively exposed to colchicine, hypotonic medium and fixative using a modification of the technique of Wallace and Fairall (1965). Cells squeezed from testicular tubules were similarly treated. The fixed cells were later spread on glass slides at Skukuza laboratory, Kruger National Park. Conventional chromosome staining (Leishman stain) was used.

## *Results*

Mitotic Studies. Adequate numbers of dividing cells of good quality were observed in bone marrow preparations. The modal diploid number was 78 in 18 cells examined.

A study of metaphases revealed that all but two chromosomes in each plate were acrocentric. The exceptions were a large, unpaired submetacentric and a very small, unpaired, submetacentric chromosome. The latter chromosome was so small that its morphology could be accurately made out only in some metaphase plates on direct micro-

scopical examination. A metaphase from the male jackal is shown in Fig. 1.

The large submetacentric chromosome was provisionally identified as the X, and the small submetacentric as the Y. It was impossible to identify autosomal pairs, as the size differences among the acrocentric chromosomes was very small.

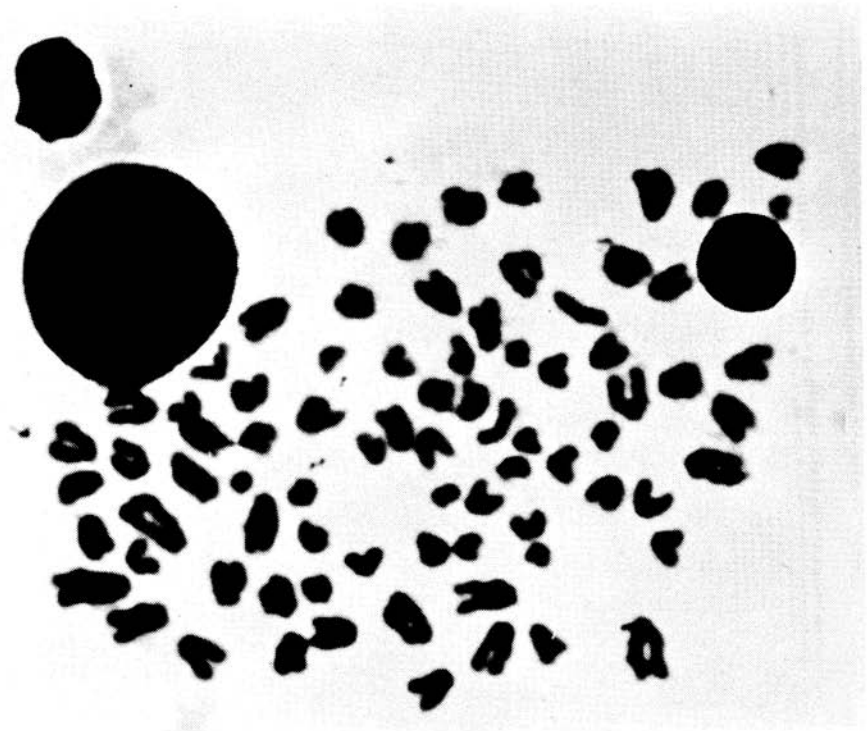

Fig. 1. Metaphase plate from male jackal. Note the many acrocentric chromosomes.

Meiotic Studies. No dividing cells at all were seen in the preparations. The cells appeared to be sustentacular (Sertoli) cells only.

*Discussion*

The present investigation is the first to report on the chromosomes of the saddle-backed (or any other) jackal. The findings in the male jackal support the statement of Wurster and Benirschke (1968) that the genus *Canis* possesses a stable diploid number of 78 with a uniform karyotype. The findings in the male saddle-backed jackal are the same as those of six others in the genus, with the same morphology, chromosome dip-

loid number and similar X-chromosome morphology. The Y of the saddle-backed jackal is slightly different, being submetacentric rather than acrocentric.

There is no ready explanation for the lack of dividing cells in the testis of the male jackal studied. The animal appeared normal in all respects. Unfortunately, no histological studies were performed on the testis. The animal may have been sexually abnormal, or the mitotic and meiotic processes of the testis may have been latent at that time.

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