

ELECTROCARDIOGRAPHIC STUDY ON THE AFRICAN BLACK RHINOCEROS

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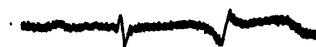
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SUMMARY

The electrocardiographic patterns from the limb leads of an African rhinoceros are reported. A characteristic feature was the low voltages for all complexes.

The electrocardiogram of the rhinoceros has not so far been reported in the English literature. Among the pachyderms the e.c.g. of the elephant has been

LIMB LEADS



Lead I



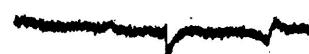
Lead II



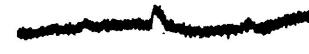
Lead III



AVR



AVL



AVF

Fig. 1. Electrocardiographic patterns of the rhinoceros.

recorded by various workers (Forbes, Cobb & Catell, 1921; White, Jenks & Benedict, 1938; and Jayasinghe, Fernando & Brito-Babapulle, 1963).

The subject of this investigation was a male African black rhinoceros 12 years of age. The electrocardiograph used was a direct-writing, heated-stylus Sanborn Visocardiette. Aligator clip electrodes were attached as high up as possible on the inner aspects of the front and hind limbs. The sensitivity of the instrument was increased so that 1 millivolt was equal to 1.5 cm. The animal was in the standing position and no drugs were used to restrain him. In order to approach the animal and fix the electrodes in position, the animal's attention was diverted by offering him a bundle of jak leaves to eat. The recordings obtained from the limb leads are reproduced in Fig. 1.

RESULTS AND DISCUSSION

It is seen that the rhythm is regular and the heart rate is an average of 31 beats per minute. The duration of systole (Q-T interval) is about 0.64 seconds (Table I). This is a rather prolonged time interval for cardiac contraction, much like that of the elephants in our earlier studies. However, it is a slow-beating heart. The T wave in most leads is diphasic as in the horse.

It is interesting to note that low voltages have been obtained for all the complexes. This probably supports the view of Forbes *et al.* (1921) that the great thickness of the skin results in low amplitudes in the e.c.g. tracings of thick-skinned animals.

TABLE I
ELECTROCARDIOGRAPHIC VALUES FOR RHINOCEROS
(Time intervals in seconds)

Lead	P Wave	P-R	QRS	Q-T	T Wave	Rate/min
I	0.12	0.40	0.08	0.68	0.16	30
II	0.10	0.38	0.08	0.64	0.12	31
III	0.12	0.36	0.08	0.64	0.16	30
AVR	0.08	0.40	0.08	0.64	0.14	33
AVL	0.08	0.32	0.08	0.64	0.12	33
AVF	0.08	0.40	0.08	—	0.12	30

REFERENCES

FORBES, A., COBB, S. & CATELL, MCK. (1921). *Am. J. Physiol.* **55**, 385.
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