1.a.Aims:

In this investigation an attempt is made to determine the widest distribution during historical times of the species and some of the subspecies of the orders Perissodactyla and Artiodactyla, and to compare their former ranges with their present ones.

The dwindling faunal resources of southern Africa have often been the topic of speculation, but no comprehensive survey has ever been undertaken to determine the extent to which they have declined.

The restocking of game sanctuaries and farms with the fauna long since or even more recently exterminated in these areas, poses a further problem. The re-introduction of those animals that inhabited the area in former times requires a knowledge of all the species formerly found there, their former abundance, as well as any physical changes that may have taken place in the areas under consideration. Therefore the present survey may be of practical use to the National Parks Board, Departments of Nature Conservation and others in their planned re-introduction of game in certain areas.

Since most of the early writers very seldom distinguished between species and subspecies, this investigation to a large extent has to be at species level, although subspecies will be distinguished where possible.

Wherever possible, the numbers of the different species in their former and present ranges will be compared, although this comparison will largely be based on conjecture.

If changes in distribution and numbers have been confirmed, the proximate causes for these changes will, where possible, be given. Destruction of available habitat owing to agricultural development, as well as the effects of hunting and other contributing factors will be considered.

It must be emphasised that in an investigation of this nature, based on scientific reports on the one hand and the accounts of hunters and travellers on the other, it is extremely difficult, if not often impossible, to get a clearcut view of former ranges and population abundance. The movements of game that previously occurred over wide areas of southern Africa further complicate this task and this report cannot

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therefore, give more than a broad outline of the former geographic ranges of the animals under discussion.

1.b.Methods applied:

The former ranges of the different species or subspecies have been ascertained from the following:

i.Published works, including books, and journals of travel, hunting and scientific discovery published since 1652. Incidental information has also been extracted from the writings of missionaries, geologists and historians. Old newspaper articles and government gazettes have also shed light on the subject.

ii.Unpublished literature such as memoranda, reports, correspondence, documents and hunting diaries, mostly found in archives, museums and various government departments.

iii.Charts, maps, drawings, paintings, etc., from various sources.

iv.Rock paintings.

v.Place names.

The present status and distribution of the animals concerned have been ascertained from the unpublished annual reports of the Cape Department of Nature Conservation, Natal Parks Game and Fish Preservation Board, National Parks Board, Transvaal Provincial Administration and the Rhodesian Department of National Parks and Wild Life Management and others. The various bulletins, journals, annals and miscellaneous publications of these organisations have been consulted, the more important of these include:

i.African Wild Life
ii.Arnoldia
iii.Fauna and Flora
iv.Cimbebasia
v.Koedoe
vi.Lammergeyer
vii.Puku
viii.Reports of the Cape Department of Nature Conservation
ix.South African Geographical Journal
x.South African Journal of Science
xi.Zoon .

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1.c. Groups studied:

The following genera, species, and occasionally subspecies, of the orders Perissodactyla and Artiodactyla, as included in the interim classification of Meester et al. (1964), have been taken into account:

Order PERISSODACTYLA

Family RHINOCEROTIDAE

Genus Diceros

Diceros bicornis Black rhinoceros

Genus Ceratotherium

Ceratotherium simum Square-lipped rhinoceros

Family EQUIDAE

Genus Equus

Equus quagga Extinct quagga

Equus zebra zebra Mountain zebra

Equus zebra hartmannae Mountain zebra

Equus burchelli Burchell's zebra

Order ARTIODACTYLA

Family SUIDAE

Genus Potamochoerus

Potamochoerus porcus Bushpig

Genus Phacochoerus

Phacochoerus aethiopicus Warthog

Family HIPPOPOTAMIDAE

Genus Hippopotamus

Hippopotamus amphibius Hippopotamus

Family GIRAFFIDAE

Genus Giraffa

Giraffa camelopardalis Giraffe

Family BOVIDAE

Genus Cephalophus

Cephalophus natalensis Red duiker

Cephalophus monticola Blue duiker

Genus Sylvicapra

Sylvicapra grimmia Grey duiker

Genus Raphicerus

Raphicerus campestris Steenbok

Raphicerus melanotis Grysbok and Sharpe's grysbok

Genus Ourebia

Ourebia ourebi Oribi

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Genus Nesotragus
Nesotragus moschatus Suni

Genus Oreotragus
Oreotragus oreotragus Klipspringer

Genus Madoqua
Madoqua kirki Damara dikdik

Genus Pelea
Pelea capreolus Vaal rhebok

Genus Redunca
Redunca fulvorufula Mountain reedbuck
Redunca arundinum Reedbuck

Genus Kobus
Kobus ellipsiprymnus Waterbuck
Kobus vardoni Puku
Kobus leche Lechwe

Genus Aepyceros
Aepyceros melampus Impala
Aepyceros petersi Black-faced impala

Genus Antidorcas
Antidorcas marsupialis Springbuck

Genus Oryx
Oryx gazella Gemsbok

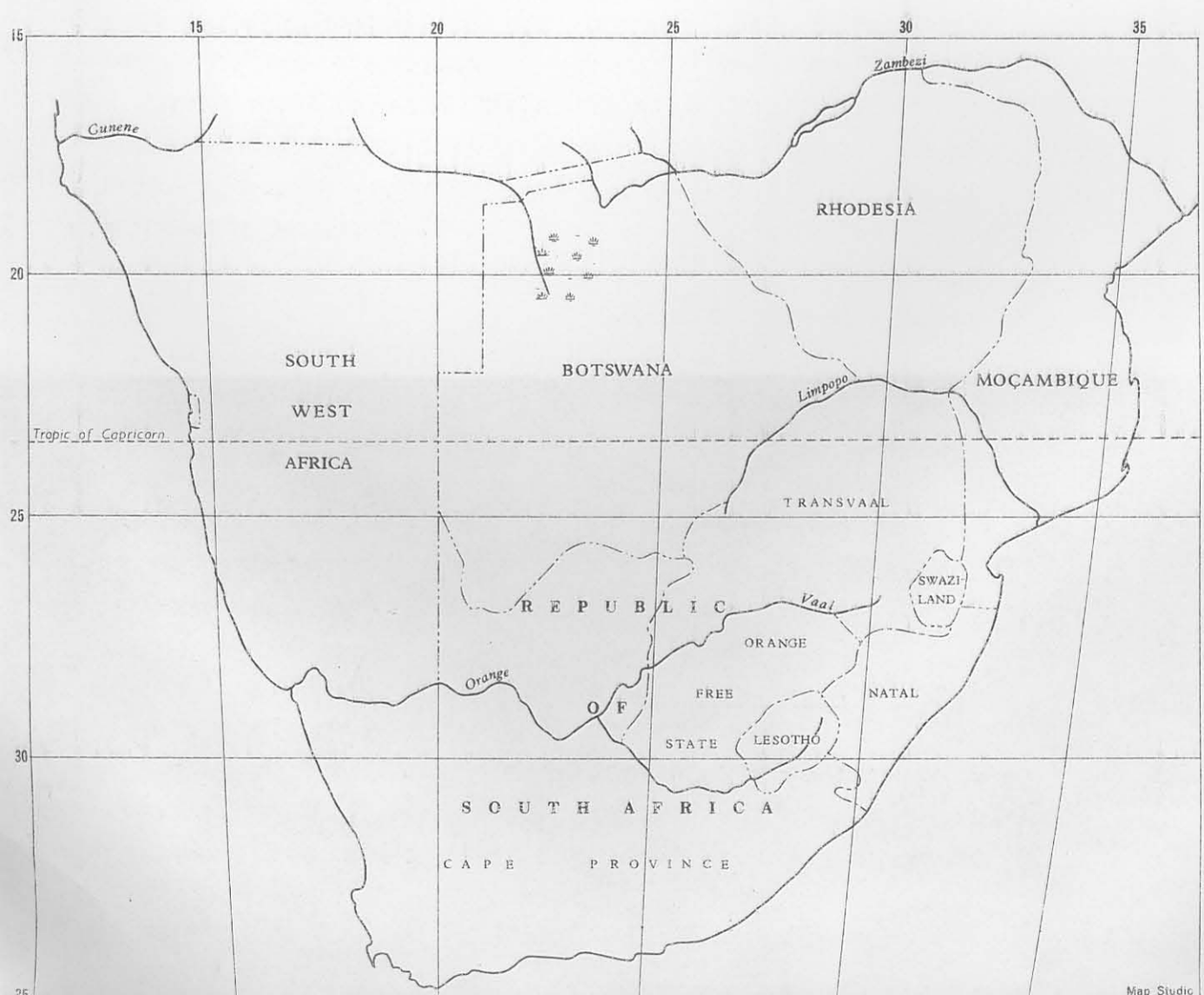
Genus Hippotragus
Hippotragus equinus Roan antelope
Hippotragus niger Sable antelope
Hippotragus leucophaeus Extinct bluebuck

Genus Damaliscus
Damaliscus lunatus Sassaby
Damaliscus dorcas dorcas Bontebok
Damaliscus dorcas phillipsi Blesbok

Genus Alcelaphus
Alcelaphus buselaphus Red hartebeest
Alcelaphus lichtensteini Lichtenstein's hartebeest

Genus Connochaetes
Connochaetes gnou Black wildebeest
Connochaetes taurinus Blue wildebeest

Genus Tragelaphus
Tragelaphus scriptus Bushbuck
Tragelaphus spekei Sitatunga
Tragelaphus angasi Nyala
Tragelaphus strepsiceros Kudu



Genus Taurotragus

Taurotragus oryx Eland

Genus Syncerus

Syncerus caffer Buffalo.

1.d. Area under investigation:

Following the limits established by Sclater (1900), this comprises the whole area south of the Cunene river in the west and the Zambezi river in the east.

This includes the Republic of South Africa, Botswana, Lesotho, Swaziland, Mozambique south of the Zambezi, Rhodesia and South-West Africa.

1.e. Period under consideration:

The period covered by this investigation extends from the time of the first European settlement at the Cape in 1652 up to the present.

1.f. Mapping and codification to indicate distribution of different species:

Various authors (Shortridge, 1934, Van der Spuy, 1962, Kettlitz, 1962, Bigalke and Bateman, 1962, Child and Savory, 1964) indicate distribution and frequently also abundance of the species studied by them by means of a variety of mapping procedures. For the present investigation particularly where past distributions are concerned a sensitive mapping procedure would be misleading because these data are often based on incomplete records. It is frequently necessary for example, to rely on obscure and widely-separated place names for records.

Map: the map used is on a 1:15,000,000 scale, giving international borders south of the Cunene and Zambezi rivers, as well as provincial boundaries in the Republic of South Africa.

Two maps are given for each species, each diagonally hatched for widest past distribution in the first map, and present-day distribution in the second.

1.g. Earlier investigations:

The distributions of the species here discussed have to a greater or lesser extent been described in the past by both hunters and zoologists. Of these the more important include the following:

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Smuts (1832) presents what is probably the first strictly South African work on mammals.

Peters (1852) describes the distribution of a number of antelopes in Mocambique.

Bryden (1893) discusses the distribution of the larger game animals in Botswana.

Ward (1896) describes the distribution of big game in South Africa at that time, but also refers to earlier distributions.

Lydekker(1908) gives the distribution of the Perissodactyla and Artiodactyla in Southern Africa and also compares in broad outlines the past distribution of each species.

FitzSimons (1920), in addition to distribution at that time, refers to changes in distribution since earlier times.

Knobel (1958) discusses the distribution of Perissodactyla and Artiodactyla in the Union (now Republic) of South Africa.

A number of authors discuss distribution in more restricted areas, i.e. Wilhelm (1931), Bigalke (1958) and Van der Spuy (1962) for South-West Africa; Fraser (1958) and Child and Savory (1964) for Rhodesia; Kettlitz (1955 and 1962) for the Transvaal; Hewitt (1931), Rand (1955) and Bigalke and Bateman (1962) for parts of the Cape Province; Vincent (1962) and Bigalke (1965) for Natal and Smithers (1968) for Botswana.

In addition to the above, a number of works give more specific comparisons of earlier and later distributions, but mostly on a more restricted scale in respect of either animals or area considered. Of these the following are of importance:

Smith (1849) gives the earlier and later distribution of twelve mammal species.

Buckley (1876) compares the earlier distributions of a number of large mammals with those in 1874. He chose the 18th degree of latitude as his northern boundary, thus not covering the whole territory included in the present investigation.

Bryden (1899) compiles a survey of earlier distributions, compared with the distribution at that time, of the sporting mammals of South Africa.

Sclater (1900) was perhaps the first to consider the larger geographic region as covered in

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this survey and gives a very complete account of distributions at the end of the 19th century.

Shortridge (1934) in his comprehensive work on the mammals of South-West Africa, deals with their distribution within as well as outside the limits of this region. For all practical purposes Shortridge's survey will be considered as the conclusion of the past distribution for this investigation. This is merely an arbitrary division since it is very difficult to decide where to draw the line between the past and present distributions. Shortridge however includes so much of the past distributions of the mammals under investigation that one feels that for the present the data should be much more up to date and valid.

Roberts (1951) to a certain extent includes past distributions in his classification.

Sidney (1965) compares the recent densities and distributions of a number of genera of African mammals with those at the turn of the previous century.

Ellerman et al.(1951) also include Angola, Zambia, Malawi and Mocambique north of the Zambezi in their treatment of distributions.

A large amount of incidental information regarding past distributions is to be found in early accounts of hunting and travel, eg. in Andersson (1856, 1861 and 1875), Burchell (1822 and 1824), Cumming (1850), Drummond (1875 and 1876), Kirby (1896), Lichtenstein (1812), Oates (1899) , Selous (1890, 1893 and 1908) and many others.

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