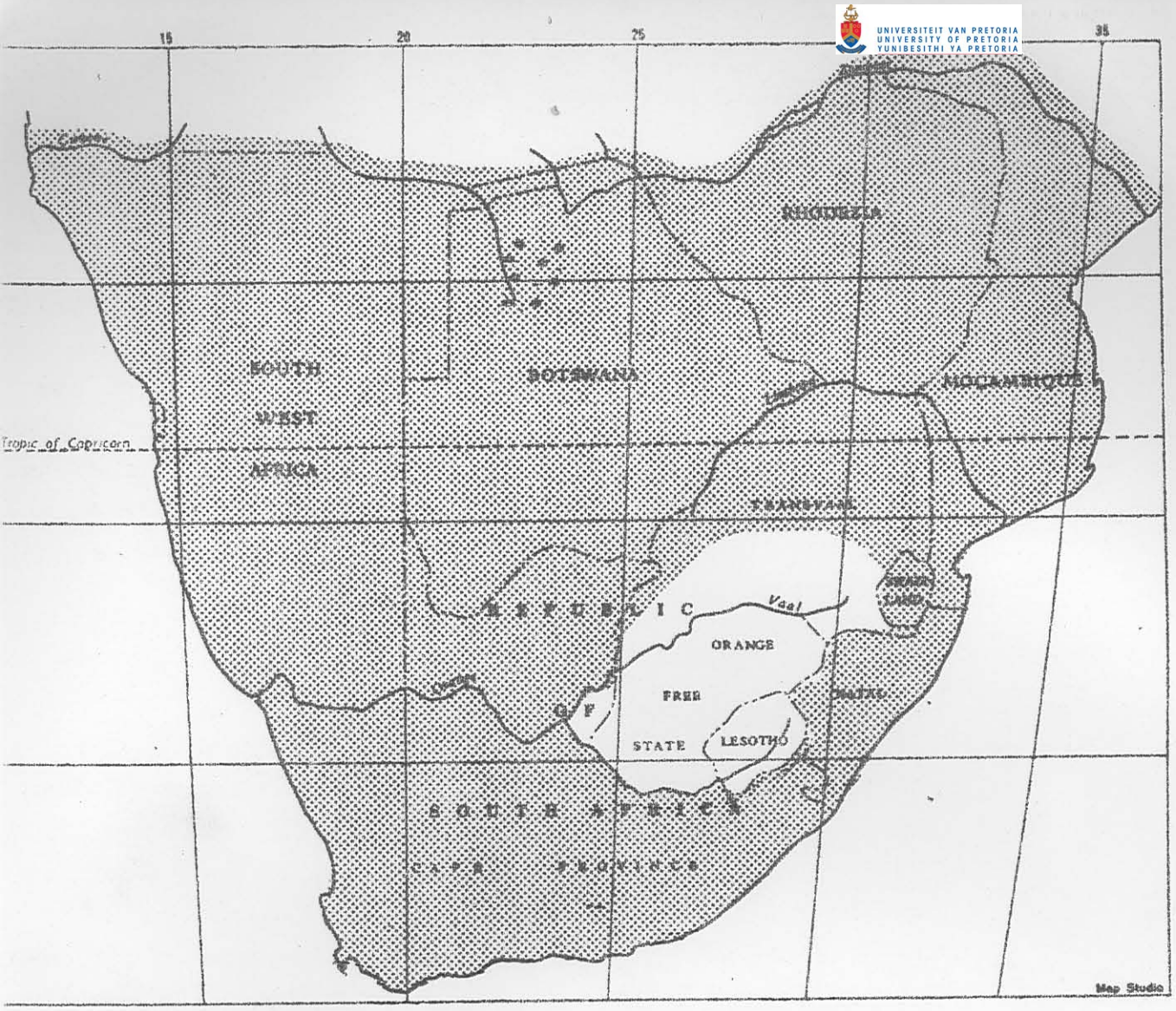
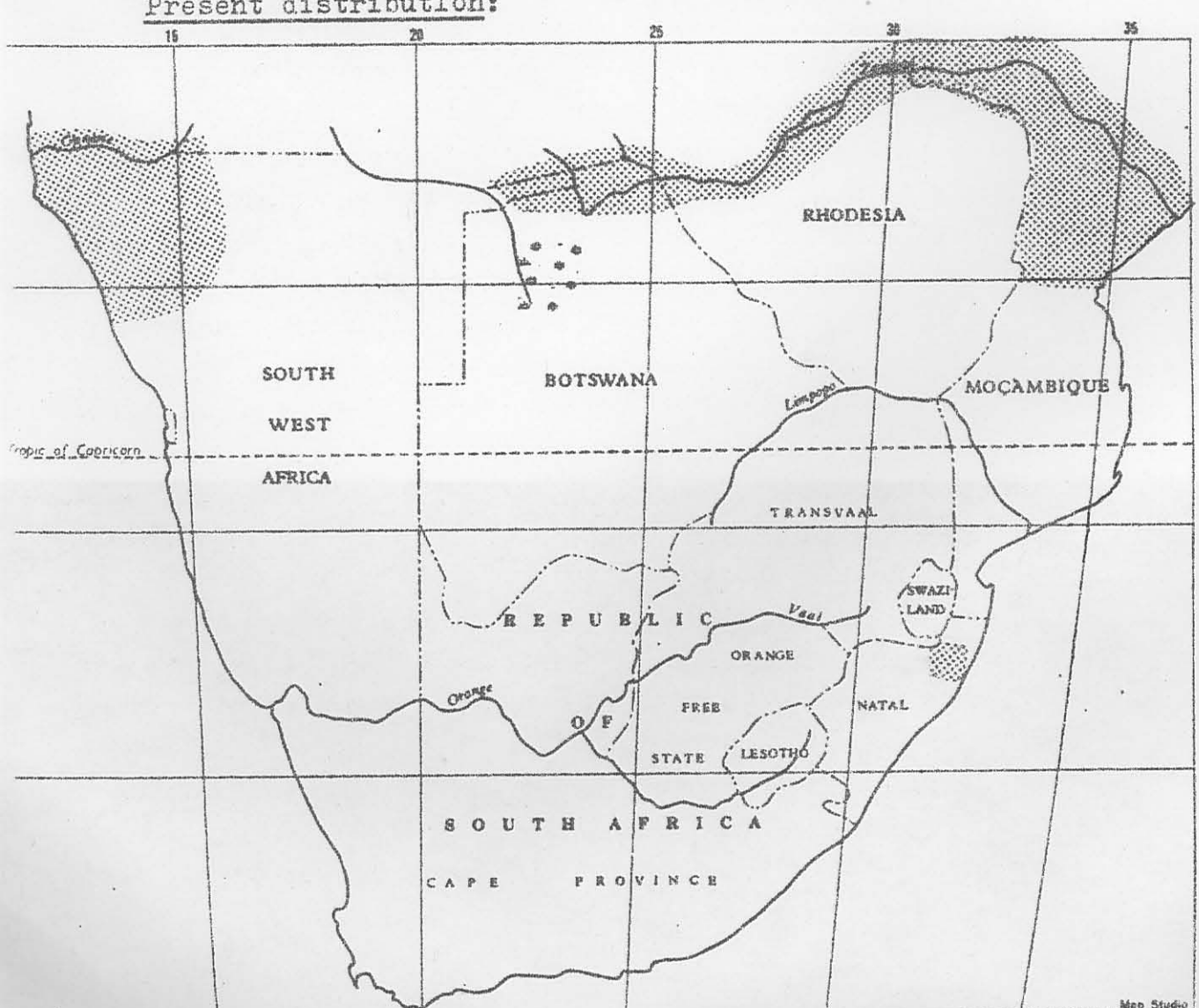


Past distribution:

Present distribution:

Diceros bicornis (Black rhinoceros)



2.Order Perissodactyla.

Family Rhinocerotidae:

The former ranges of the two rhinoceros species are difficult to determine precisely, especially where they overlapped to a large extent, since the earliest records do not distinguish between them. The difference in the upper lip is not the only distinguishing character available, and other differences such as thickness of skin, length of horns and colour have also been used in the past. The last two characteristics, especially, tend to create confusion.

Diceros bicornis (Black rhinoceros):

Cape Province:

The earliest written references to rhinoceroses are found in the diary of Van Riebeeck (Bosman 1952, Thom 1958) written in 1652.In this year the occurrence of D.bicornis was reported in the immediate vicinity of the Fort at the Cape and on the slopes of Table Mountain. With each subsequent journey of discovery or trade undertaken into the interior by officials of the Dutch East India Company, a wider distribution becomes clear. At the outset these journeys were mostly made in a northerly direction along the west coast of the Cape. According to Van Riebeeck's diary and the Dutch East India Company's "Oude Wildschutte Boek" (numbers 1-3, Cape Archives) as well as Molsbergen (1916) and Theal (1964), D. bicornis was encountered in the following localities during the years 1652-1712: Salt river, Little Berg river, Great Berg river, Tygerberg, Saldanah Bay, Riebeeck Kasteel, Piketberg and along the Olifants river. Berg in 1682-3(Mossop, 1931), Tachard (1685) and Kolben (1731) also mention rhinoceroses in the vicinity of Cape Town.

In none of these references is any distinction between species given, but in the revised version of Mentzel's description of the Cape of Good Hope in 1787 by Mandelbrote (1944), the rhinoceros found in the Cape is described as follows: "The upper lip can be stretched half a foot and ends in a pointed fleshy protuberance, which it uses as a kind of hand and imperfect trunk for taking up its food and putting it into its mouth ".

Kolben (1731) writes of the Cape rhinoceros:

"His mouth is like that of a Hog, but somewhat more pointed." "He is not fond of Feeding on Grass, chusing rather Shrubs, Broom and Thistles. But the Delight of his Tooth is a Shrub, ... the Rhinoceros-Bush".

From the above descriptions, the characteristic prehensile upper lip and the preference for browsing can be deduced. These, together with the fact that no records of the square-lipped rhinoceros so far to the south could be found according to Sclater (1900) and others, lead to the assumption that the species recorded at the Cape was D.bicornis.

Further to the north along the west coast up to Little Namaqualand, the rhinoceros is recorded by Paterson (1789) at Renosterbos near the Bokkeveld range and by Lichtenstein (1812) near the presentday Calvinia. Wikar, according to Mossop (1935), mentions rhinoceroses along the left bank of the lower Orange river between Goodhouse and the presentday Kakamas during the period 1775-1779. Shortridge(1942) confirms Wikar's encounter with rhinoceroses at Coboopfontein and Kaykoop in 1779. It is impossible to identify the species, but Shortridge (1934) contends that the square-lipped species was never found south of the Orange river.

An illustration of the "Africaanse Rhinoster " in a map by Gordon (Map no. 3, Gordon Collection, Cape Archives) is probably that of the prehensile-lipped species. It is drawn to the south of the Orange river in the Cape Province, but this does not necessarily imply that he encountered it at the locality shown. On drawing no. 64 of the same collection, however, he states: "Hier had ik het schoonste en singulierste gesigt in alle mijne Reisen, siende met een opslag van een oog in een halwe Cirkel, twaalf Cameelpaarden, in de vyftig Oliphanten, 5 Rhinocerossen, ..." This refers to a point just below the Aughrabies Falls and the species was probably his "Africaanse Rhinoster".

In due course journeys were also made along the Cape east coast and more to the centre and east of the Province. The earliest records found were those of Schrijver (Mossop, 1931) who encountered the rhinoceros near the Kariega river in the Karoo in 1689, and of Gordon who, according to Shortridge (1934), recorded it near the Gamka river in the Oudtshoorn district in 1790.

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Thunberg (1795), on his second journey in 1773, mentions the rhinoceros at Krakakamma in the vicinity of the Swartkops river.

According to VC.104, Cape Archives (author unknown), the rhinoceros was still to be found along the banks of the Great Brak river between the years 1796-8.

Paterson (1789) recorded it at Coega in the Algoa Bay vicinity in fair numbers, and also at Sandflats near Alexandria. In this same vicinity it was also recorded by Le Vaillant (1780) and Lichtenstein (1812), and by Barrow (1801) in the Tsitsikamma area.

Along the Little and Great Fish rivers, and especially at the mouth of the latter, the rhinoceros is mentioned by Sparrman (1772), Paterson (1789), Barrow (1801) , Rose (1829), Bunbury (1848) and Backhouse (1884). According to Pringle (1835) its range included the Eastern Province, although it was nearly extinct in that area by 1822. The Komadagga-Agterbruintjieshoogte-Camdebo area is mentioned by Sparrman (1775), Mentzel (Mandelbrote, 1944) in 1780 and Lichtenstein (1812).

In the Cape Province north of the Orange river, D.bicornis was distributed in Griqualand West and also near the Cape-Western Transvaal border. Records from Bain (Lister, 1949) in 1816, Methuen (1848), Campbell (1822), Smith (Kirby, 1939) and Moffat (Wallis, 1945) substantiate this distribution.

Natal:

In Natal the first record found of the rhinoceros was that of Isaacs (Herrman, 1936) who, between 1825 and 1832 in his description of Zulu hunting methods, writes that these animals were easily hunted and killed owing to their bulkiness and inability to move at speed. The species is not indicated. Another unidentified record of what may have been the black species is that of Fynn (Stuart and Malcolm, 1950) who encountered rhinoceroses in the presentday Utrecht district during the period 1824-36.

The first record of a black rhinoceros as such is that of Drummond (1875) who describes it from Zululand between 1853-55. Between the Umkuzi pass in the Lebombo range and Mbuluzi he encountered more of the black than of the white species.

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Baldwin (1894) records the black species in 1863 in the direction of the Pongola river between the Mkuzi and Pongola rivers. He also met it in fair numbers in the vicinity of St.Lucia Lake.

Sclater (1900) mentions Zululand, whilst Findlay (1903) specifies the vicinity of the Hluhluwe river, the Manzibomvu river and the Hlabisa, N'dwande, Umfolosi and Ubombo areas.

Orange Free State and Lesotho:

No 'on the spot' records of encounters with rhinoceroses could be found. Brand (1964) states that it occurred in this province and was exterminated by about 1853, but no reference to it could be found in any of the works of travellers who visited this area. According to Liebenberg (1964), early travellers such as Smith in 1834 and the French missionaries Arbousset and Daumas who visited the province in 1836, did not encounter rhinoceroses. Liebenberg also quotes Steytler (1932) who contends that since the Orange Free State had few trees, rhinoceroses did not range there. This could be true of the browser D.bicornis , but does not necessarily apply to R.simus.

Whether the rhinoceros ever ranged into Lesotho is uncertain. Smith (Kirby, 1939) who passed through a portion of the country in 1834, does not mention having encountered any.

Transvaal:

As the first pioneers only entered the Transvaal during the years 1834-6, records of game distribution prior to that time are not available. According to Wallis (1945) however, Moffat travelled to Moselekatse at the end of 1829. In his description of this journey and a subsequent one to the same part of the Transvaal, he mentions D.bicornis near the present-day Zeerust and between this town and the Magaliesberg range. Smith (Kirby, 1940) encountered a large number of the black species during 1835 near Zeerust, and also near Swartruggens and in the Rustenburg district. He also mentions the Magaliesberg mountains and the junction of the Marico and Crocodile rivers.

Trigardt, according to Le Roux (1966), frequently mentions rhino in his diary during his stay

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in the Soutpansberg district during 1836-7. Unfortunately he does not distinguish between the two species. He also mentions rhinoceroses in the eastern Transvaal , while on his way to Lourenco Marques.

Wahlberg (Gyldenstolpe, 1934) encountered the black rhino near the Apies river and in the Dwarsberge in northwestern Transvaal in the 1840's.

Methuen (1848) mentions the Marico river. Elton (1871) encountered it more to the north, between the junctions of the Nuanetsi and Olifants rivers with the Limpopo. Van Oordt (1895-7) who was warden of the old Pongola Reserve, lists it in his annual reports.

Bryden (1899) writes that there were still a few in the remotest corners of northeastern Transvaal at that time, including a few in the Matamiri Bush and a few in the Lebombo range near the Olifants River Poort.

Hofmeyr (1890) records unidentified rhinoceroses in 1865 from the Soutpansberg district. Sclater (1900) was of the opinion that at the end of the nineteenth century it was still to be found in the Lydenburg district.

Glynn (1926) mentions shooting the black species on the opposite side of the Crocodile river to where Nelspruit Station is today and also below White River during the period between 1873 and the turn of the century.

Mocambique:

In Portuguese territory south of the Zambezi river and to the east of the Transvaal and Rhodesia, the following records show a fairly wide range in the past:

Livingstone (Schapera, 1963): along the Zambezi in the vicinity of Tete in 1856.

Kirk (1864): along the Zambezi near Sena.

Erskine (1875): between Inhambane and the mouth of the Limpopo (Gazaland).

Vaughan Kirby (1899): near the Chiringoma range and near the Madsumbi and Urema rivers.

Bryden (1899): parts of the Barue country and in Chiringoma.

Sclater (1900): Mocambique.

Maugham (1910): near the Lupata Gorge on the Zambezi.

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Breyer (1915): in Maputaland at the Mandhlene Lake (unidentified species).

Haagner (1920): Portuguese East Africa.

Shortridge (1934): on both sides of the Portuguese border between the Shingwedzi and Limpopo rivers and further as described by Vaughan Kirby (1899) (see above).

From Mocambique to the west coast of South-West Africa across the Caprivi, the range of D.bicornis was continuous. Shortridge (1934) comments: "The Zambezi-Okavango-Cunene regions are the only part of Africa where the Black Rhinoceros was ever known to be distributed across the continent".

Rhodesia:

The following records indicate a wide distribution in Rhodesia in the past:

Livingstone (Schapera, 1963): along the Zambezi river in 1856.

Baines (1864): near the Victoria Falls.

Mauch (Petermann , 1870): between the Umgezi and Little Umgezi rivers in 1868.

Elton (1873): between the Ramaquabane and Satsuki rivers.

Baines (1877): near the junction of the Simbo rivulet and the Umfule river (species unidentified).

Oates (1899): along the Simukwe, Ramaquabane and between the Nata and Tamasanka rivers (unidentified, but doubtless included the black species as well).

Selous (1893): the Hanyami, Umsengaisi, Sabi and Zambezi river vicinities.

Selous (1907): the present Que-Que district; the Umniati vicinity; the Dett area; between the Daka and Thammasetje rivers; between the Gweo river and Inyoga's Town; near the Umbila, Umsengaisi, Umfule, Gwenia and Umzweswe rivers; near the junction of the Umfule and Umniati rivers and near the confluence of the Gwai and Shangani rivers.

Selous (1908): the Dett Valley.

Chubb (1909): his list of the mammals in the Rhodesian Museum includes a specimen from Gwelo.

Shortridge (1934): summarises the past distribution of D.bicornis in Rhodesia as Matabeleland and Mashonaland.

Botswana:

In Botswana D. bicornis was distributed wherever water was available, up to the Zambezi river. Moffat (Wallis, 1945) mentions the area between Kanye and Lithubaruba and also the Mahalapye, Shashi, Ramaquabane, Matlokotlo and Serule rivers in 1829.

Methuen (1848) reports the black rhinoceros near Sichele's Kraal (Molepolole); Cumming (1850) between the Notwani and Marico rivers; McCabe (in Holden ,1855) near Ghanzi; Andersson (1856) records unidentified rhinoceroses at Ghanzi and D. bicornis at Kobi and Lake Ngami; Livingstone (1857) reports it at Kolobeng; Anderson (1888) in the northern and eastern parts of Botswana, especially in the vicinity of the Quito, Chobe, Cubango and Touga rivers ; Noack (1889, in Schinz, 1890); Holub (1890) at the confluence of the Chobe and the Zambezi rivers; Bryden (1893) along the Chobe swamps and the Zambezi river and Baldwin (1894) at Kolobeng.

South West Africa:

The black rhinoceros probably ranged throughout the entire territory, where water was available.

According to Mossop (1935), Jacobus Coetsé Jansz first met with the rhinoceros just north of the Orange river in 1760 as did Van Reenen in 1791, Hop in 1761 and Brink and Rhenius in 1761 (Molsbergen, 1916). No indication of the species is given, but according to later records such as those of Alexander (1838), Andersson (1861) and Shortridge (1934), D.bicornis formerly ranged through Great Namaqualand.

Alexander (1838) records the species in Great Namaqualand near the Chuntop river; at Bull Mouth's Pass and in Damaraland.

Tindall (Tindall, 1959) : between Gobabis and Gibeon and near the Black Nossob during 1839-55.

Andersson (1861 and 1867) : at Omanbonde and in Damaraland.

McKiernan (Serton, 1954): from Omaruru to the Okavango river during 1874-9.

Galton (1853) :Tunobis (Otjimbinde).

According to Noack (1889), Schinz, who collected in Damaraland, Ovamboland and the Kalahari, mentioned both species along the Okavango and Cunene rivers.

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Sclater (1900) gives a probable distribution in Ovamboland at the turn of the century.

According to Shortridge (1934), the black rhinoceros ranged as far south as Great Namaqualand and northwards through Damaraland, the Kaokoveld, Ovamboland and the Caprivi. He quotes Wilhelm (1931) as saying that it had been extinct in the Omaheke and Kaukauveld for at least 50 years, extinct in the Kung-veld and formerly found along the Omarumbas Omatako and Omanbonde.

Shortridge (1942) confirms Alexander's records of both species from the Fish river valley in Great Namaqualand in 1895-6.

Ansell (1967) cites evidence of comparatively recent occurrence in southern South West Africa and of its ranging in all probability, only marginally within the South West Arid zone.

Present distribution:

Cape Province:

By about 1853 the black rhinoceros had become extinct in the entire Cape Province (Shortridge, 1934). According to Bigalke and Bateman (1962), two were re-introduced into the Addo Elephant National Park recently. A further four were added, bringing the total to six (Brand, 1964). These have increased to 8 in 1969 (De Graaff, in litt.).

Natal:

In Natal, and specifically in Zululand, the black rhinoceros fortunately survived in small numbers and has increased considerably. According to Vincent (1962) it is confined to the Mkuzi, Hluhluwe and Umfolozi Game Reserves, but is also found in state-owned lands between the latter two.

Brand (1964) gives the following figures for Natal: Ndumo, 2; Mkuzi, 20; Hluhluwe, 33; Umfolozi, 80, with an annual overall increase of about 20.

According to Bourquin (1966), the black rhinoceros is rare in the Ndumo Game Reserve (7 in 1965); fairly common in the Mkuzi Game Reserve; very common in the Hluhluwe Game Reserve (approx. 300); fairly common in the Umfolozi Game Reserve (60).

Transvaal:

In the entire Transvaal only two captive animals are to be found in the Pretoria Zoological Gard ns (Brand, 1964).

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Mocambique:

In Mocambique Fajardo (1953) records it from the slopes of the Gorongosa Mountain in the Gorongosa National Park.

Sidney (1965) gives its distribution as follows: large numbers in Barue, Gorongosa, Chemba, Morrumbala and Palma; fair numbers in Mopeia, Alto Molucue, Gurue, Ribané, Amaramba and Marrupa; scarce in Mossurize, Buzi, Chimoio, Cheringoma, Concelho de Tete, Macanga, Maravia, Zumbo, Namacurra, Mocuba, Milange, Maganja da Costa, Mogovolas, Mogincual, Erati, Vila Cabral, Maniamba, Montepuez, Macondes, Mocimboa de Praia, Macomia and Quissanga; extinct in Lourenco Marques district, Sul do Save, Sofala, Concelho de Manica, Mutarara, Angonia, Concelho de Chinde, Prebane, Lugela, Ile, Nhamarra, Moma, Concelho de Nampula, Malema, Concelho de Antonio Enes, Meconta, Mossuril, Nacala, Nemba, Mecufi, Concelho de Porto Amelia. She finds it impossible to estimate the number surviving in Mocambique, but mentions a figure of about 500, with the majority occurring in the region between the Save and the Zambezi rivers.

Simon (1966) gives an estimated number of 500 for Mocambique.

Ansell (1967) follows Sidney (1965) when stating that it is still common between the Save and Zambezi rivers but no longer found to the south of the former.

Tinley (inlitt) agrees with the distribution of the black rhinoceros in Mocambique as given by Sidney (1965) but adds that it also occurs on the upper Limpopo near Pafuri and that it is scarce in the north of Gorongosa.

Rhodesia:

In Rhodesia the highest concentration of black rhinoceros a few years ago, according to Fraser (1958), occurred in the Sajarira range of the Sebungwe Native District. Numbers were not known but it was still fairly plentiful. It also occurred along the Zambezi valley in the Urunge Native District in fair numbers and was reported from the Darwin Native District. Two pockets were known in the southern part of Rhodesia, ie. in the Ciepangai valley, Chipinga Native District and also in a confined area north of the Ramisikana river in the Nuanetsi Native District.

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Child and Savory (1964) state that the species is limited to the Zambezi valley, with a relict population in the Sabi valley. The Wankie National Park and the Matopos National Park are both areas where D.bicornis has been re-introduced recently.

According to Sidney (1965) it is still to be found in the Sebungwe Native District between Kariangwe and the Zambezi valley. A few also occur in the Chipinga Native District and probably in the Mtoko Native District along the Mudsi river.

Ansell (1967) quotes Fraser (1958) and Smithers (1966) when stating that fair numbers occur in the Zambezi valley and a few in the southeast and that it was re-introduced to the Wankie National Park.

Simon (1966) estimates that 1500 still occur in Rhodesia.

Botswana:

Kay (1962) records a black rhinoceros on the Mababe Flats in northern Botswana.

Sidney (1965) finds it facing extinction in this territory, probably not more than 20 occurring in the entire Botswana.

Simon (1966) also estimates the number surviving in Botswana as 20.

Child (1968) records a relic population of small numbers in the northeast.

Smithers (1968) estimates the number of black rhinoceros in Botswana at less than 20 . These are found in the area north of Tsotsoroga Pan and include approximately 9 animals occurring to the north-west of the Selinda Spillway. Spoor was recorded on the Chobe river near Kachikau as well as on the north-western border of the Mababe Depression.

South West Africa:

According to Lundholm (1951) there seems to have been an increase in the numbers of the species in the Kaokoveld since it was reported upon by Shortridge (1934). Bigalke (1958) describes it from the Outjo district in the northern part of South West Africa. He states that it ranges throughout the Kaokoveld and occasionally into the Etosha Pan region. No reports of its presence along the Okavango are available, but it has been recorded from the eastern Caprivi.

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Brand (1964) estimates 54 in the Etosha area, 58 in the Kaokoveld and a further 23 on private farms.

Simon (1966) gives an estimate of 280 black rhinoceroses for the entire South West Africa.

Change in distribution:

The black rhinoceros has totally disappeared from the Cape and the Transvaal, except where re-introduced, ie. into the Addo Elephant National Park.

It still occurs in the Zululand Game Reserves of Natal; in Mocambique mainly between the Save and the Zambezi rivers, but extinct in the south; in Rhodesia, apart from re-introduction in certain cases, it only occurs in the Zambezi Valley with a relict population in the Sabi valley; in Botswana it has disappeared from the southern, central and eastern parts, but is still to be found in the north in very limited numbers; in South West Africa it is reported from the northern districts as well as from the eastern Caprivi.

From the above it is clear that black rhino have disappeared from large parts of southern Africa, where large numbers roamed in the past and where a single hunter could shoot more in a year than the total number surviving today.

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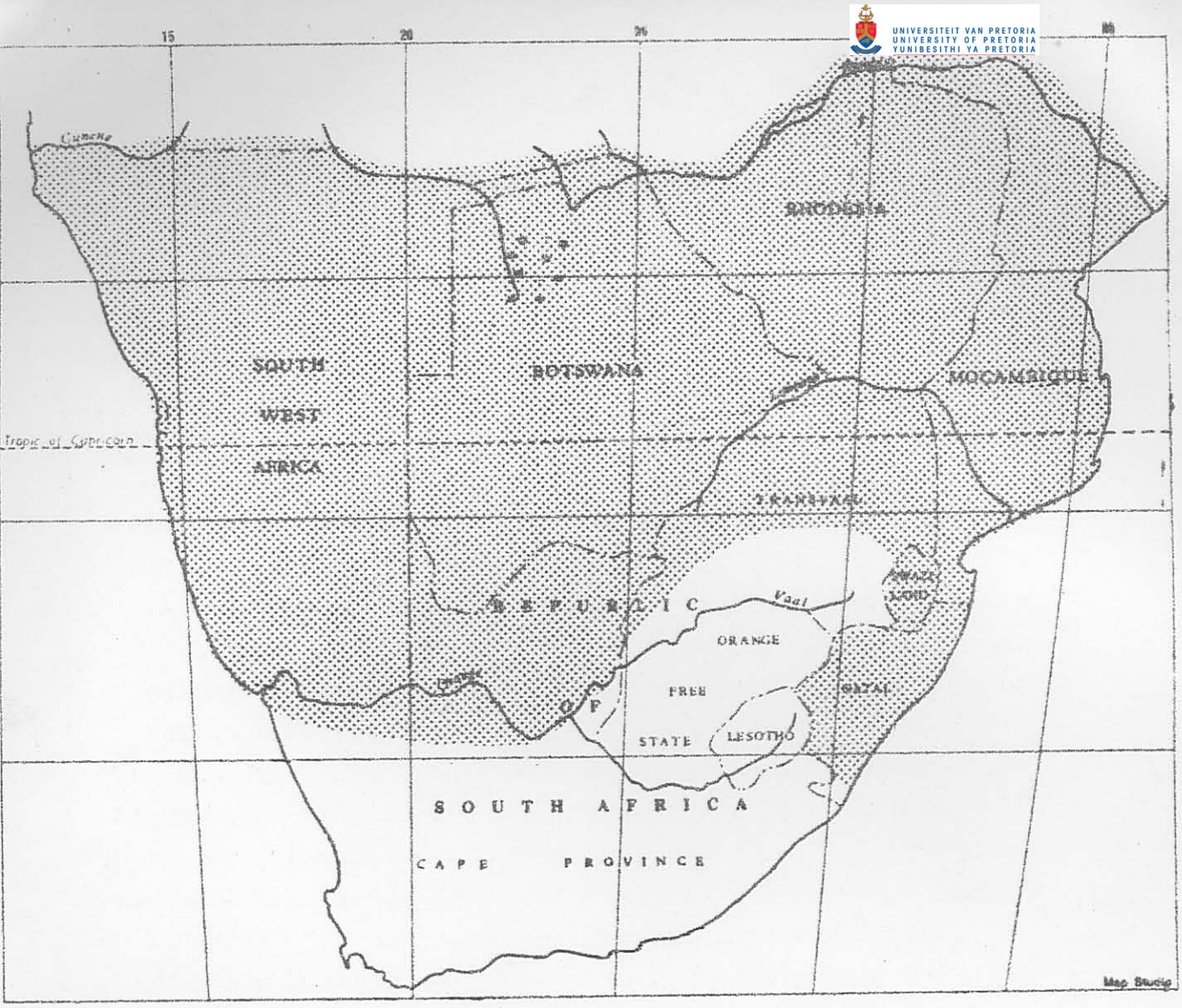
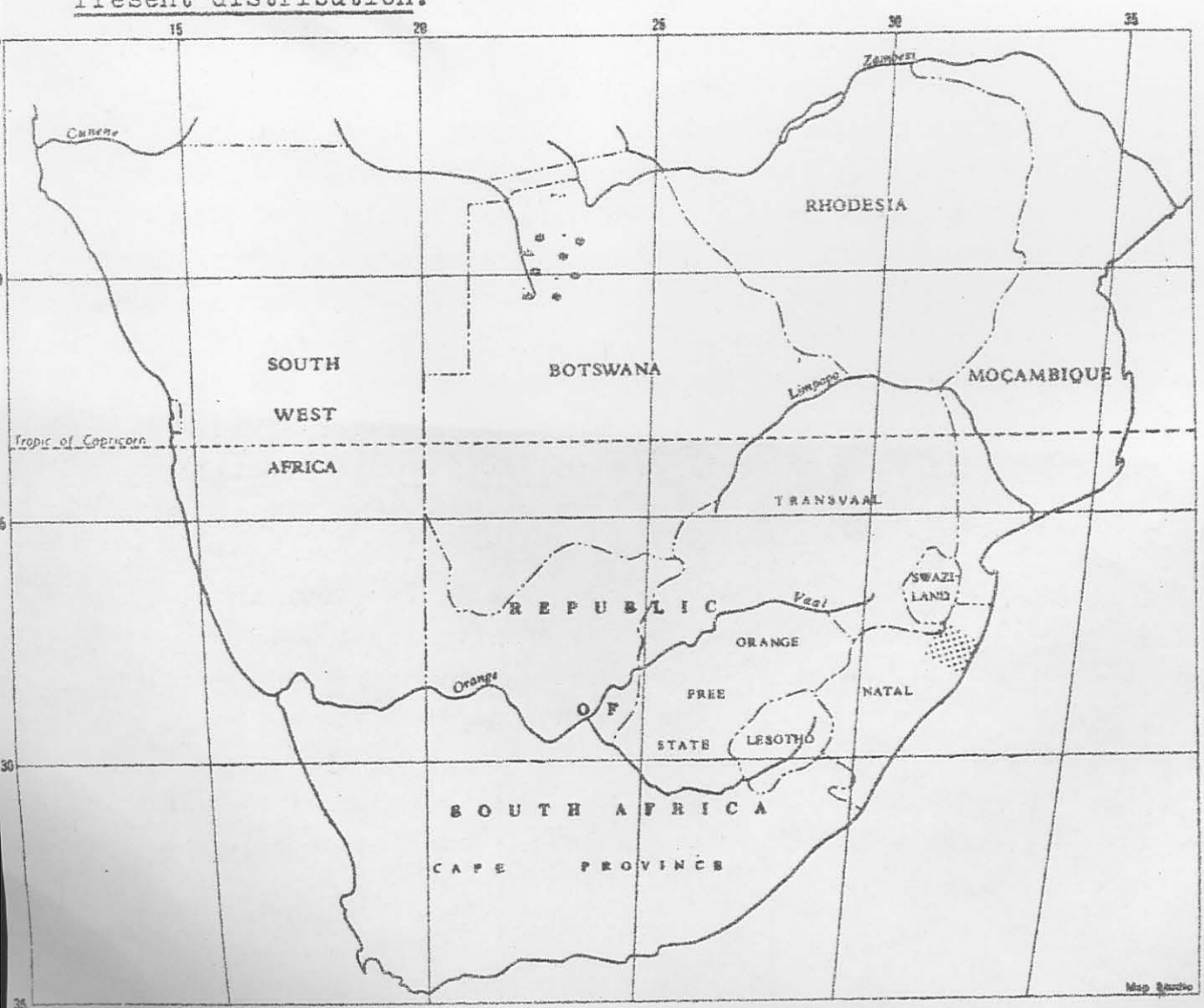


Past distribution:

Present distribution:

Ceratotherium simum (Square-lipped rhinoceros)



Ceratotherium simum (White rhinoceros):

Cape Province:

The question of the occurrence of the white rhinoceros south of the Orange river has never been properly settled and the chances are that it never will be. This species was usually described as being distributed between the Orange river in the south and the 17th degree south latitude in the north, but occasional references exist of its occurrence south of the Orange river in the Cape Province. Most of the early authors who encountered rhinoceroses just south of this river unfortunately seldom specified the species, thereby making it impossible to outline the southern boundary of its distribution with any degree of certainty. The rhinoceroses encountered by Wikar (Mossop, 1935) in 1779 for example, could also have included the square-lipped species, since he describes them just south of the lower Orange river near the present-day Goodhouse and Kakamas, just north of which they are known to have occurred. Although Shortridge (1934) and others contend that the square-lipped rhinoceros did not occur south of the Orange, the possibility cannot be ruled out entirely since the river in itself did not offer a formidable barrier in dry periods.

The unknown author of "Een Generale Beschrÿving van de Colonie De Kaap de Goede Hoop ", 1796-98, (VC. 104, Cape Archives) as a rule gives a very accurate survey of the larger animals of the Cape Colony at that time. His observations and descriptions were correct and corroborated by those of latter authors. One of his statements, however, may have rested on mistaken identity. When he reviews the fauna of the Great, Middle and Little Roggeveld he writes of this area: " Onder anderen is de witte Rhinoceros overvloedig-lijk in , en waarschynlijk eigenäardig aan, dit gedeelte van het land. de zelve verschild in niets van de gemeene twee hoornige Afrikaansche Rhinoceros, als alleen in groote, waar in het dezelve aanmerkelijk overtreft, en in de dunheid en buigzaamheid van het vel".

Barrow (1801) contends that the white rhinoceros was not uncommon beyond the Hantam mountain range on the outskirts of the Cape Colony of that time. He lists the differences between the white and black

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species but does not mention the lip structure. Bigalke (1963) doubts if Barrow's rhinoceros could be definitely identified as the white species since the differences given (colour and thinness of skin) are not recognised criteria of distinction. Carmichael Smythe (1805) compiled a map very similar to that of Barrow and had it printed in 1805 by Arrowsmith. On this he states: "The White Rhinoceros plentiful in this part of the Country .....", and indicates its presence in the present Bushmanland.

Shortridge (1942) does not clarify the issue with the following statement : "Although the Black Rhinoceros (D.bicornis) was always, presumably, more plentiful than Ceratotherium simum south of the Orange River !HĀBA the Hottentot name, still surviving, refers correctly to the white species, in indication of its former occurrence in Little Namaqualand". He also mentions a weathered pair of white rhinoceros horns in the Port Elizabeth Museum, discovered at Seeheim (Great Namaqualand) by G.Wickam in 1919.

In the Cape north of the Orange river, Ceratotherium simum was recorded for the first time by Burchell in 1812 near Kuruman at Chue Spring or Heuningvlei (Burchell, 1822).

Other authors describing its occurrence north of the Orange river in the present-day Cape Province, are:

Campbell (1822): near the present-day Vryburg and near the rivers Mashowing, Molopo and Mareetsane.

Moffat (1829): near the Mareetsane river.

Smith (Kirby, 1940): near the Molopo river and also near the present-day Mafeking.

Smith (1849): in earlier times near Latakoo (the present-day Vryburg).

Bain (Lister, 1949): near Honing-(=Heuning) vlei (Chue Lake = Chue Spring) and Segutshane. He describes the white rhinoceros as follows: "Its nose is broad & flat like that of a Sea Cow ....".

Sclater (1900) and Shortridge (1934): extinct in the northern Cape at the turn of the century.

Natal:

The records of C.simum from Natal indicate that its distribution was probably confined to Zululand.

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Daniell (1804) in his "African Scenery and Animals" includes a drawing of a rhinoceros that resembles the white species. In his description of this animal he mentions that it is a variety of the species usually met with and states that it was very common in all the thickets on the eastern frontier of Natal.

Wahlberg (Gyldenstolpe, 1934) records white rhino from Zululand in 1842.

Drummond (1875) records large numbers from the valley of the White Umfolozi river; the upper Umkusi river; the plains south of Hlopekulu and near the Black Umfolozi river.

Buckley (1876) mentions the Zulu country at about latitude 28°.

Baldwin (1894) specifically mentions the white species as occurring in fairly large numbers along the St.Lucia river and near the Tegwan mountain during the years 1852-60.

Ward (1896): still a few at the confluence of the Black and White Umfolozi rivers.

Bryden (1899): numerous in Zululand in 1871.

Findlay (1903): a small number between the forks of the White and Black Umfolozi rivers.

Selous (1908): approximately half a dozen left in Zululand.

Bryden (1909): a few left in the reed thickets at the junction of the Black and White Umfolozi rivers.

Shortridge (1934): gives the same locality as Bryden, but fixes the number at approximately 50 at that time.

Orange Free State:

No conclusive evidence exists that C.simum ever ranged into the Orange Free State (Bigalke, 1963). Bryden (1899) expresses uncertainty as to whether the first pioneers encountered the white species here, but he was inclined to think that they did since places were shown to him just north of the Vaal river on the grassy plains of southern Transvaal where the species had occurred. He also describes the pasture to the south of the Vaal river as very suitable for this animal and the river as easily fordable at many points during the dry season.

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Transvaal:

The earliest records of the white rhinoceros in the Transvaal are those of:

Moffat (Wallis, 1945): near the present-day town of Zeerust and along the Magaliesberg range between the years 1829-60.

Smith (Kirby, 1940) : in the Magaliesberg range in the present-day Rustenburg and Brits districts and near the confluence of the Marico and Crocodile rivers in the Marico district, during 1834-6.

Wahlberg (Gyldenstolpe, 1934): near the confluence of the Apies and Pienaars rivers.

Harris (1841): very common after passing Kurrichane (present-day Zeerust) along the Magaliesberg range during 1836-7.

Trigardt (Le Roux, 1966) in the Soutpansberg vicinity in 1836-7 and Wangemann (Grosskopf, 1957) in the Lydenburg district in 1866-84. Both unfortunately omit to identify or describe the species they encountered there.

Van Oordt (1894 and 1895): a few occasionally visited the old Pongola Reserve.

Bryden (1899): parts of eastern and south-eastern Transvaal during 1871.

Glynn (1926): low down along the Sabi river on the edge of the Matemere Bush in 1877.

Stevenson Hamilton (1929) states that the white rhinoceros had already disappeared from the Transvaal lowveld between the years 1840 to 1860 as a result of hunting by natives, especially the well-armed hunters of Albasini. Bigalke (1963) however, fixes the date of extinction from the eastern Transvaal lowveld as about 1896.

Mocambique:

In Mocambique the white rhinoceros had a more confined range. Elton (1873), whilst travelling along the right bank of the Limpopo river in 1870, met with both species between the confluences of the Nuanetsi and Olifants rivers with the Limpopo in Mocambique. Bryden (1899) states that it was still to be found in Gazaland at that time, but Maugham (1910) believed it to be extinct in the whole of Mocambique. Sidney (1965) also declares it extinct in the territory, and that it was still hunted near the foothills of the

Gorongosa mountains between Gauveia and Marcorsa in 1935.

Dias (1961) contends that the white rhinoceros was to be found in the vicinity of the Maputo river in Gazaland just north of the Zululand border in the past.

Tinley (1969) writes that the last known occurrence of white rhino is between Gorongosa mountains and Vila Gauveia.

Rhodesia:

The distribution of C.simum in Rhodesia, once widespread, shows a steady decline once the hunters started their activities at about the year 1870. The earliest written records include the following:

Livingstone (Schapera, 1963) andKirk (1864): the species was either extinct or unknown along the Zambezi during the years 1853-1863.

Anderson (1888): from the Zambezi valley and near the northeastern border of Botswana.

Oates (1889): between Panda ma Tenka and the Victoria Falls.

Holub (1890): between Panda ma Tenka and the Victoria Falls.

Selous (1893, 1907 and 1908), who hunted extensively in Rhodesia between the years 1872 and 1896, encountered the square-lipped species mainly in Matabeleland and in Mashonaland, and particularly in the following vicinities: near the Mangwe river; Jomani; in the angle formed by the Gwai and Zambezi rivers about 80 miles from the Victoria Falls; near the Victoria Falls in quite considerable numbers; between the Deka and Thammasetje rivers ; between the Deka and Nata rivers; in the vicinity of the Umniati and Umbila rivers; between the Umfule and Umzweswe rivers; between the Musengezi and Hunyani rivers; near the Angwa river; near the Sewhoiwhoi river and in the Dett Valley where he reports more of the white than of the black species. The wide range of the white rhinoceros can be inferred from the above as well as from the following passage from Selous (1908): "....in the early 'seventies, throughout all the uninhabited portions of the territory now

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known as Southern Rhodesia, rhinoceroses of both the black and the white species were very plentiful".

Millais (1893) in a letter to P.L.Sclater, dated 19th September 1893, writes that he tried to find the white rhino in eastern Mashonaland, but found none except for the tracks and droppings of a few individual animals. According to this letter the natives maintained that the species was still to be found in the vicinity, although very rarely.

Coryndon (1894), travelling from the Zambezi to Salisbury in the middle of the year 1892, saw three of the square-lipped species and travelling from Salisbury to the northeastern part of Mashonaland, encountered two more.

Ward (1896) states that it was virtually extinct in Rhodesia at the time of writing, excepting perhaps in the northeastern part of Mashonaland where one or two may have survived.

Bryden (1899), mainly quoting Selous, states that during 1871-2 the species was still numerous in Matabeleland and Mashonaland. In 1872 they were seen daily between the Gwelo and Umniati rivers. In 1873 they were encountered in fair numbers to the west of the Gwai river and to the south of the mountainous part that stretched eastward from the Victoria Falls to the confluence of the Gwai and Shangani rivers. To the northeast of Matabeleland, between the Sebakwe and Manyami rivers, they were still fairly numerous in 1878, but diminished greatly in numbers after 1880. Between 1880 and 1884 they decreased to such an extent that only a few were left between the Manyami and the lower Umfule rivers. By 1895, with the exception of a few in northern Mashonaland, Bryden believed the white rhinoceros to be extinct in South Africa. This was virtually true, but fortunately a few also survived in Zululand that he did not know of.

Capell (1901-42) in his shooting diary, records that in July 1928 he followed up a report of a white rhinoceros on a farm in the Sinoia district and of one near the Miami river, but he does not confirm that he found either of the two.

According to Bryden (1909), possibly half a dozen may have survived in the far corner of north-eastern Mashonaland until the time of his writing, whilst Shortridge (1934) quotes Flemming to the effect that

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seven were seen along the Rhodesia-Mocambique border near Nuanetsi in 1931.

Botswana:

In the present-day Botswana data on the past distribution of C.simum is derived largely from hunting journals and the works of missionaries. Among the earliest are those of:

Bain (Lister, 1949): between Gaberones and Molepolole and in the Taung vicinity between 1816 and 1864.

Moffat (Wallis, 1945): near Kanye and in the vicinity of the Shashi, Ramaquabane and Matlokotlo rivers in 1829.

Methuen (1848): near the Notwani river and on the left bank of the Marico river.

Cumming (1850): near the Notwani and Marico rivers as well as on the left bank of the Limpopo river at about 23° south latitude.

Livingstone (1857): at Lake Ngami and near the Chobe marshes.

Baines(Wallis, 1941): the Lake Ngami and Ghanzi vicinities in 1820.

Wahlberg (Gyldenstolpe, 1934): on the Mabebe Flats in 1854-5.

Baines (1864): between Ghanzi and Lake Ngami.

Leyland (1866): at Nchokotsa near the Zouga river.

Selous (1881): 20 years previous to writing very common in the western parts of southern Africa, but at the time of writing practically exterminated excepting possibly between the Okavango and the Cunene rivers. In 1874 fairly plentiful south of Linyanti along the Chobe river, but in 1877 the tracks of only two rhino were seen.

Noack (1889): quoting Schinz, mentions large numbers near Lake Ngami and in the vicinity of the Okavango and Cunene rivers.

Bryden (1893): occurred earlier on in Ngamiland and the northern Kalahari, but extinct there at the time of writing.

Baldwin (1894): near Kolobeng and along the Tamashaki and Zouga rivers.

Schultz and Hammar (1897): the tracks of a single white rhino found where the Sunta joins the Chobe river.

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Bryden (1899): numerous during the years 1840-50 to the north and west of the Limpopo river between Sechele's country and Lake Ngami; large numbers were killed by Cumming, Oswell, Vardon and Andersson in this area. During 1874 it was fairly common along the south bank of the Chobe river, but extinct a few years later.

South West Africa:

Although reports of rhinoceroses in South West Africa date back to 1760, the early travellers were not aware of the differences between the two species since they were neither trained zoologists nor hunters, but soldiers or officials of the Dutch East India Company sent out to try and improve trade with the indigenous populations.

Brink and Rhenius (Mossop, 1947) mention unspecified rhinoceroses in Great Namaqualand after crossing the Orange river. Coetsé (Mossop, 1935) and Hop (Molsbergen, 1916) report the rhinoceros from the same area in 1760 and 1761 as do Van Reenen and Pienaar (Theale, 1964) east of Walvis Bay.

Duminy (Franken, 1938) who visited Walvis Bay in 1793, found large numbers of rhinoceroses in the vicinity. Van Reenen who accompanied Duminy, probably exaggerated when he wrote : "....three hundred or more rhinoceroses.....in a ..... fertile valley....".

Meester (unpublished manuscript) contends that Le Vaillant (1796), after crossing the Orange river, presumably did not encounter the white rhino on his travels but only the black species which he illustrated.

Some of the rhinoceroses encountered were probably square-lipped since later records from the same areas refer to this species. The first definite reports of the white rhinoceros are probably those of Alexander (1838), Andersson (Wallis, 1936), Galton (1853), Andersson (1856), Anderson (1888) and Andersson (undated manuscript). They distinguished between the black and white species and recorded C. simum from the following areas:

Alexander (1838): near a hot spring shown on the map of Chapman (1852) near Windhoek; along the upper Kuiseb and the upper Fish rivers.

Andersson (1856): at Elephant Fountain

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(present-day Gobabis) where he shot eight rhino in five hours; among these he mentions three distinct "species" since he recognised two black and two white.

Anderson (1888): between Barmen and Eikhams in the Windhoek district.

Andersson (Wallis, 1936): near Sandfontein between Twass and Elephants Kloof on the South West/Botswana border.

Andersson (undated manuscript, probably written just prior to his death): among the mammals indigenous to Damaraland and adjacent territories he mentions two black and two white "species", ie. R.bicornis and R.keitloa (both black), and R.simus and R.oswelli (both white).

Tindall (Tindall, 1959): mentions unidentified rhinoceroses in Damaraland between the years 1839-55.

According to Shortridge (1934) the fact that the Nama Hottentots and local Bushmen have names for the two species of rhino proves that both occurred in the Namaqualand, Gobabis and Grootfontein districts in the past, as well as elsewhere in the more level parts of the country.

Brand (1964) quotes Shortridge as above and also Wilhelm (1933), who states that this species ranged on both sides of the Okavango until its extinction in 1870.

Ansell (1967) quotes Shortridge (1934).

Present distribution:

Cape Province:

Extinct.

Natal:

Knobel (1958): not more than 300 in the Natal Game Reserves.

Vincent (1962): confined to the Hluhluwe and Umfolozi Game Reserves in Zululand.

Brand(1964): discussing the present distribution and numerical status, recalls that in 1920 there were only about 20 in the Umfolozi Game Reserve. These increased to 200 by 1933 according to the annual report of the Parks Board of Natal for 1933.

This increase was maintained and in 1964 there were about 1000 in different parts of the world. Of these, the following numbers occurred in the Natal Game Reserves: Ndumu, 18; Hluhluwe, 3; Corridor, 40; Umfolozi, 730; Crown lands adjoining Umfolozi, 40; total for Natal, 881 plus an annual estimated increase of 81.

Bourquin (1966): introduced into the Ndumu Reserve in 1965; very rare in Mkuzi; about 75 in Hluhluwe and large numbers in the Umfolozi Reserve.

Simon (1966): approximately 800 in Zululand; 150 have been re-introduced into other National Parks and Reserves in Southern Africa.

Ansell (1967): quotes an approximate number of between five and six hundred in Zululand as given by Player and Feely (1960).

Transvaal:

Pienaar (1963): four were re-introduced into the Kruger National Park from the Umfolozi Game Reserve in 1961 with a further two added in 1962.

Brand (1964): 10 in the Loskop Dam Nature Reserve; four in the Krugersdorp Nature Reserve; three in the Pretoria Zoo.

De Graaff (in litt.): between 130-135 in the Kruger National Park in 1969.

Orange Free State:

Brand (1964): four introduced into the Willem Pretorius Nature Reserve. In 1968 the number of rhino in this Reserve has increased to 14.

Mocambique:

Dias (1961): extinct.

Sidney (1965): extinct, the last white rhino probably shot in 1935 in the foothills of the Gorongosa mountains.

Tinley (in litt.): extinct.

Rhodesia:

Fraser (1958): expresses the hope that it may still be found in the unexplored country between the Chewore and Angwa rivers in the Zambezi valley.

Child and Savory (1964): state that eight were re-introduced into Rhodesia from Zululand in 1962, four of these into the Matopos National Park and four into the Kyle Dam Game Reserve.

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Botswana:

Smithers (1968): "With the introduction of the species to the Wankie National Park, Rhodesia, individuals have wandered westwards over the Botswana border, two to west of Nata (1966). Further wanderers may be expected and, in time, the species might well become feral ".

South West Africa:

Bigalke (1958): does not occur in South West Africa any more.

Sidney (1965): quoting Bigalke, says that none are left in South West Africa but also mentions that Barnard (1952) alleges that it was encountered between Otjikuvare and Otjovathandu .

Ansell (1967): no confirmation of Barnard's claim from the Kaokoveld.

Change in distribution:

When comparing the past and present distribution of C.simum , a marked change in range as well as in numbers is evident.

It prefers a habitat with suitable short grass and a continuous water supply, combined with a certain amount of bush cover for resting and protection. In the past, such areas have included the northern Cape Province; Zululand; southern Mocambique; the northwestern, eastern and southeastern Transvaal; eastern, northeastern, northern and western Botswana; Mashonaland and Matabeleland in Rhodesia and practically the whole of South West Africa where suitable conditions prevailed. Ansell (1967), quotes Player and Feely (1960) as saying that all available evidence pointed to an original distribution in southern Africa corresponding to the "Bushveld" of Acocks (1953) and Wellington (1956).

Its numbers probably ran into hundreds of thousands. This figure may appear to be somewhat high, but Selous (1908) writes as follows:" In Southern Africa the black as well as the white rhinoceros has been almost absolutely exterminated during the last sixty years. During that period, thousands upon thousands of these animals have been killed, ..." Selous also recalls the five hunting expeditions made by Oswell between the years 1844 and 1853. During these he shot great numbers of both the black and white species.

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A sudden demand for rhinoceros horn about 1880, probably for its reputed aphrodisiac properties, caused a serious reduction in the numbers of these animals. Selous (1908) writes: "But whatever was the cause of it, this sudden rise in the value of small rhinoceros horns sounded the death-knell of these creatures in the interior of South Africa. By the year 1880, ivory had become very scarce in that portion of the continent, and the traders in Matabeleland then for the first time began to employ native hunters to shoot rhinoceroses for the sake of their horns - no matter of what length - and their hides , which later were made into waggon whips and sjamboks. One trader alone told me that he had supplied four hundred Matabele hunters with guns and ammunition, and between 1880 and 1884 his large store always contained great piles of rhinoceros horns - of all sorts and sizes, often the spoils of over a hundred of these animals at one time, although they were constantly being sold to other traders, and carried south to Kimberley on their way to Europe ".

Simon (1966) finds four reasons for the decline in numbers of the white rhinoceros: "..it was easy to approach and kill, the flesh was highly esteemed for its tastiness, the skin was prized for the making of whips and the horns were of value overseas".

So great was the slaughter that at present it numbers a meager thousand after nearly forty years of rigid conservation. Its range too, has drastically decreased, with Zululand the last natural stronghold. Commendable efforts to re-establish it in regions long lost are however under way.

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Past distribution:

Equus quagga (Extinct quagga)

Present distribution: