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ENDOCRINE, BEHAVIORAL AND CLINICAL FINDINGS IN A PAIR OF BLACK RHINOCEROS

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In May of 1996 a 21-year-old wild-caught male black rhinoceros (*Diceros bicornis michaeli*) at the St. Louis Zoo presented for lethargy and inappetence. During the succeeding eight months, multiple abscesses appeared and were drained. The presenting symptoms persisted during this period, as did a chronically elevated white blood cell count. Although no single organism was cultured from all the abscesses, it was hypothesized that the animal may have undergone sepsis. Testosterone was checked in the early stages of the illness to determine practicality of semen collection and was found to be extremely low (in the female range). Testosterone subsequently dropped to undetectable levels. During this time keepers noted urination in a squatting position rather than the male spraying pattern. After several months of antibiotic therapy, the WBC dropped, there was no recurrence of the abscesses, and testosterone levels rose dramatically (Fig. 1).

Although lower progesterone levels were measured in the female rhinoceros than reported by other laboratories (Berkeley, 1997) we were able to map serum progesterone cycles in the female which corresponded to behavioral data and serum estradiol levels. Work is underway to determine whether differential antibody specificity explains the difference, or if our female is progestin deficient. We used a commercially available kit (DSL, Webster TX) and adapted the assay protocol to increase assay sensitivity (Bauman, 1998). Reagents from the same manufacturer were used to measure serum testosterone in the male, and estradiol 17b in the female.

The female was cycling regularly throughout the course of the male's illness. Breeding resumed in August of 1997, and continued on a regular basis at times corresponding to the female's hormonal cycles (estradiol peaks) through the end of March, 1998. At this time, elevated progesterone and estradiol, and suspension of breeding activity, indicated possible pregnancy. Hormone levels dropped after two months and endocrine cycles resumed followed by breeding activity. These data are suggestive of fetal resorption (Fig. 2). The pair produced calves in 1990 and 1991, and have since bred without successful term pregnancy.

Recent infertility in this pair seems to have been due to a combination of male and female factors.

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Fig. 1: Male Black Rhinoceros

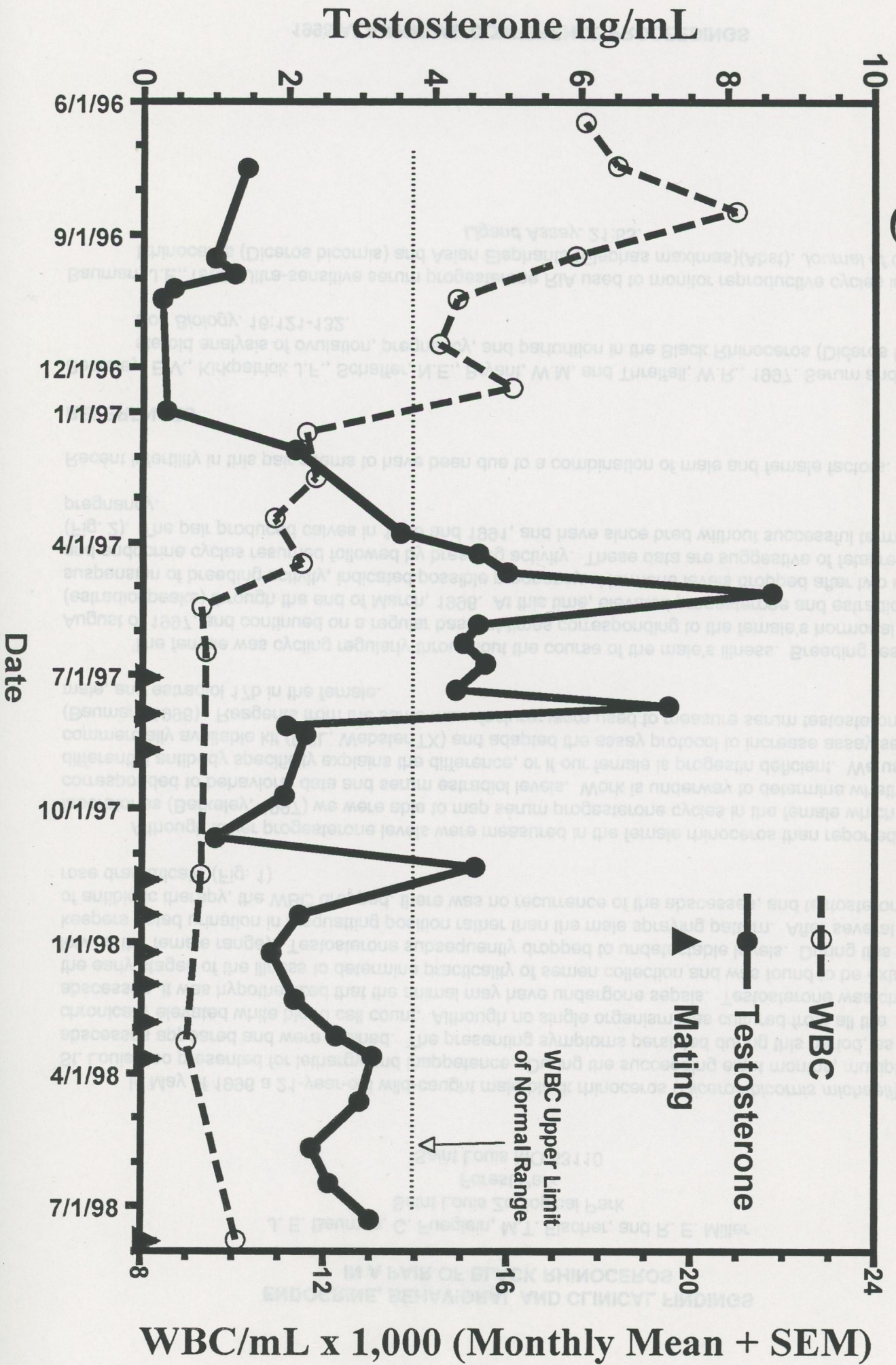


Fig. 2: Female Black Rhinoceros

