Body measurements of mountain reedbuck *Redunca fulvorufula fulvorufula* from Rolfontein Nature Reserve, South Africa

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Morphometric data of 92 adult mountain reedbuck are presented. Males were significantly heavier than females, and the tails of the males were significantly longer than those of the females.

Key words: *Redunca fulvorufula*, mountain reedbuck, body measurements, morphometrics.

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Introduction

Morphometric data can be useful as a measure of sex-specific characteristics (Balmford & Blakeman 1991), as a means to identify inter-specific hybrids (Fabricius *et al.* 1989), for inter-specific comparisons (Skinner & Smithers 1990), and for intra-specific population comparisons (Schmidt 1984).

As yet, no published data are available on the morphometrics of mountain reedbuck *Redunca fulvorufula* (Afzelius, 1815) (Smithers 1983; Skinner & Smithers 1990) although, in his dissertation, Irby (1976) reported on some body measurements of *R. f. fulvorufula* and *R. f. chanleri*. Here we report on the body measurements of adult mountain reedbuck *R. f. fulvorufula* obtained during a culling operation.

Materials and methods

During March 1992, 442 mountain reedbuck were culled at Rolfontein Nature Reserve (30°03′S, 24°45′E), near Petrusville in the Cape Province, South Africa. Body measurements were taken of 92 adult mountain reedbuck. The mass of each animal was recorded to the nearest 0,1 kg. Adult individuals were differentiated from juveniles and sub-adults on the basis of their body mass, and/or tooth eruption and wear (Norton & Fairall 1991).

The following five body measurements (mm) were taken using the methods described by Ansell (1965):

- total length — the body length of the animal, taken from the tip of the nose to the end of the vertebrae of the tail. Ansell's (1965) 'over the curves' rather than 'between pegs' method of measuring total body length was used;
- tail length — measured from the base of the tail to the end of the vertebrae of the tail;
- head and body length — total length minus the length of the tail;
- hind foot length —measured from the heel (hock) to the end of the hoof (*cum ungue*);
- ear length — measured from the notch of the ear to the ear tip.

The Students *t*-test was used to compare the body measurements of male and female mountain reedbuck (Zar 1984).

Results and Discussion

Adult male ($n = 36$) mountain reedbuck were found to be significantly heavier ($t = 5,2$; $N = 92$; $P < 0,01$) than adult females ($n = 56$) (Table 1). Body measurements were similar for the sexes, except for their tails, which were significantly longer in the males ($t = 2,9$; $N = 92$; $P < 0,01$). The reason for the longer tail in the males is uncertain but may possibly be related to sexual advertisement in this territorial species. Furthermore, mountain reedbuck have the habit of running with a rocking horse motion, with their tails upright, when they are disturbed (Skinner & Smithers

Table 1
Average body masses (kg ± SD) and measurements (mm ± SD), with ranges, of 36 adult male and 56 adult female mountain reedbuck, and the combined data for these 92 animals collected at Rolfontein Nature Reserve

	Males	Females	*t*-test	Combined
Mass	30,7 ± 3,3 (22-37)	27,2 ± 2,9 (22-35)	$t = 5,2$ (S)	28,5 ± 3,2
Total length	1321 ± 45 (1190-1429)	1317 ± 54 (1210-1411)	$t = 0,4$ (NS)	1319 ± 51
Tail length	167 ± 15 (140-202)	158 ± 13 (126-179)	$t = 2,9$ (S)	162 ± 14
Head and body length	1148 ± 50 (1005-1230)	1153 ± 47 (1040-1240)	$t = 0,2$ (NS)	1151 ± 47
Hind foot length	356 ± 12 (340-383)	353 ± 13 (309-378)	$t = 1,3$ (NS)	354 ± 13
Ear length	136 ± 6 (123-148)	136 ± 6(121-147)	$t = 0,1$ (NS)	136 ± 6

1990), and this may function as a warning signal for conspecifics. Other than the longer tail and the larger and heavier body, the other sexually dimorphic feature which distinguishes the sexes is the pair of short, heavily ridged horns (Skinner & Smithers 1990).

The body masses of the mountain reedbuck determined during this study are less than that of adult males (31,0 ± 2,6 kg, $n = 9$) and adult females (29,1 ± 3,1 kg, $n = 10$) collected during the same time of year at the Mountain Zebra National Park in the Cape Province (Skinner 1980). The lower body mass of the Rolfontein Nature Reserve animals may be attributed to a fire which destroyed more than 50% of the grazing on the reserve six weeks prior to the cull. A lower body mass and low kidney fat index (also determined for animals during this cull, unpubl. data) may be indicative of the nutritional stresses imposed on these animals after the fire.

The body length measurements obtained from mountain reedbuck during the present

Table 2
Average body length and hindfoot measurements (with standard deviations) of mountain reedbuck collected from Rolfontein Nature Reserve, Cape Province (this study, R. f. fulvorufula*), Loskop Dam Nature Reserve, Transvaal (Irby 1976,* R. f. fulvorufula*), and Cole Ranch, Kenya (Irby 1976,* R.f. chanleri*)*

Locality	*n*	Body length	Hind foot
Rolfontein (this study)	92	1151 ± 47	354 ± 13
Loskop Dam (adult females)	24	1138 ± 47	355 ± 12
Loskop Dam (adult males)	16	1147 ± 44	358 ± 8
Cole Ranch (adult females)	10	1138 ± 49	343 ± 12
Cole Ranch (adult males)	2	1150 ± 113	343 ± 18

cull are similar to those obtained from animals collected at Loskop Dam Nature Reserve, 150 km east of Pretoria in the Transvaal, South Africa (Irby 1976), and from specimens collected from Cole Ranch, in the Rift Valley near Gilgil, Kenya (Table 2) (Irby 1976). The hind foot measurements determined in the present study are also similar to those of *R. f. fulvorufula* specimens collected at Loskop Dam Nature Reserve, but slightly longer than those of *R. f. chanleri* specimens collected at Cole Ranch (Table 2) (Irby 1976.)

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