

Note on the smaller mammals of the Hester Malan Nature Reserve, Springbok, Namaqualand

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A survey of the smaller mammals of the Hester Malan Nature Reserve resulted in a checklist as well as information on the habitat in which the mammals occurred. Of the 38 species listed, 31 were collected or seen in the Reserve and seven on the neighbouring farms and surrounding district.

S. Afr. J. Zool. 14: 85-89 (1979)

'n Opname is gemaak van die kleiner soogdlere wat in die Hester Malan Natuurresewaat aangetref word en het gelei tot die saamstel van 'n spesielys. Inligting oor die habitat van die soogdiere is ook verkry. Van die 38 spesies in die lys genoteer, word 'n totaal van 31 in die Resewaat aangetref. Hierbenewens is 'n verdere sewe spesies op naburige plase en omliggende distrik waargeneem.

S.-Afr. Tydskr. Dierk. 14: 85-89 (1979)

Comparatively little information is available on the small mammals of Namaqualand, the most arid region of the Cape Province. The most comprehensive survey so far undertaken was that of Shortridge (1942) at the end of 1936 and beginning of 1937. In addition, Davis (1974) gives the distribution of some insectivores and rodents of the region. The present paper lists the findings of a survey conducted in the Hester Malan Nature Reserve, with the aim of drawing up a checklist of the small mammals found there.

Physiography

The Hester Malan Nature Reserve is located some 15 km east of Springbok (29° 34' S, 17° 57' E). It lies in the Namaqualand Broken veld and covers an area of about 4600 ha (Acocks, 1975; van der Westhuizen, *pers. comm.*). The physiography consists of typical dome-shaped and broken granite kopjes with a wide valley inbetween. The sandy plain in the south of the Reserve lies at an altitude ranging from 880 m to 930 m. This contrasts sharply with the largest part of the Reserve which consists of high kopjes which gradually change into a plateau to the north at an altitude of 1070-1100 m (Rösch 1977). Carolusberg, the highest point of the kopjes in the Reserve, is 1346 m above sea level.

The very shallow Namaqualand soils are a light reddish brown sand to light sandy loam and are covered in some parts by a thin layer of white quartz pebbles or gravel (van der Merwe, 1940).

The Reserve is situated in the intermediate area between the winter and summer rainfall regions (Rösch, 1977). The climate is hot and dry, characterized by sparse and erratic rainfall and great daily and monthly temperature fluctuations. For a detailed description of the physiography of the Reserve, see Rösch (1977).

Vegetation

The most striking features of the Namaqualand vegetation are the seasonal variations in the ephemeral plant population densities and composition. These ephemerals, such as *Dimorphotheca polyptera*, *Osteospermum amplexus*, *O. hyocerooides* and *Arctotis fastuosa* form an important part of the vegetation in the Reserve in the

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winter season and their leaves, flowers and seeds are an important food source for the resident mammals. On the southern plain, the sparse ground cover is dominated by succulent mesembrenthemum and *Zygophyllum retrofractum* shrubs. On the kopje plateaux the ground cover is more dense and the vegetation consists of *Ruschia robusta*, *Leipoldtia pauciflora*, *Eriocephalus ericoides*, *Galenia africana* and *Osteospermum sinautum*. The vegetation on the kopje slopes is dominated by taller shrubs such as *Diospyros ramulosa*, *Rhus undulata* and *Didelta spinosa* with perennial grasses being more abundant here than on the plain.

Methods

Insectivores and rodents were collected by means of masonite tunnel traps, for details of construction see Meester (1970), medium 'Havahart' (Ossining, New York) traps and snap traps (Victors and Museum specials). All traps were baited with a fresh mixture of peanut butter, oatmeal, golden syrup and sunflower oil. Hares and dassies were shot with .22 calibre rifle. Study skins were made of all the specimens collected and deposited in the Transvaal Museum and the Mammal Research Institute. In addition, sight records and data kindly supplied by the Nature Conservator, were used where specimens of a particular species were not collected.

Identification was facilitated by consulting the Smithsonian Institution's *Mammals of Africa* – (Meester & Setzer, 1971) as well as Smithers' *Mammals of Botswana* (1971) and Rautenbach and Nel (1975).

Results

The following mammals were collected or recorded in the Reserve and surrounding district during the period April 1976 to July 1977. The localities of species recorded outside the Reserve are given.

ORDER INSECTIVORA

FAMILY MACROSCOLIDIDAE

Macroscelides proboscideus

Short-eared elephant shrew/Kortoor-klaasneus.

Some specimens were trapped on hard sandy ground with sparse shrub cover on the southern plain in the Reserve. They were also caught near low rocky outcrops where their indistinct runways could be seen in the leaf debris of shrubs and occasionally in *Otomys unisulcatus* runways. Shortridge (1942) also found them sheltering in "karoo Otomyinae warrens". They also use gerbil or other rodent burrows and rock crevices for cover.

Elephantulus eduardi

Cape Elephant shrew/Kaapse-klaasneus.

Trapped on the slopes of rocky kopjes where they tend to keep to the cover of overhanging shrubs and rocks. They can often be seen dashing from rock to rock during the day. Not trapped as frequently as *M. proboscideus*.

Elephantulus rupestris

Rock elephant shrew/Klip-klaasneus.

Found in a similar habitat as *E. eduardi* and habits appear to be shared as well. One specimen was trapped at the same trap site as *M. proboscideus* near the base of a rocky outcrop.

FAMILY SORICIDAE

Crocidura cyanea

Reddish-grey musk shrew/Rooigrys skeerbek.

One specimen was trapped in a rock crevice while two were collected in the Conservator's house.

ORDER CHIROPTERA

FAMILY RHINOLOPHIDAE

Rhinolophus clivosus

Geoffroy's horseshoe bat/Geoffroyse vlermuis.

Specimens were collected from a temporary roosting site in the Conservator's carport. No natural roosting places were found.

ORDER PRIMATES

FAMILY CERCOPITHECIDAE

Papio ursinus

Chacma baboon/Kaapse bobbejaan.

Ocasional seen on the highest kopjes in the Reserve.

They are non-resident and very shy. Regarded as vermin by surrounding sheep farmers. Recorded feeding on fruit of *Diospyros ramulosa*.

ORDER CARNIVORA

FAMILY PROTELIDAE

Proteles cristatus

Aardwolf/Maanhaarjakkals.

This species is rarely seen because of its nocturnal habits. Their middens were located in an area of about 100 ha in the Reserve. Their meat is regarded as a delicacy by people in surrounding areas which probably limits numbers outside the Reserve.

FAMILY FELIDAE

Felis caracal

Caracal/Rooikat.

A specimen had been drowned in a reservoir behind the Conservator's house and two animals were seen during a game count. Not abundant. Sometimes killed by neighbouring farmers.

Felis lybica

Cape wild cat/Vaalboskat.

Frequently seen during the day on the kopje slopes where they keep to dense cover among rocks and shrubs.

FAMILY CANIDAE

Otocyon megalotis

Bat-eared fox/Bakoorjakkals.

Widespread in the Reserve. A group of eight animals inhabited the southern sandy plain and surrounding kopjes. They had an extensive system of burrows on the plain and could frequently be seen foraging during the day, particularly during overcast weather.

Vulpus chama

Cape fox (Silver jackal)/Silwerjakkals.

Very rare. One specimen was killed by a "Coyote getter" set for feral dogs (*Canis familiaris*). There is a record of one other sighting by the Conservator.

Canis mesomelas

Black-backed jackal/Rooijakkals.

This species is regarded as vermin in the surrounding

sheep-farming area and is relentlessly persecuted. They are therefore rare in the vicinity of the Reserve, although specimens have recently been sighted on the neighbouring farm Goechab (van der Westhuizen, *pers. comm.*).

FAMILY MUSTELIDAE

Mellivora capensis

Honey badger/Ratel.

Two specimens were seen in the Reserve by P. Norten (*pers. comm.*).

Ictonyx striatus

(Cape) Striped polecat/Kaapse stinkmuishond.

Their burrows are common on the southern plain. They are frequently seen on the roads at night and appear to be the most common roadkill species in the district. A specimen was trapped in a "Havahart" trap set in an *Otomys unisulcatus* runway.

FAMILY VIVERRIDAE

Genetta genetta cf. *felina*

Small-spotted genet/Kleinkolmuskejaatkat.

A specimen was killed on the road about 2,0 km east of Springbok. Probably not abundant in this area.

Suricata suricatta

Suricate/Graaitjie-meerkat of Stokstertmeerkat.

This species is seen occasionally in the northern part of the Reserve. Occurs in large groups of up to 15 individuals on the flat sandy areas with dense shrub cover. Also makes use of rocky outcrops and rock crevices.

Cynictis penicillata

Yellow mongoose/Geelmeerkat.

Uncommon in the Reserve. Those that are seen probably come in from Bushmanland in the east. A specimen was collected which had been killed by a "Coyote getter".

Herpestes pulverulentus

Cape grey mongoose/Kleingrysmuishond.

Fairly numerous, more so than the previous two species. Usually seen singly along ephemeral water courses and shrub-covered kopje slopes. One specimen was trapped in a "Havahart" rodent trap. They frequently removed captured rodents and elephant shrews from traps.

ORDER HYRACOIDEA

FAMILY PROCAVIDAE

Procapra capensis

Rock dassie/Klipdassie.

Very common and widespread on the kopjes in the Reserve and surrounding areas. Most abundant mammal (apart from some rodents) and possibly forms the largest herbivore biomass in the Reserve. During the dry season they have a considerable impact on the vegetation on the kopjes and near their bases. Their only natural predators in the Reserve are *Felis caracal*, *F. lybica*, black eagle (*Aquila verreauxi*), jackal buzzards (*Buteo rufofuscus*) and Cape eagle owls (*Bubo capensis*). Population may have to be artificially controlled in the future.

ORDER ARTIODACTYLA

FAMILY BOVIDAE

Oreotragus oreotragus

Klipspringer/Klipbok.

Abundant on the kopjes where their middens are commonly seen. Probably less abundant outside the Reserve as they are still shot for their meat.

Sylvicapra grimmia

Common duiker/Gewone (Grys) Duiker.

In this area the species has a brown colour. They are very shy but are frequently seen during twilight hours on the shrub-covered plateaux and plains. They lie up in dense cover during the day.

Raphicerus campestris

Steenbok.

Not found in the Reserve but have been sighted on the neighbouring farms and occur commonly in Bushmanland.

ORDER LAGOMORPHA

FAMILY LEPORIDAE

Pronolagus rupestris

Red rock hare/Rooi kliphaas.

This species is frequently seen during twilight hours, along kopje slopes, and when they descend to more open ground at the kopje bases to feed. They establish characteristic middens which are a common sight on the kopjes. Probably the most abundant of the hares in the Reserve.

Lepus capensis

Cape hare/Vlakhaas of Rooipoohaas.

Individuals were often flushed during the day from under low shrubs on the plateaux and plains. Fairly widespread in the Reserve.

Lepus saxatilis

Scrub hare/Kolhaas of Ribbokhaas.

A specimen was collected by T. Robinson at the edge of an ephemeral river course and kopje base with dense shrub cover, on the neighbouring farm Goechab.

ORDER RODENTIA

FAMILY BATHYERGIDAE

Cryptomys cf. *hottentotus*

Hottentot mole rat/Hottentot tandmol.

A juvenile specimen was collected in Springbok after an exceptionally heavy rainfall. Mounds were seen on firm flat and rather stony ground.

FAMILY HYSTRICIDAE

Hystrix africaeaustralis

Porcupine/Ystervark

This species is fairly common judging by the quills and faeces found. Often seen at night in the vicinity of the Conservator's house where they were found to be feeding on cultivated watermelons and vegetables.

FAMILY MUSCADINIDAE

Graphiurus ocularis

Rock dormouse/Heuningmuis (Shortridge, 1942). Gembokmuis.

Two specimens were collected by hand in a storeroom of animal feed, 6,0 km west of Springbok. Shortridge (1942) trapped them in an old stone wall and rock crevices. Probably more abundant than is realized because of their

nocturnal and secretive habits. When caught they are usually extremely aggressive.

FAMILY PETROMYIDAE

Petromys typicus

Dassie rat/Kliprot of Dassierot

Trapped on rocky kopjes in a similar habitat to that in which *Procapra capensis* occurs, among large boulders and deep crevices. Caught at the same trap site as *Aethomys namaquensis* and *Mus musculus*. This species constructs nests similar to those of *A. namaquensis* although thicker twigs are used and they characteristically collect the dried leaves of *Aloe dichotoma*. Small patches of white crystallized urine, as well as characteristic elongated faecal pellets, are signs of their presence. A very difficult animal to skin as the skin is exceptionally soft and the tail breaks off very easily. Shortridge (1942) suggests that the tail may be becoming redundant in an evolutionary sense. Approximately 10% of the specimens he collected had no tails.

FAMILIES CRICETIDAE AND MURIDAE

SUBFAMILY OTOMYINAE

Parotomys brantsi

Brants' karoo rat/Brantse karoo-rot of Fluitrot.

This species is not widespread in the Reserve and is found mainly in the eastern part. They live in colonies and establish an intricate burrow system in firm sandy soil with sparse shrub cover. The area immediately surrounding the burrows is denuded of low vegetation. These animals appear to be trap shy and only one juvenile was trapped, using lucerne as bait. Large population increases sometimes occur in Bushmanland where it is a very common species.

Otomys unisulcatus

Bush karoo rat/Vaal karroo-rot.

Trapped in sandy areas with a low dense shrub cover of *Zygophyllum* and mesembrenthemum species. Also common along ephemeral river courses. Their nest, a large characteristic structure up to 1,0 m in diameter, at the base of shrubs such as *Zygophyllum retrofractum* or under large rocks, are constructed of twigs and flowering ephemerals, sometimes enclosing the shrub completely. Passages are made within the dense shrubs. A small nest of finer material is constructed at the centre of the large structure in a shallow burrow or depression. They differ from *Aethomys namaquensis* nests when they occur under rocks in that they contain more ephemerals and always contain some green material, a sign that the nest is occupied. For collecting them traps were set in the runways leading from the nests.

SUBFAMILY MURINAE

Rhabdomys pumilio

Four-triped mouse/Streepmuis.

Specimens of this species were trapped in the runways of *Otomys unisulcatus*, as the two species occur in similar habitat, with *Rhabdomys* being less abundant.

Mus musculus

House mouse/Huismuis.

Three specimens were trapped under large rocks on rocky

outcrops at the same trap site at which *Aethomys namaquensis* were caught, near the ruins of an old farming settlement – abandoned more than 12 years ago. Shortridge (1942) found that they were plentiful in Namaqualand at the time of his survey.

Mus minutoides

Pygmy mouse/Dwergmuis

Only one specimen was trapped with the aid of a tunnel trap. The traps were probably not sensitive enough for this species, which may therefore be more common than suggested by trapping results. This specimen occurred on sandy soil with *Ruschia robusta* cover, at the same trap site as *Macroscelides proboscideus* and *Gerbillurus paeba*. Another specimen was collected in the Conservator's house.

Aethomys namaquensis

Namaqua rock rat/Namakwalandse klipmuis.

Trapped on kopjes with traps set under large rocks. Also trapped in sandy areas in the vicinity of rocky outcrops on *Macroscelides proboscideus* runways. Their large nests, constructed mostly of twigs and grasses, can be seen in rock crevices and under rocks. They seem to be the most abundant rodent in the Reserve.

SUBFAMILY GERBILLINAE

Desmodillus auricularis

Namaqua gerbil/Namakwalandse nagmuis.

One specimen was trapped on the southern plain in an open area with sparse vegetation and hard sand. Another animal was caught 2,0 km east of Springbok on hard sand with a low cover of *Cheirodopsis dentata*.

Gerbillurus paeba

Pygmy gerbil/Klein nagmuis.

Trapped on open sandy areas with a sparse cover of *Ruschia robusta*. Also trapped at the same trap site as *Macroscelides proboscideus* under the shrubs.

SUBFAMILY DENDROMURINAE

Malacothrix typica

Large-eared mouse/Grootoormuis.

No specimens were collected in the Reserve but two individuals were caught by hand with the aid of a spotlight on a tarred road 0,5 km east of Springbok. The sparse vegetation cover on the road verge consisted mostly of short ephemerals.

Large ungulate species reintroduced into the Reserve are Hartmann's zebra (*Equus sebra hartmannae*) gemsbok (*Oryx gazella*) and springbok (*Antidorcas marsupialis*).

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