

THE MAMMALS OCCURRING IN THE BREDASDORP AND SWELLENDAM DISTRICTS, C.P., SINCE EUROPEAN SETTLEMENT

Including a list comparing the types in these districts with those of the Cradock and Uitenhage Districts, C.P.

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Following the list and discussion of the mammals in the Cradock and Uitenhage districts, C.P., presented by C. J. Skead (Koedoe 1:1957), I was requested by the Director, National Parks Board of Trustees, to supply similar information for the Swellendam district, related to the proposed removal of the Bontebok National Park to an area adjoining the town of Swellendam. Owing to the proximity of the two districts, and bearing in mind the present location of the Bontebok Reserve, it was decided that a list of mammals in the Bredasdorp district be included and, following the wishes of the National Parks Board of Trustees, the list supplied herewith sets out, side by side, the mammals of the Cradock, Uitenhage, Bredasdorp and Swellendam districts. This facilitates, at a glance, a comparison of the indigenous mammals of the Mountain Zebra National Park, the Addo Elephant National Park, the present Bontebok National Park and the proposed Bontebok National Park.

In comparing the fauna of these districts side by side, it should be borne in mind that features of their topography differ appreciably and must influence the animal life therein. It is also of importance to remember that these conditions have not been static over the years and changes, particularly in the flora, will have had their repercussions on the ecology of the animals. With the coming of the European and his intensive methods of eradicating game and supplanting the normal vegetation, it is not surprising that many creatures have disappeared from areas in which they once freely roamed.

The list includes mammals introduced directly, or indirectly, by man and also shows where types, once extinct, are being re-introduced into reserves and private estates — a welcome approach by the present-day farmer compensating for the ravages wrought by his ancestors.

Following the procedure used by Skead in his account, information concerning the occurrence and distribution of the following types is included: bakoorjakkals, silver fox, black-backed jackal, hunting dog, maanhaarjakkals, brown hyaena, spotted hyaena, grey cat, black-footed cat, serval, leopard, lion, cheetah, elephant, mountain zebra, bushpig, warthog, steenbok, grysbok, oribi, vaal reedbuck, mountain reedbuck, springbok, gemsbok, bontebok, blesbok, red hartebeest, black wildebeest, blue wildebeest, kudu, eland and buffalo.

The list, herewith, follows the classification of Ellerman *et al* (1953) and generally the nomenclature used is as in that work, except where local and more accurate knowledge conflicts with this. When sub-species are given it is an indication of a reliable taxonomic separation, but in the event of lack of evidence for separation the species only is listed.

It will be noticed that a newly introduced type, the fallow deer, *Dama dama*: Frisch, has been added to the list prepared by Skead for the Cradock region and the queried re-introduction of blesbok to that district has been confirmed by recent survey.

From the list it is seen that the relative variations in distinct types is as follows:

Table 1.

	Cradock	Uitenhage	Bredasdorp	Swellendam
Known to have occurred	85	98	78	80
Possibly occurred	3	4	14	14
Extinct	15	14	16	19
Extinct, but re-introduced	2	1	1	—
Introduced	3	2	2	2

It should be noted that whilst there are certain extinct types common to all the districts, there are also some variations between the districts. The totals "known to have occurred" include types occurring at the present time, the extinct forms and those introduced or re-introduced. The high proportion of "possibles" for the Bredasdorp and Swellendam districts is owing to the lack of firm evidence in historical works and the necessity, therefore, of basing opinions on the expected occurrence of types related to their known

distribution in contiguous areas. It is pointed out that a considerably greater mass of bibliography was consulted than is quoted at the end, but in many cases the authors either did not pass through the area under consideration, or, if they did, failed to see the smaller forms amongst which the greatest doubt exists. The area is in need of a thorough survey, especially for the small mammals, and until this has been carried out the uncertainties will prevail.
 Key to the symbols used in the list:

- X Occurring at the present time.
- Has never occurred.
- E Extinct in a feral state.
- EI Extinct, but re-introduced.
- I Introduced.
- ? Occurrence possible.
- E(?) Probably extinct.

LIST OF MAMMALS OF THE CRADOCK, UITENHAGE, BREDASDORP AND SWELLENDAM DISTRICTS.

	Cradock	Uitenhage	Bredasdorp	Swellendam
ORDER — INSECTIVORA				
Family — <i>Macroscelididae</i>				
<i>Elephantulus intufi vandami</i> : Roberts Bushveld Elephant Shrew/Bosveld Skeerbekmuis	X	—	—	—
<i>Elephantulus rupestris karoensis</i> : Roberts Rock Elephant Shrew/Klipklaas- neus	X	X	—	—
<i>Macroscelides proboscideus hewitii</i> : Roberts Short-eared Elephant Shrew/Kort- oorklaasneus	X	—	—	—
<i>Macroscelides p. proboscideus</i> : (Shaw) Short-eared Elephant Shrew/Kort- oorklaasneus	—	—	?	?
Family — <i>Erinaceidae</i>				
<i>Erinaceus f. frontalis</i> : A. Smith Cape Hedgehog/Krimpvarkie	X	X	—	—

	Cradock	Uitenhage	Bredasdorp	Swellendam
Family — <i>Soricidae</i>				
<i>Suncus gracilis</i> : Blainville	—	X	—	—
Dwarf Shrew/Dwergskeerbekmuis				
<i>Myosorex varius varius</i> : Smuts	X	X	X	X
Forest Shrew/Bosskeerbekmuis				
<i>Crocidura c. cyanea</i> : Duvernoy	X	X	X	X
Reddish-grey Musk Shrew/Roogrysskeerbekmuis				
<i>Crocidura pondoensis</i> : Roberts	—	X	—	—
Pondo Musk Shrew/Pondolandse skeerbekmuis				
<i>Crocidura flavescens</i> : I. Geoffroy	?	X	X	X
Giant Musk Shrew/Rooskeerbekmuis				
Family — <i>Chrysochloridae</i>				
<i>Amblysomus hottentotus</i> : A. Smith ...	X	X	X	X
Hotientot Golden Mole/Hotnotkruipmol				
<i>Chrysochloris asiatica</i> : Linnaeus	—	—	X	X
Cape Golden Mole/Kaapse Kruipmol				
ORDER — <i>CHIROPTERA</i>				
Sub-order — <i>Megachiroptera</i>				
Family — <i>Pteropodidae</i>				
Sub-family — <i>Pteropodinae</i>				
<i>Eidolon helvum</i> : Kerr	X	X	X	X
Yellow Fruit Bat/Geelvrugtevlermuis				
<i>Rousettus aegypticus leachi</i> : A. Smith	—	X	X	X
Cape Fruit Bat/Kaapse Vrugtevlermuis				
<i>Epomophorus wahlbergi</i> : Sundevall ...	—	X	—	—
Wahlberg's Fruit Bat/Witkolvlermuis				
Sub-order — <i>Microchiroptera</i>				
Family — <i>Emballonuridae</i>				
<i>Taphocus mauritanus</i> : E. Geoffroy ...	X	X	X	X
South African Tomb Bat/Witlyflermuis				

	Cradock	Uitenhage	Bredasdorp	Swellendam
Family — <i>Nycteridae</i>				
<i>Nycteris thebaica capensis</i> : A. Smith Cape Slit-faced Bat/Langoorvlermuis	—	X	X	X
Family — <i>Rhinolophidae</i>				
<i>Rhinolophus clivosus zuluensis</i> :				
Anderson Geoffroy's Horseshoe Bat/ Geoffroy se blaarnevlermuis	?	X	X	X
<i>Rhinolophus capensis</i> : Licht. Cape Horseshoe Bat/Kaape Hoefystervlermuis	—	X	X	X
Family — <i>Molossidae</i>				
<i>Platymops petrophilus</i> : Roberts Flat-headed Free-tailed Bat/ Platkop losstertvlermuis	—	—	X	X
<i>Tadarida aegyptica</i> : E. Geoffroy Egyptian Free-tailed Bat/Eg'ptiese losstertvlermuis	X	X	X	X
<i>Tadarida bocagii</i> : Seabra Bocage's Free-tailed Bat/Bocage se losstertvlermuis	X	X	—	—
Family — <i>Vespertilionidae</i>				
<i>Myotis tricolor</i> : Temminck Cape Hairy Bat/Kaapse langhaarvlermuis	—	X	X	X
<i>Myotis lesueuri</i> : Roberts Lesueur's Wing-gland Bat/Lesueur se vlerkkliervlermuis	—	—	X	?
<i>Eptesicus c. capensis</i> : A. Smith Cape Serotine Bat/Kaapse Dakvlermuis	X	X	—	—
<i>Eptesicus hottentotus</i> : A. Smith Long-tailed House Bat/Langstertdakovlermuis	—	X	X	X
<i>Eptesicus melckorum</i> : Roberts Melck's House Bat/Melck se Dakvlermuis	—	—	X	X
<i>Eptesicus notius</i> : G. Allen Honeyskin Bat/Growwevelvlermuis	—	—	?	?

	Cradock	Uitenhage	Bredasdorp	Swellendam
<i>Pipistrellus kuhli</i> : Kuhl Kuhl's Pipistrelle/Kuhl se vlermuis	—	X	—	—
<i>Miniopterus schreibersi natalensis</i> : Kuhl Schreiber's Bat/Schreiber se vlermuis	X	X	X	X
<i>Kerivoula l. lanosa</i> : A. Smith Lesser Woolly Bat/Kleiner Wolhaarvlermuis	—	X	?	?
ORDER — PRIMATES				
Sub-order — Anthropoidea				
Family — Cercopithecidae				
Sub-family — Cercopithecinae				
<i>Cercopithecus aethiops pygerythrus</i> : Linnaeus Vervet Monkey/Blouaap	X	X	?	X
<i>Papio ursinus</i> : Kerr Chacma Baboon/Bobbejaan	X	X	X	X
ORDER — CARNIVORA				
Family — Canidae				
Sub-family — Otocyninae				
<i>Otocyon m. megalotes</i> : Desmarest Delande's Fox/Bakoorjakkals	X	X	X	X
<i>Vulpes chama</i> : A. Smith Silver Fox/Draaijakkals	X	X	X	X
<i>Canis mesomelas</i> : Schreber Black-backed Jackal/Rooijakkals	X	X	X	X
<i>Lycaon p. pictus</i> : Temminck Hunting Dog/Wildehond	E	E	E	E
Family — Mustelidae				
Sub-family — Mustelinae				
<i>Ictonyx s. striatus</i> : Perry Striped Polecat/Stinkmuishond	X	X	X	X
<i>Poecilogale albinucha</i> : Gray White-naped Weasel/Slangmuishond	X	X	—	—
Sub-family — Mellivorinae				
<i>Mellivora c. capensis</i> : Schreber Honey Badger/Ratel	X	X	X	X

	Cradock	Uitenhage	Bredasdorp	Swellendam
Sub-family — <i>Lutrinae</i>				
<i>Lutra m. maculicollis</i> : Licht.	X	X	X	?
Spotted-necked Otter/Bruinotter				
<i>Aonyx c. capensis</i> : Schinz	X	X	X	X
Clawless Otter/Groototter				
Family — <i>Viverridae</i>				
Sub-family — <i>Viverrinae</i>				
<i>Genetta genetta felina</i> : Thun.	X	X	X	X
Small Spotted Genet/Kleinkol- muskejaatkat				
<i>Genetta t. tigrina</i> : Schreber	—	X	X	X
Large Spotted Genet/Grootkol- muskejaatkat				
Sub-family — <i>Herpestinae</i>				
<i>Herpestes ichneuman cafer</i> : Gmelin	—	?	?	?
Ichneuman/Grootgrysmuishond				
<i>Herpestes p. pulverulentus</i> : Wagn. ...	X	X	X	X
Cape Grey Mongoose/Kleingrysmuishond				
<i>Atilax p. paludinosus</i> : Cuv.	X	X	X	X
Water Mongoose/Kommetjiegat- muishond				
<i>Ichneumia albicauda grandis</i> :				
Thomas	X	X	—	—
White-tailed Mongoose/Witstert- meerkat				
<i>Cynictis penicillata</i> : G. Cuvier	X	X	X	X
Red Meerkat/Rooimeerkat				
<i>Suricata suricata</i> : G. Cuvier	X	X	?	?
Grey Meerkat/Stokstertmeerkat				
Family — <i>Protelidae</i>				
<i>Proteles c. cristatus</i> : Sparrman	X	X	X	X
Maanhaarjakkals				
Family — <i>Hyaenidae</i>				
<i>Hyaena brunnea</i> : Thunberg	E	E	E	E
Brown Hyaena/Strandwolf				
<i>Crocota crocuta</i> : Erxleben	E	E	E	E
Spotted Hyaena/Gevlekte Hiëna				
Family — <i>Felidae</i>				
<i>Felis lybica cafra</i> : Desmarest	X	X	X	X

	Cradock	Uitenhage	Bredasdorp	Swellendam
African Grey Cat/Vaalboskat				
<i>Felis Nigrripes</i> : Burchell	X	X	—	—
Black-footed Cat/Swartpootwildekat				
<i>Felis serval serval</i> : Schreber	—	X	E	E
Serval/Tierboskat				
<i>Felis c. caracal</i> : Schreber	X	X	X	X
Caracal Lynx/Rooikat				
<i>Panthera p. pardus</i> : Linnaeus	X	X	X	X
Leopard/Luiperd				
<i>Panthera l. leo</i> : Linnaeus	E	E	E	E
Lion/Leeu				
<i>Acinonyx j. jubatus</i> : Schreber	E	E	E	E
Cheetah/Jagluiperd				
ORDER — TUBILIDENTATA				
Family — Orycteropodidae				
<i>Orycteropus a. afer</i> : Pallas	X	X	?	X
Antbear/Erdvark				
ORDER — PROBOSCIDEA				
Family — Elephantidae				
<i>Loxodonta a. africana</i> : Blumenbach	E	X	E	E
African Elephant/Olifant				
ORDER — HYRACOIDEA				
Family — Procaviidae				
<i>Procavia capensis</i> : Pallas	X	X	X	X
Rock Dassie/Klipdas				
<i>Dendrohyrax arboreus</i> : A. Smith	—	?	—	—
Tree Dassie/Bosdas				
ORDER — PERISSODACTYLA				
Sub-order — Ceratomorpha				
Family — Rhinocerotidae				
<i>Diceros b. bicornis</i> : Linnaeus	E	E	E	E
Black Rhinoceros/Swartrenoster				
Sub-order — Hippomorpha				
Family — Equidae				
<i>Equus z. zebra</i> : Linnaeus	X	E	—	E
Mountain Zebra/Bergkwagga				
<i>Equus quagga</i> : Gmelin	E	E	E	E

	Cradock	Uitenhage	Bredasdorp	Swellendam
Quagga/Kwagga				
ORDER — ARTIODACTYLA				
Sub-order — Suiformes				
Family — Suidae				
<i>Potamochoerus porcus koiropotamus</i> :				
Desmoul	E	E	?	E(?)
Bushpig/Bosvark				
<i>Phacochoerus a. aethiopicus</i> : Pallas	E	E	E	E
Warthog/Vlakvark				
Family — Hippopotamidae				
<i>Hippopotamus amphibius capensis</i> :				
Desmoul	E	E	E	E
Hippopotamus/Seekoei				
Sub-order — Ruminantia				
Family — Cervidae				
<i>Dama dama</i> : Frisch	I	—	—	—
Fallow Deer				
Family — Bovidae				
<i>Cephalophus m. monticola</i> : Thunberg	—	X	—	—
Blue Duiker/Bloubokkie				
<i>Sylvicapra grimmia</i> : Linnaeus	X	X	X	X
Common Duiker/Duiker				
<i>Raphicerus campestris</i> : Thunberg	X	X	X	X
Steenbok				
<i>Raphicerus melanotis</i> : Thunberg	—	X	X	X
Grysbok				
<i>Ourebia o. ourebi</i> : Zimm.	—	X	—	—
Oribi/Oorbietjie				
<i>Oreotragus o. oreotragus</i> : Zimm.	X	X	E(?)	E(?)
Klipspringer				
<i>Pelea capreolus</i> : Forster	X	X	X	X
Vaal Ribbok/Vaalribbok				
<i>Redunca f. fulvorufula</i> : Afzelius	X	X	—	—
Mountain Reedbuck/Rooiribbok				
<i>Redunca a. arundinum</i> : Bodd	—	E	—	—
Reedbuck/Rietbok				
<i>Antidorcas m. marsupialis</i> : Zimm.	X	E	EI	?
Springbok				
<i>Damaliscus d. dorcas</i> : Pallas	—	—	X	E(?)
Bontebok/Bontbok				
<i>Damaliscus dorcas phillipsi</i> : Harper	EI	—	—	—
Blesbok				

	Cradock	Uitenhage	Bredasdorp	Swellendam
<i>Alcelaphus busephalus</i> : G. Cuvier ... Red Hartebeest/Rooihartbees	E	E	E	E
<i>Connochaetes gnou</i> : Zimm. Black Wildebeest/Swartwildebees	E	—	—	—
<i>Tragelaphus scriptus sylvaticus</i> :				
Sparr.	—	X	X	X
Bushbuck/Bosbok				
<i>Tragelaphus strepsiceros</i> : Pallas Kudu/Koedoe	E	X	E	E
<i>Taurotragus o. oryx</i> : Pallas Eland	EI	EI	E	E
<i>Syncerus c. caffer</i> : Sparr. African Buffalo/Buffel	E	X	E	E
ORDER — LAGOMORPHA				
Family — Leporidae				
<i>Lepus capensis</i> : Linnaeus Cape Hare/Vlakhaas	X	—	X	X
<i>Lepus europaeus</i> : Pallas Bush Hare/Kolhaas	X	X	X	X
<i>Pronolagus crassicaudatus</i> :				
l. Geoffroy	—	X	—	—
Red Hare/Rooihaas				
<i>Pronolagus rupestris</i> : A. Smith Smith's Red Hare/Smith se Rooi- haas	X	?	—	—
ORDER — RODENTIA				
Family — Bathyergidae				
<i>Bathyergus suillus</i> : Schreber Cape Sand Mole/Duinmol	—	—	X	X
<i>Georychus capensis</i> : Pallas Cape Mole Rat/Blesmol	—	—	X	X
<i>Cryptomys h. hottentotus</i> : Lesson Common Mole Rat/Hotnot se grysmol	—	—	X	X
<i>Cryptomys hottentotus caeculiens</i> :				
Brants	X	X	—	—
Common Mole Rat/Hotnot se grysmol				
<i>Cryptomys holosericeus</i> : Wagner Greater Grey Mole Rat/Groter Grysmol	X	—	—	—

	Cradock	Uitenhage	Bredasdorp	Swellendam
Family — <i>Hystricidae</i>				
<i>Hystrix africae-australis</i> : Peters	X	X	X	X
Porcupine/Ystervark				
Family — <i>Scuiridae</i>				
<i>Xerus inauris</i> : Zimm.	X	—	—	—
Ground Squirrel/Waaierstert-meerkat				
Family — <i>Pedetidae</i>				
<i>Pedetes c. capensis</i> : Foster	X	X	—	—
Springhare/Springhaas				
Family — <i>Muscardinidae</i>				
Sub-family — <i>Graphiurinae</i>				
<i>Graphiurus m. murinus</i> : Desmarest ...	—	X	X	X
Forest Dormouse/Boswaaierstertmuis				
<i>Graphiurus ocellaris</i> : A. Smith	X	?	X	X
Black and White Dormouse/Gemsbokmuis				
Family — <i>Muridae</i>				
Sub-family — <i>Murinae</i>				
<i>Grammomys d. dolichurus</i> : Smuts ...	—	X	—	—
Forest Mouse/Bosmuis				
<i>Rattus r. rattus</i> : Linnaeus	I	I	I	I
Black House Rat/Swartrot				
<i>Rattus (Mastomys) natalensis</i> : A. Smith	X	X	—	—
Multimammate Rat/Vaalveldmuis				
<i>Rattus verreauxi</i> : A. Smith	—	—	X	X
Verreaux's Rat/Kaapse Muis				
<i>Rattus (Praomys) namaquensis</i> : A. Smith	X	X	X	X
Namaqua Rock Rat/Namakwalandse Klipmuis				
<i>Rhabdomys pumilio</i> : Sparrman	X	X	X	X
Four Striped Rat/Streepmuis				
<i>Mus m. musculus</i> : Linnaeus	I	I	I	I
House Mouse/Huismuis				
<i>Mus m. minutoides</i> : A. Smith	X	X	X	X
Pygmy Mouse/Dwergmuis				
<i>Dasymys incommutus</i> : Sundevall	—	—	?	?
African Water Rat/Waterrot				

	Cradock	Uitenhage	Bredasdorp	Swellendam
<i>Acomys subspinosus</i> : Waterhouse ... Cape Spiny Mouse/Kaapse Stekelmuis	—	—	?	?
<i>Saccostomus c. campestris</i> : Peters ... Cape Pouched Mouse/Wangsak- muis	X	X	X	X
Sub-family — <i>Dendromurinae</i>				
<i>Steatomys pratensis krebsi</i> : Peters ... Fat Mouse/Vetmuis	X	X	—	—
<i>Steatomys pratensis pentonyx</i> : Sclater Fat Mouse/Vetmuis	—	—	X	X
<i>Dendromus m. mesomelas</i> : Brants ... Chestnut Tree Mouse/Rooiboom- muis	—	X	?	X
<i>Dendromus m. melanotis</i> : A. Smith ... Grey Pygmy Tree Mouse/ Grysboommuis	—	X	?	?
<i>Malacothrix typica</i> : A. Smith Mouse Gerbil/Grootoormuis	X	—	—	—
Sub-Family — <i>Otomyinae</i>				
<i>Otomys i. irroratus</i> : Brants Vlei Rat/Vleirot	X	X	X	X
<i>Otomys saundersiae</i> : Roberts Saunder's Vlei Rat/Kleinvleirot	—	X	?	?
<i>Otomys unisulcatus</i> : F. Cuvier Bush Karoo Rat/Boskaroorot	X	X	X	X
<i>Otomys sloggetti</i> : Thomas Ice Rat/Ysrot	X	—	—	—
<i>Parotomys brantsi rufifrons</i> : Wagner Brant's Karoo Rat/Brant se Karoo- rot	X	—	—	?
Sub-family — <i>Cricetinae</i>				
<i>Mystromys albicaudatus</i> : A. Smith ... White-tailed Rat/Witstertrot	—	X	—	—
Sub-family — <i>Gerbillinae</i>				
<i>Desmodillus auricularis</i> : A. Smith Short-tailed Gerbil/Kortstertnag- muis	X	X	?	X

	Craddock	Uitenhage	Bredasdorp	Swellendam
<i>Gerbillus pæba</i> : Olivier	X	X	X	X
Lesser Gerbil/Kleinnagmuis				
<i>Tatera afra</i> : Gray	?	?	X	?
Cape Greater Gerbil/Kaapse Nagmuis				

NOTES ON THE NATURAL VEGETATION, CLIMATE AND PHYSIOGRAPHY OF THE DISTRICTS UNDER CONSIDERATION — RELEVANT TO THE POSSIBLE VARIATION IN ANIMAL POPULATIONS.

Introduction.

In considering Swellendam and Bredasdorp as adjoining districts it must be pointed out that whilst the latter is mainly coastal, Swellendam can be divided into three natural regions, viz. (i) a coastal bottleneck following the Breede River to its mouth and similar, geographically, to Bredasdorp, (ii) a central region of mixed grassveld and scrub, south of the Langeberg range of mountains, and (iii) a northern region, beyond the mountains, having features resembling the Little Karoo. These different regions will, of necessity, enforce some ecological variation in the fauna found therein.

Natural Vegetation.

The main difference in vegetation occurs between Craddock district on the one hand and the remaining three, collectively, on the other. This is because Craddock is within an area of fairly typical Karoo flora, whereas a large part of Uitenhage and much of Bredasdorp and Swellendam comes within the area of Cape Macchia.

The undeveloped areas from Swellendam to Mossel Bay are now mainly worthless renosterbosveld (*Elytropoppus rhinocerotis*), although a hundred years ago they were mainly covered with the rich red grass, *Themeda triandra* (Wellington: 1955:1:276). It is true that much land in the Swellendam and Bredasdorp areas is given over to arable farming, but immediately it is uncropped, or where heavy grazing has occurred, the renoster bush quickly takes over. Dropping down from Swellendam into the Bredasdorp district, the vegetation deteriorates even more and the pasturage here is decidedly poor. With this in mind, it is not surprising that bontebok removed from the reserve at Bredasdorp to the farm of Mr. F. W. M. Bowker on the Fish River Rand, between Grahamstown and Bedford, should thrive out of all proportion compared with animals in the reserve (Skead: 1958). This suggests that, even without the destruction of game at the hands of the hunter, the deterioration

of the veld might have resulted in a movement of the larger animals northwards in search of more nutritious pastures. This is not meant to imply that renoster bush cannot be eradicated, indeed, controlled burning in the spring has been found effective in re-establishing grass (A. Marais: 1937).

The natural vegetation in the Addo region is a mixed bushveld interspersed with Cape Macchia, whilst the region around Cradock is a mixture of Karoo shrubs, mountainous grasslands and scrub.

These varying features of the districts under consideration have their effects on the species and sub-species to be found and can often explain the absence of a particular kind of mammal from a certain locale.

Climate.

The main difference here lies in the proximity of Bredasdorp and Swellendam to the winter rainfall area, and, in fact, receiving rain all the year round, whilst Uitenhage and Cradock occur in a region of predominantly summer rains, although Uitenhage is on the fringe of the all-season area. Generally speaking, Uitenhage receives more rain than the other regions (27") with Cradock at the bottom of the list (17"). The temperatures tend to approximate for Uitenhage, Bredasdorp and Swellendam, although the latter two are somewhat lower during the winter. The temperature at Cradock becomes rather higher during the summer than in the other districts and combined with the lower rainfall produces the more arid conditions to be found in the lowland areas of the region.

These climatic differences also contribute to certain dissimilarities found in the list of mammals, since a drier and hotter region invariably produces paler forms than a moister and cooler one.

Physiography.

Swellendam, with the Langeberg range passing through it, generally presents a more undulating terrain than that found in the neighbouring district of Bredasdorp. Through Swellendam there flows the Breede River, which has its source in the "mountains of heavy rainfall" to the northwest, so that the part of the district to the south of the Langeberg is well watered.

The town of Cradock lies in the valley of the Fish River — the Cradock Gap — cutting through the Winterberge Range.

The Addo Elephant Park, situated in the Addo Bush, is on a coastal plain shelving from the Escarpment towards the Indian Ocean.

In the districts of Cradock and Swellendam, therefore, there are mountainous areas providing facilities for montane fauna, whereas Uitenhage and Bredasdorp, having coastal plainlands, will be more particularly appropriate for the lowland-living forms.

Whilst pointing out the aforementioned similarities and differences in geographical features of the named districts and using these to explain the distribution of mammals therein, it is, nevertheless, realised that there have been many instances of the transfer of types from a native to a foreign area without any appreciable deterioration, indeed, the new conditions provided by such a move will often produce a remarkable impetus to rejuvenation from an existing poor state occasioned by a worsening of the normal habitat. In addition to this it is also recognised that there are some animals which can tolerate, and normally occupy, a wide variety of environments. Notwithstanding these possibilities, it is more usual for a particular type to have a fairly limited locale and one which it will not leave of its own free will, except under unusual circumstances.

DISCUSSION ON THE INCIDENCE OF CERTAIN MAMMALS.

These notes set out the types under consideration in an order which follows that of the list. Generally speaking, reference will not be made to the occurrence of animals in the Uitenhage and Cradock districts, since these have been fully dealt with by Skead.

It has been found, with some regret, that little specific reference was made by the early writers to the Bredasdorp district. For this reason most of the notes will refer to the present conditions there, with occasional inferences to the past state of affairs gathered from data available for the surrounding districts.

BAKOORJAKKALS: *Otocyon megalotes*: Desmarest.

Bredasdorp:

Swellendam: Not known to have occurred in these districts.

The early writers seldom mentioned distinguishing features of jackals.

SILVER FOX: *Vulpes chama*: A. Smith.

BLACK-BACKED JACKAL: *Canis mesomelas*: Schreber.

Bredasdorp:

Swellendam: These two types still occur in these districts.

HUNTING DOG: *Lycaon p. pictus*: Temminck.

Bredasdorp:

Swellendam: Now extinct in both of these districts, but must have roamed freely in this area in the past. The literature of the early writers seldom makes any specific reference to the hunting dog, as such, instead the tendency is to use the term "Wild dog" to cover the hunting dog, jackal and hyaena.

MAANHAARJAKKALS: *Proteles c. cristatus*: Sparrman.

Bredasdorp:

Swellendam: Still found in both districts. Reference by Moodie (1835: 1:256) to "wild dogs hunting by night" presumably implies this animal.

BROWN HYAENA: *Hyaena brunnea*: Thunberg.

SPOTTED HYAENA: *Crocuta crocuta*: Erxleben.

Bredasdorp:

Swellendam: These two forms were formerly found in both districts, although they are now generally regarded as extinct in the southern Cape Province. Whilst there have been reports of their infiltration into the Karoo in recent years, e.g. to Beaufort West, it is not without possibility that these movements would reach as far south as the districts in question. Backhouse (1844:101) refers to *H. crocuta*, said to be the berg wolf, and *H. villosa*, said to be the strand wolf, in the Swellendam region and mentions that they were numerous. Like Moodie (1835:1:249-256) he distinguishes between the two kinds on an ecological basis. The strand wolf, or wolf of the coast, was described by Moodie as living in holes in the earth, whereas the berg wolf was located within mountainous caves. Both forms were described as being destructive to cattle, horses and sheep.

AFRICAN GREY CAT: *Felis lybica*: Desmarest.

Bredasdorp:

Swellendam: Still found in these districts.

BLACK-FOOTED CAT: *Felis nigripes*: Burchell.

Bredasdorp:

Swellendam: Not known in these districts and seems to be restricted to Bechuanaland and the north-western and eastern regions of the Cape Province.

SERVAL: *Felis s. serval*: Schreber.

Bredasdorp:

Swellendam: Now extinct in both districts.

LEOPARD: *Panthera p. pardus*: Linnaeus.

Bredasdorp:

Swellendam: Occurs in both districts, but would seem to be in greater numbers in Swellendam than in Bredasdorp, probably owing to the

mountainous terrain of the former. In the Annual Vermin Schedules published in the Cape Provincial Gazette, there are rewards shown for six leopards in the Swellendam area between 1950 and 1955. Only one reward for each of the years 1950 and 1951 is shown for the Bredasdorp district. (P.A.N. 157/1951, P.N. 153/1952, P.N. 236/1953, P.N. 273/1954 and P.N. 214/1956).

LION: *Panthera leo*: Linnaeus.

Bredasdorp:

Swellendam: Now extinct in all areas south of the Orange River. It was once numerous in this area and many authorities claim for the region a so-called sub-species, *melanochaitus*. Although there is much doubt concerning the validity of the claim, this species was known as the "Cape Lion" and said to be famed for its large size, black mane and bulldog-shaped head. Lichtenstein (1812:11:92) mentions having seen twenty-two lions at one time in the region of Swellendam of which only eight were full grown.

CHEETAH: *Acinonyx j. jubatus*: Schreber.

Bredasdorp:

Swellendam: Extinct in both areas, but thought to have once been fairly common, especially in wooded areas.

ELEPHANT: *Loxodonta africana*: Blumenbach.

Bredasdorp:

Swellendam: Now extinct, but must have roamed freely over this area in the early days. Moodie (1835:1:248) says, "elephant does not appear to have been originally found here", when referring to the Swellendam district, but what interpretation he places on the term "originally" is difficult to assess. Sclater (1900:1:322), quoting Theal, reported the last elephant shot just beyond the Cape Flats in 1702. Thunberg (1795:11:38) reports that in 1773 an eighty-one year old farmer, Jacobus Botha, living at Kogman's Kloof, mentioned there being elephant right down to the Cape when the Colony was young — he had often killed four or five and sometimes twelve or thirteen in a day and had twice killed twenty-two in a day.

MOUNTAIN ZEBRA: *Equus z. zebra*: Linnaeus.

Bredasdorp: There are no references in the works of the early writers to the presence of zebra in this region — natural enough from the non-mountainous type of country to be found.

Swellendam: Now extinct in this region, but once roamed the mountains.

There must have been quagga in the area too, since Sparrman (1786:223) mentions that on September 2nd, 1775, he first saw quagga and describes them as being without stripes. Thunberg (1795:11:113) says that he saw "a great many zebras or striped horses" at Tigerhoek (Tygershoek), which is on the Caledon/Swellendam border. Dorothea Fairbridge (1924:63) writing of Lady Anne Barnard's life at the Cape during the period 1797-1802, quotes Lady Anne's report that whilst hunting with Jacob van Rheenen, a day's journey east of Swellendam, she had seen zebra. Perhaps the numbers of these animals were already diminishing by the turn of the century for Lichtenstein (1812:1:203), in a general list of animals seen around Swellendam, says, "we even sometimes saw zebras". This could, of course, have implied aloofness rather than rarity.

BUSHPIG: *Potamochoerus porcus koiopotamus*: Desmoul.

Bredasdorp: Would, no doubt, have occurred here since Roberts (1951:266) mentions that it probably existed in the scrub-covered hills and valleys as far as the Cape Peninsula, although there are no specific references to its presence here by the early writers.

Swellendam: Now probably extinct. Dr. Leonard Gill (1929: *in litt.*) said, "Blue duiker, bushbuck and bushpig certainly do not occur anywhere near Cape Town". Roberts (1951:266) reports the distribution from Swellendam to Knysna in the southern Cape and referring to a fine specimen by Sclater from Swellendam, adds, "but whether it still occurs today I do not know".

WARTHOG: *Phacochoerus a. aethiopicus*: Pallas.

Bredasdorp:

Swellendam: Now extinct, but formerly occurring throughout the western Cape Province. Moodie (1835:1:265) referring to woody ravines in the Swellendam mountains, mentions that there were many wild boars there during the visit of 1819-20 and described how they caused damage to crops at night. These could well have been bushpigs as the term "Boar" is most confusing and little mention is made of the normal term "Warthog". However, Andrew Smith (1833/34:90) describes the boschvark of the Cape Colonists as *Sus larvatus*: F. Cuvier, whereas he classifies the warthog as *Phacochoerus typicus* and indicates that this is the African boar, saying it inhabited the interior of the Cape Colony and was rather rare. Evidently, therefore, it must have become extinct in the southern areas of the province by this time.

STEENBOK: *Raphicerus campestris*: Thunberg.

Bredasdorp:

Swellendam: Still found in these districts. There was frequent reference to these animals by the early authors and it would appear that there was some confusion in nomenclature, and perhaps identification, between the steenbok and the grysbok. Barrow (1801:1:350) simply used the term steenbok, as did Lady Anne Barnard (Masson: 1949:218), whereas Steedman (1835:1:329) referred to steen-rheeboks. Moodie (1835:1:286) distinguished between 'flak' steenbok and 'grys' steenbok.

GRYSBOK: *Raphicerus melanotis*: Thunberg.

Bredasdorp:

Swellendam: Found in these areas at the present time. Remarks applied to the steenbok are applicable here, bearing in mind that the grysbok prefers the cover of scrub and bushveld, whereas the steenbok is more at home in open grassveld, although under duress of hunters the steenbok will often frequent bush cover too.

ORIBI: *Ourebia o. ourebi*: Zimm.

Uitenhage: Further to the remarks by Skead (Koedoe:1958:1:53) there has been no further evidence of the presence of the animal in this district, despite a recent survey of the area by means of a postal questionnaire addressed to farmers. There have been reports of the animal's conservation and introduction in the neighbouring districts of Jansenville and Alexandria, there being twenty present on one farm in the former district and a few on each of five farms in Alexandria.

Bredasdorp:

Swellendam: Never found as far west as this area.

VAAL RIBBOK: *Pelea capreolus*: Forster.

Bredasdorp: About one hundred vaal ribbok occur in the Bontebok National Park, the country here being sandy flats with stunted bush. Nevertheless these animals thrive in this type of country, which is totally unlike their normal habitat.

Swellendam: They are found in this district, but their numbers appear to be on the decrease. Mr. C. Badenhorst reports that there are a few to be seen on his father's farm in this area. There are few references to this animal by the early writers, possibly owing to the fact that its flesh is not considered good eating. The term 'reebok' (or rhebok) used by the early authors for animals in the area must have referred to this one, since reedbuck and mountain reedbuck do not occur so far south.

MOUNTAIN REEDBUCK: *Redunca f. fulvorufula*: Afzelius.

REEDBUCK: *Redunca a. arundinum*: Bodd.

Bredasdorp:

Swellendam: Neither of these animals found so far south.

SPRINGBOK: *Antidorcas m. marsupialis*: Zimm.

Bredasdorp: It is believed that there are a few on the coast in the Skip-skop area. These were described as the "small variety", by Mr. C. Badenhorst. This is a term often used erroneously and the general indication is of a young herd.

Swellendam: Not generally considered to have inhabited this region. Sclater (1900:1:211) gives the southern limit as the Zwartberg and says that it was not, and never had been, found in the Cape, Stellenbosch and other south-western and southern districts. Moodie (1835:1:288), however, mentions meeting an old Hottentot, whose age was reputed to be 130 years, and in conversation with him learnt that the Swellendam district had once been abounding with various antelopes and springbuck had been plentiful then. Even so, such a report, based upon memory and in a man of extreme age, might well be lightly regarded.

GEMSBOK: *Oryx gazella*: Linnaeus.

Bredasdorp:

Swellendam: Has never occurred in this area.

BONTEBOK: *Damaliscus d. dorcas*: Pallas.

Bredasdorp: The presence of the National Reserve here requires no further comment.

Swellendam: (Possibly extinct in this region at the moment, although there may be a few on farms.) This area was, of course, the original home of this animal and there are frequent references to it by the early writers. Barrow (1801:1:350) in his description of the Swellendam fauna, during his travels of 1797-1798, implied a diminution in numbers of this animal, which he wrote of as being "formerly very numerous and now reduced to troops of twelve to twenty". Lady Anne Barnard also mentions hunting bontebok about this time, on the farm of Jacob van Rheenen and apparently ate the flesh too! Masson (1949:218 *et seq.*). This verifies that Van Rheenen was familiar with the bontebok before going on his trip to the wreck of the "Grosvenor" and must, therefore, have confused this animal with the blesbok, which he met farther north. Writing of his travels

through Swellendam in 1803-1806, Lichtenstein (1812:1:202-3) declared that there were lots of game and amongst these he included bontebok, but it would be wrong, perhaps, to assume that the general term "lots" applied individually to bontebok. Moodie (1835:1:235) writing of the animal in this district, said that it had been reduced to a few herds and confined to an area from the mountains to the coast in one direction and between the Breede and Duivenhoek Rivers in the other. Sclater (1900:1:140) suggested that, at the time of writing, the bontebok was extinct in a feral state, but by then the animal had been preserved on the farms "Nachtevacht" and "Zeekoe Vlei" by the original owners, Messrs. Van der Byl and Van Breda. It was from this beginning that the present National Park was developed.

BLESBOK: *Damaliscus dorcas phillipsi*: Harper.

Bredasdorp:

Swellendam: It is now generally accepted that the blesbok was never found as far south as this. The controversy over the relative distribution of blesbok and bontebok has been admirably presented by Skead (Koedoe: 1958:1:19 et seq.) and the evidence would seem to weigh heavily against any intermixing of the two types or invasion of one's territory by the other.

RED HARTEBEEST: *Alcalaphus busephalus caama*: G. Cuvier.

Bredasdorp:

Swellendam: Now extinct, but originally one of the most common of South African antelopes in the Cape. It was known right down to Cape Town by the early authors and Van Riebeeck mentioned its occurrence around 1652, in his journal, as quoted in Theal's History (1881:1:51). Unfortunately it was rigorously hunted by the early colonists so that by the end of the eighteenth century it had been virtually shot out of the Cape Peninsula. Lichtenstein (1812:1:202) mentions its occurrence around Swellendam during his travels of 1803. At the end of the nineteenth century it was restricted to a few farms in the Orange Free State, Natal and Griqualand West.

BLACK WILDEBEEST: *Connochaetes gnou*: Zimm.

Bredasdorp:

Swellendam: Never known in this district.

BLUE WILDEBEEST: *Gorgon taurinus*: Burchell.

Bredasdorp:

Swellendam: Never known in this district — it only occurred north of the Orange River.

KUDU: *Tragelaphus s. strepsiceros*: Pallas.

Bredasdorp:

Swellendam: Certainly does not occur in these districts at the present time and there is some doubt that it ever did, since no references have been found in literature to records from this area. Roberts (1951:308) uses the sweeping statement "from the southern districts of the Cape Province" in describing their past distribution. He also mentions that it was very likely that herds would exist on private properties in the neighbouring district of Riversdale. In this event and assuming that they were once roaming free in the area, it would not be unlikely that their normal habit of continual dispersal combined with a remarkable ability to overcome obstructions to their passage would carry them across the border.

ELAND: *Taurotragus o. oryx*: Pallas.

Bredasdorp:

Swellendam: Now extinct, but once roamed extensively in this region. Whilst not always a reliable guide, there are many place names in both districts bearing that of this animal.

BUFFALO: *Syncerus c. caffer*: Sparrman.

Bredasdorp:

Swellendam: Now extinct. Formerly plentiful in these districts and they were still present in the Caledon district in 1777 (Paterson: 1790:9). By the middle of the next century, however, Moodie (1835:1:249) could report that they had disappeared from the Swellendam district.

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