

FIELD CRITERIA FOR AGEING IMMATURE BLACK

RHINOCEROSSES *Diceros bicornis* L.

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An important problem with which wildlife biologists are faced is the assignment of age to immature animals in the field. In species which have a short seasonal peak in breeding, this is often a relatively simple matter and criteria such as horn development can be used. In non-seasonal breeders the problem is more difficult.

For some years now the author has been making subjective assessments of age in a population of black rhinos in Hluhluwe Game Reserve, Zululand. However, recent studies in East Africa have highlighted the need for more objective criteria on which to base comparative studies of different populations of this species. Goddard (1967) uses three categories in the calculation of recruitment rates in Ngorongoro and Olduvai; adult, immature and calf. He provides no indication of ages of the last two categories. He simply defines an 'immature' animal as 'one that is less than full-sized which has left its mother' and a 'calf' as an 'immature animal which is still with its mother'.

Roth and Child (1968) grouped rhinos into three age classes depending on their weight (estimated). "Specimens under 600 lbs. were classed as calves and were probably not over one year old; older subadults weighing 600 - 1600 lbs. were classed as juveniles, these were smaller than adults and were probably between one and 3½ years old. Rhino heavier than 1600 lbs., i.e. older than 3½ years were not distinguishable and termed 'adult', although they were not necessarily all sexually mature."

Schenkel and Schenkel (1969) provide a diagram illustrating the size differences between baby, ¼-, 2/3- calf and ¾ subadult, but again no attempt is made to relate these to chronological age.

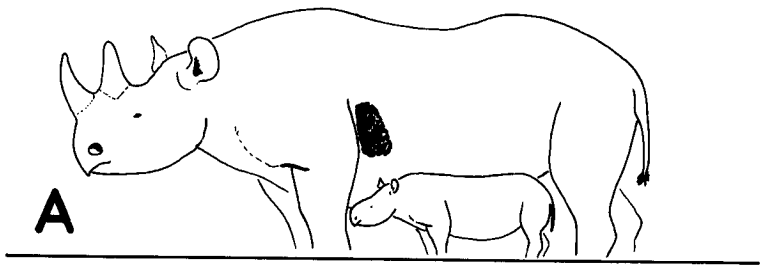
Direct studies on the ageing of black rhinoceroses in Zululand are limited to one by Anderson (1966) in which a series of skulls is analysed. This study will be brought up to date in due course in the light of further information which has accrued.

For the purposes of a current study of the population ecology of the black rhinoceros in Hluhluwe Game Reserve (Hitchins 1968) it was necessary to define the categories used. Table 1 presents the data obtained to date and relates five size categories illustrated in Figures 1 to 5 and Plates 1 to 5 to the estimated ages of 15 animals. The development of the characteristic skin lesions (Hitchins and Keep, in press) and of horns is also related to these size classes. Some of the animals used in this study were followed for up to 3 years and are still under observation.

TABLE I - SIZE CLASSES OF IMMATURE BLACK RHINOCEROSSES

SIZE CLASS	A		B		C		D		E				
	No.	Date	Est. Age	No.	Date	Est. Age	No.	Date	Est. Age	No.	Date	Est. Age	
DESCRIPTION: 1. Size in relation to adult. 2. Skin lesions.	68b	11.7.66	2 wks.										
	53c	Dec. 1963	1 mnth.	53c	Nov. 1964								
	31b	13.9.63	1 mnth.										
3. Horns	65b	July 1962	4 mnths										
	2b	13.2.66	5 mnths										
	15b	15.10.61	5 mnths										
	30c	21.12.64	4 mnths										
	28b	10.1.65	2 mnths										
	128b	30.8.68	1 mnth.	128 b	22.5.69	9 mnths							
	78b	13.1.66	1 mnth.	120b	3.1.67	1 yr.							
				12b	8.7.66	8 mnths							
				82b	Dec. '64	6 mnths							
				24b	1.1.64	9 mnths							
Evidence:													

NOTE: The numbers quoted in Table I and in the photo captions are those allocated to individual study animals.



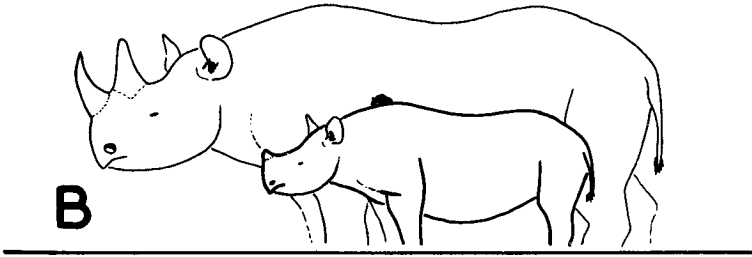
SIZE CLASS: A



FIG: I

Plate I:

Female adult and female calf (68b) - approximately 2 weeks old. July 1966.



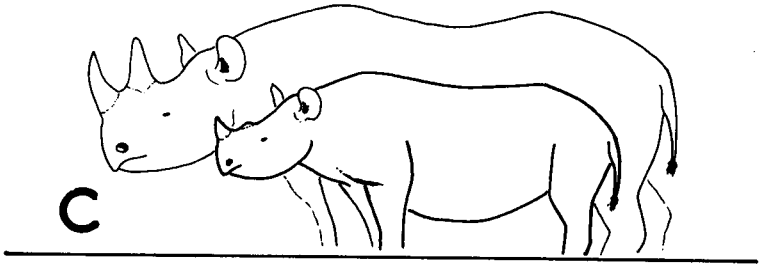
SIZE CLASS: B



FIG: 2

Plate 2:

Female adult and female calf (53c) - approximately 1 year old, November, 1964. The animal at the back is a previous calf whose age is estimated at 4 years.



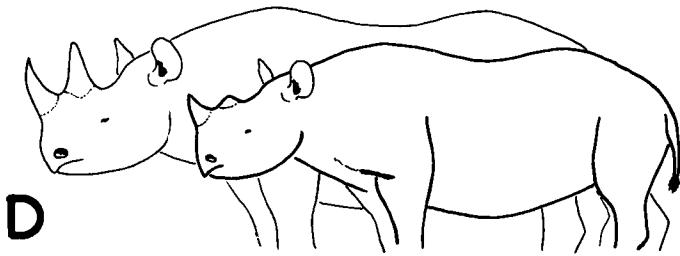
SIZE CLASS: C



FIG: 3

Plate 3:

Female adult and female calf (53c) - approximately 2 years old, January, 1966.



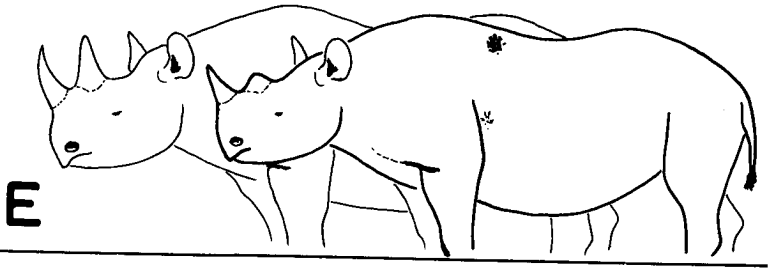
SIZE CLASS: D



FIG: 4

Plate 4:

Female adult and male calf (30c) - approximately 2½ years old, December 1966. Note skin lesions on chest of calf.



SIZE CLASS: E

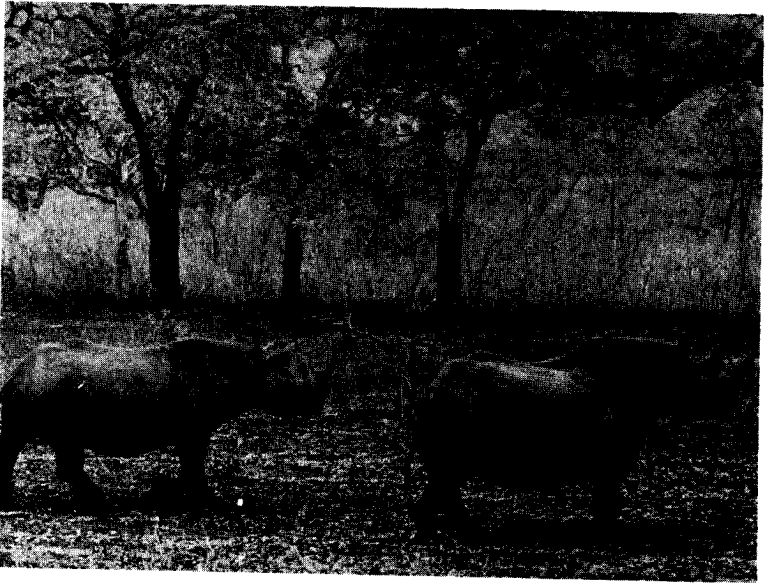


FIG: 5

Plate 5:

Female adult and male calf (31b) - approximately 3½ years old, December 1966. Note skin lesion high up on the shoulder of the calf.

It must of course be recognised that, because of variation in individual growth rates, the size classes described are not necessarily accurately referable to a particular age but merely to an age range. This problem is compounded by the fact that black rhinos do not have a well-defined breeding season. However, the categories have been found useful in the field and are here described in the hope that other workers will apply them, so that direct comparisons between studies made in different areas will become possible.

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