



South African
Red Data Book
- Reptiles and Amphibians

G R McLachlan

A report of the Committee for Terrestrial Biology
National Programme for Environmental Sciences

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PREFACE

The National Programme for Environmental Sciences is one of several cooperative scientific programmes administered by the CSIR. It is a cooperative undertaking of scientists and scientific institutions in South Africa concerned with research related to environmental problems. The programme includes research designed to meet purely local needs as well as projects being undertaken in South Africa as contributions to international scientific activities.

The increasing threat to indigenous animal and plant species in South Africa posed by development pressure, by changing vegetation patterns, by habitat destruction, by the invasion of alien species and by commercial exploitation is an environmental problem of enormous magnitude. Steps have therefore been taken within the national programme to collect information relating to threatened species, to promote research into their biology and to assist in finding means for their conservation. The South African Red Data Book series is an attempt to collate available information on threatened species and is a part of this programme.

Four Red Data Books, on birds, small mammals, fishes and large mammals have been published in this series.

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I should also like to thank the Directors of Nature Conservation in the Transvaal, Natal and Orange Free State for copies of their ordinances relating to the protection of reptiles and amphibians.

TITLES IN THIS SERIES

1. *A description of the Savanna Ecosystem Project, Nylsvley, South Africa. December 1975. 24 pp.
2. *Sensitivity analysis of a simple linear model of a savanna ecosystem at Nylsvley. W M Getz and A M Starfield. December 1975. 18 pp.
3. *Savanna Ecosystem Project - Progress report 1974/1975. S M Hirst. December 1975. 27 pp.
4. Solid wastes research in South Africa. R G Noble. June 1976. 13 pp.
5. *Bibliography on marine pollution in South Africa. D A Darracott and C E Cloete. June 1976. 131 pp.
6. *Recycling and disposal of plastics waste in South Africa. R H Nurse, N C Symington, G R de V Brooks and L J Heyl. June 1976. 35 pp.
7. South African Red Data Book - Aves. W R Siegfried, P G H Frost, J Cooper and A C Kemp. June 1976. 108 pp.
8. South African marine pollution survey report 1974-1975. C E Cloete and W D Oliff (editors). September 1976. 60 pp.
9. Modelling of the flow of stable air over a complex region. M T Scholtz and C J Brouckaert. September 1976. 42 pp.
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11. South African Red Data Book - Small mammals. J A J Meester. November 1976. 59 pp.
12. Savanna Ecosystem Project - Progress report 1975/1976. B J Huntley. March 1977. 41 pp.
13. Disposal and recovery of waste paper in South Africa. G R de V Brooks. April 1977. 35 pp.
14. South African Red Data Book - Fishes. P H Skelton. July 1977. 39 pp.
15. A checklist of the birds of the Nylsvley Nature Reserve. W R Tarboton. September 1977. 14 pp.
16. Grondsoorte van die Nylsvley-natuurreservaat. H J von M Harmse. September 1977. 64 pp.
17. Description and manual for the use of DRIVER - an interactive modelling aid. P R Furniss. September 1977. 23 pp.
18. South African Red Data Book - Large mammals. J D Skinner, N Fairall and J du P Bothma. November 1977. 29 pp.
19. Introducing you to satellite operated Data Collection Platforms (DCP's). C C Stavropoulos. September 1977. 9 pp.
20. A phytosociological classification of the Nylsvley Nature Reserve. B J Coetzee, F van der Meulen, S Zwanziger, P Gonsalves and P J Weisser. December 1977. 31 pp.
21. An annotated checklist of the amphibians, reptiles and mammals of the Nylsvley Nature Reserve. N H G Jacobsen. December 1977. 65 pp.
22. Cooperative National Oceanographic Programme. SANCOR. January 1978. 19 pp.
23. South African Red Data Book - Reptiles and amphibians. G R McLachlan. February 1978. 53 pp.

* Out of print.

ABSTRACT

Data sheets are provided for 46 threatened South African reptiles and amphibians, two being endangered (leatherback turtle, geometric tortoise), ten vulnerable (loggerhead turtle, Nile crocodile, veld monitor, water monitor, giant girdled lizard, armadillo lizard, dwarf chameleon, African python, Gaboon adder, rain frog), 21 rare, 12 rare (peripheral) and one of unknown status.

SAMEVATTING

Datavelle word voorsien vir 46 bedreigde Suid-Afrikaanse reptiele en amfibieë, twee in gevaar (leerrugseeskilpad, geometriese skilpad), tien kwesbaar (Caretta seeskilpad, Nylkrokodil, veldlikkewaan, waterlikkewaan, ouvolk, armadillo gordelakkedis, dwergverkleurmannetjie, gewone luislang, Gaboenadder, blaasop), 21 seldsaam, 12 seldsaam (periferies) en een van onbekende status.

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INTRODUCTION

Of all the vertebrate groups, the reptiles and amphibians have probably fared best at the hand of man. Even when persecuted they have managed to survive, partly because of their generally small size combined with nocturnal or burrowing habits and the fact that they remain hidden for long periods when not actively feeding. The puffadder, for example, in spite of 300 years of merciless persecution in and around Cape Town may still be found on Table Mountain and in the outer suburbs.

In the case of amphibians, man's works may very often prove beneficial - the watering of suburban gardens, the construction of fish ponds, innumerable small dams, drinking troughs and windmills all create permanently damp areas in a country noted for droughts and seasonal dry periods either in winter or summer.

Lizards may also have benefited from man's activities. The small chameleons of the genus *Bradypodion* are very common in suburban gardens in Cape Town and 20 to 30 may often be found in quite modest gardens. Several geckoes, notably *Phyllodactylus porphyreus*, *Pachydactylus bibronii* and *Afroedura pondolia*, have moved into human habitations where they thrive on insects attracted by the lights at night.

The lists of threatened animals is based on the current status of the animals in the Republics of South Africa and Transkei and their territorial waters and the Kingdoms of Lesotho and Swaziland. The status of a species outside South Africa has not influenced the decision for its inclusion. Thus several species may only just enter our area in Zululand or the Richtersveld while being common just across the border. They are nevertheless included as peripheral.

This list of threatened species must be regarded as a provisional one and is intended as a foundation upon which to base future lists.

Our ignorance of the distribution and status of many of our reptiles, particularly montane and burrowing lizards means that several species are included which are known from only one, two or a few specimens. Examples are *Phyllodactylus microlepidotus*, *Scelotes kasneri* and *Lacerta australis*. These species are probably not as rare as this suggests - we simply do not know enough about them.

In keeping with IUCN policy, subspecies have not been considered; the status of the species as a whole being the prime consideration. For example *Cacosternum capense* is included as rare, but if it is considered to be a subspecies of *C namaquense* it would be omitted.

Only two species out of the 46 listed are considered endangered - the leatherback turtle which is endangered all over the world and the geometric tortoise which is endemic to the south-western Cape.

PROTECTIVE LEGISLATION

Legislation protecting reptiles and amphibians varies in each Province and may be summarized as follows -

Cape Province

All lizards, frogs, toads, tortoises and snakes of the families Typhlopidae Leptotyphlopidae and Colubrinae, are protected animals and may not be hunted or kept in captivity without a permit. The geometric tortoise is considered endangered and no permits would thus be issued for the hunting or keeping in captivity of this species. *Xenopus gilli*, *Microbatrachella capensis* and *Cacosternum capense* are also regarded as endangered but not by the IUCN who regard the first as rare. Poisonous snakes of the families Elapidae and Viperidae may be killed but not kept in captivity without a permit. However, this is partly to protect the public not the snakes.

Natal

In Natal the following are protected reptiles -

Nile monitor lizard	<i>Varanus niloticus</i>
Tree monitor lizard	<i>Varanus albigularis</i>
Nile crocodile	<i>Crocodylus niloticus</i>
Python	<i>Python sebae</i>
Brown house snake	<i>Boaedon fuliginosus</i>
Gaboon adder	<i>Bitis gabonica</i>
All tortoises	fam Testudinidae
All terrapins	fam Pelomedusidae

This means that no person shall kill or capture any of the above animals nor take their eggs. However, the owner or occupier of land may kill any monitor or python causing damage to poultry. Furthermore, the owner or occupier may shoot any crocodile on his own property, which is either known to be or suspected of being a danger to humans or domestic animals.

Amphibians are not protected in Natal.

Orange Free State

All land tortoises, fam Testudinidae, chameleons and the ouvolk, *Cordylus giganteus*, are classified as protected game. No snakes (except the python) nor amphibians therefore enjoy protection in the Orange Free State.

Transvaal

Four lizards are listed as protected game in the Transvaal -

Giant girdled lizard	<i>Cordylus giganteus</i>
Giant rock lizard	<i>Gerrhosaurus validus</i>
Giant rock lizard	<i>Gerrhosaurus major grandis</i>
Dwarf or bearded chameleon	<i>Microsaura ventralis</i>

All species of land tortoise are protected game. This implies that none of the above reptiles may be hunted. A permit may however be issued to hunt them for scientific or educational purposes. They may only be held in captivity under authority of a permit from the Provincial Administration.

In addition the following species may only be kept in captivity under authority of a permit but may be hunted -

Crocodile	<i>Crocodylus niloticus</i>
Rock leguan	<i>Varanus albigularis</i>
Water leguan	<i>Varanus niloticus</i>
Python	<i>Python sebae</i>

No wild animal may be removed from the Transvaal without a permit - this includes all reptiles and amphibians. Amphibians do not enjoy any other protection in the Transvaal.

DEFINITIONS OF CATEGORIES

Threatened

Taxa included in the categories endangered, vulnerable and rare as defined below.

Endangered

Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating. Included are taxa whose numbers have been reduced to a critical level or whose habitats have been so drastically reduced that they are deemed to be in immediate danger of extinction.

Vulnerable

Taxa believed likely to move into the endangered category in the near future if the causal factors continue operating. Included are taxa of which most or all the populations are decreasing because of over-exploitation, extensive destruction of habitat or other environmental disturbance; taxa with population that have been seriously depleted and whose ultimate security is not yet assured; and taxa with populations that are still abundant but are under threat from serious adverse factors throughout their range.

Rare

Taxa with small populations that are not at present endangered or vulnerable, but are at risk. These taxa are usually localized within restricted geographical areas or habitats or are thinly scattered over a more extensive range. They may be reproductively isolated, or they may be relict forms with a wide distribution. They may also be forms seldom recorded but which may be commoner than supposed although there is reasonably good evidence that their numbers are low.

Peripheral

Taxa, often with wide distributions elsewhere in Africa, but having very restricted populations in the survey area.

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* Asterisk indicates endemic species. Scientific and common names are based on Hughes (1974), FitzSimons (1943, 1962), Poynton (1964) and Wager (1965) with various additions and amendments.

GEOMETRIC TORTOISE

Psemmobates geometricus (Linnaeus, 1758)

Order TESTUDINES Family TESTUDINIDAE

Distinguishing characteristics: An attractive "starred" tortoise. Lacks buttock tubercles; forelimb covered anteriorly with a few large scales separated by smaller scales.

Present distribution: From the Strand and Somerset West to Elandsbaai, inland to Porterville, Tulbagh and Worcester.

Former distribution: General area the same as above but vast areas of the habitat have been ploughed up or covered by towns and suburbs. In the wild it is now restricted to a few areas near Stellenbosch, Paarl, Tulbagh, Gouda and Worcester.

Status: Endangered.
One of the rarest tortoises in the world today.

Estimated numbers: About 2 000 are known in four reserves and unknown numbers occur in the wild (Greig pers comm).

Breeding rate in wild: Probably lays several clutches of two eggs (occasionally three, see below), per season; hatchlings found in early May (Rau pers comm).

Reasons for decline: The major reason is undoubtedly the ploughing up of the habitat for wheat and wine farming. The species unfortunately likes low-lying, fairly level ground which is also naturally in demand for farming and housing schemes. It does not appear to be able to return to country which has been ploughed up and later left fallow. It seems to require *Restio* and *Crassula* plants (Rau 1969). In Malmesbury district almost the entire countryside is under vines and cereals leaving no verges where the species might survive.

Protective measures already taken: The species is specially protected under the Cape Provincial Ordinance. Three reserves have been created, two of about 25 ha and one of 8 ha. These contain respectively 100, 30 and 80 tortoises. In addition, a private reserve of some 2 600 ha was created in 1973 near Gouda containing at least 1 500 tortoises (Greig pers comm).

Measures proposed: Another large state or provincial-owned reserve in a different area from the above reserves is desirable.

Number in captivity: Three known in private gardens.

Breeding potential in captivity: One in captivity known to lay three eggs. Potential reasonable.

Remarks: The entire range of this species will soon be covered by towns and intensive farming so that the whole future of the species relies on suitable reserves. It does not occur in any known reserve apart from those specifically created for it.

OLIVE RIDLEY TURTLE

Lepidochelys olivacea (Eschscholtz, 1829)

Order TESTUDINES Family CHELONIIDAE

Distinguishing characteristics: Grey colour and numerous costal shields (7 to 9).

Present distribution: Pan-tropical, nests in Mexico, Costa Rica, northern Australia, Malaysia, northern Mozambique, Angola, Surinam, West Africa.

Former distribution: As above but numbers are declining.

Status: Rare (peripheral).
Only two nesting records from South Africa (Hughes pers comm).

Estimated numbers: Not known.

Breeding rate in wild: Not known. Lays about 100 large eggs in Australia (Cogger 1975).

Reasons for decline: Probably exploitation by man; catching in prawn trawls.

Protective measures already taken: Protected in Natal.

Measures proposed: Continued protection.

Number in captivity: One in the Durban Aquarium (Hughes pers comm).

Breeding potential in captivity: Unknown.

Remarks: A rare nester but not uncommon off Natal coast (Hughes pers comm).

LOGGERHEAD TURTLE

Caretta caretta (Linnaeus, 1758)

Order TESTUDINES

Family CHELONIIDAE

Distinguishing characteristics: Noted for its enormous head; five pairs of costal shields.

Present distribution: Widespread in the Atlantic, Indian and Pacific Oceans. Known to nest in Florida, Australia, Ceylon, Tongaland, South America, Madagascar, West Africa, etc.

Former distribution: Not known to differ from the above, but numbers are declining at many rookeries.

Status: Vulnerable.

Estimated numbers: Less than 2 000 clutches are laid on the Tongaland coast indicating about 500 females laying per year (4 clutches each per annum).

Breeding rate in wild: On the Zululand coast about 160 000 hatchlings are produced per year (Hughes 1974).

Reasons for decline: Exploitation by man and interference with breeding sites by coastal development, erection of street lights, etc. The use of seine nets is also causing damage to turtle populations (Hughes pers comm).

Protective measures already taken: Protected in Natal.

Measures proposed: Research into raising young to breeding age. Nesting grounds should be proclaimed a national park or marine reserve.

Number in captivity: Most aquaria and coastal zoos have specimens.

Breeding potential in captivity: Probably good with correct facilities; hatchlings have been reared. Adults do well in captivity.

Remarks: None.

LEATHERBACK TURTLE

Dermochelys coriacea (Linnaeus, 1766)

Order TESTUDINES

Family DERMOCHELYIDAE

Distinguishing characteristics: The shell lacks the usual horny shields, instead it is covered with blackish horny skin and has seven longitudinal ridges on the carapace. Both shell and the rest of the body have white or whitish spots and markings increasing in number towards the ventrum.

Present distribution: Throughout the oceans of the world; nesting in central America, the West Indies, Australia, Ceylon, Malaya and in our area in Tongaland.

Former distribution: Similar to above but the species has become dangerously depleted in numbers and doubtless some colonies have become wiped out.

Status: Endangered.

Estimated numbers: Estimates (Hughes 1974) indicate that about 50 laying females visit our coast annually.

Breeding rate in wild: A maximum of 1 000 eggs are produced seasonally per animal suggesting a minimal life production of 3 000 eggs (Hughes 1974).

Reasons for decline: Over-exploitation by man.

Protective measures already taken: Protected in Natal.

Measures proposed: Tongaland nesting grounds should be made a national park or marine reserve.

Number in captivity: Seems to be impossible to keep wild caught adults. A few hatchlings are held in aquaria.

Breeding potential in captivity: Hatchlings have been reared to a weight of 16 kg in eight months on a diet of jellyfish. Whether these can be raised to breeding age is not known (Foster and Chapman 1975).

Remarks: Research on the feasibility of rearing young to breeding age is required.

NILE CROCODILE

Crocodylus niloticus Laurentus, 1768

Order CROCODILIA Family CROCODYLIDAE

Distinguishing characteristics: The only crocodile in our area, a large fairly broad-snouted species.

Present distribution: Widespread in Transvaal but mainly in the Limpopo River, Kruger National Park and Zululand.

Former distribution: Formerly found throughout the Transvaal except the highveld and extended down the east coast to the Mncwassa River in Elliotdale district and possibly as far as the Great Fish River.

Status: Vulnerable.

Estimated numbers: Not known.

Breeding rate in wild: About 40 to 80 eggs (average 45) are laid which hatch after 90 days.

Reasons for decline: Trapped by witchdoctors; habitat destruction and competition with man in recreational areas such as St Lucia. Persecution because of the threat to stock and humans. Also exploitation for skins (Pooley pers comm).

Protective measures already taken: In Natal crocodiles are protected but the landowner may destroy any individual on his own land which is a danger to humans or stock. In the Transvaal they may be hunted but may be kept in captivity only under authority of a permit.

Measures proposed: Increased protection in Transvaal. Higher fines for illegal hunting (Pooley pers comm).

Number in captivity: Most zoos have odd non-breeding exhibits.

Breeding potential in captivity: Good in semi-captivity in suitable areas. Numbers can be greatly increased by rearing wild-laid eggs.

Remarks: Requires more protection outside the game reserves. Farming for the skins could be encouraged. In no danger; common in the Kruger Park and Zululand reserves. Efforts should be made to introduce uniform protective legislation in Botswana, South West Africa, Transvaal, Mozambique, Natal and Swaziland (Pooley pers comm).

WEB-FOOTED GECKO

Palmatogecko rangei Andersson, 1908

Order SQUAMATA Family GEKKONIDAE

Distinguishing characteristics: The webbed feet and hands are distinctive.

Present distribution: From the Richtersveld to Angola.

Former distribution: Unlikely to have differed from above.

Status: Rare (peripheral).
Only just enters our area in the western Richtersveld.

Estimated numbers: No estimates but quite common on suitable dunes.

Breeding rate in wild: Eggs are developed in pairs during the period November to May.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: A few individuals.

Breeding potential in captivity: Poor.

Remarks: This species is in no danger as it occurs over a wide area in most inhospitable country.

SPOTTED PHELSUMA

Phelsuma ocellata (Boulenger, 1885)

Order SQUAMATA

Family GEKKONIDAE

Distinguishing characteristics: A small gecko with innermost digit rudimentary; distalmost transverse adhesive lamella undivided; nostril not tubular; blackish with white spots on back, limbs and tail.

Present distribution: Known only from the area of Little Namaqualand bounded by Steinkopf, Port Nolloth, Kleinsee and Kamieskroon; also from the south-western corner of South West Africa.

Former distribution: Not known but probably the same.

Status: Rare, distribution limited.

Estimated numbers: No data.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Not known, potentially reasonable.

Remarks: Due to its remote habitat appears to be in no danger except from diamond mining to a very limited extent.

SMALL-SCALED LEAFTOED GECKO (SMITHERS'S GECKO)

Phyllodaactylus microlepidotus FitzSimons, 1939

Order SQUAMATA

Family GEKKONIDAE

Distinguishing characteristics: A much larger, more robust species than the common *P lineatus*; no enlarged chin shields.

Present distribution: Known from two specimens only; one from Pakhuis Pass and one from the Cedarberg without further details. Recent collecting at Pakhuis Pass has not revealed any more specimens although *P lineatus* is very common.

Former distribution: Unlikely to have differed from above.

Status: Rare.
Only two known.

Estimated numbers: Not known.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Not known.

Remarks: This species may occupy high levels in the Cedarberg; only further collecting will establish its true status.

PERINGUEY'S LEAFTOED GECKO

Phyllodactylus peringueyi Boulenger, 1910

Order SQUAMATA

Family GEKKONIDAE

Distinguishing characteristics: A small species; the only local *Phyllodactylus* heavily tuberculated dorsally.

Present distribution: Known only from two specimens in the South African Museum. One from Port Elizabeth, the other from Namaqualand. The latter is probably incorrect as the specimen is one of many labelled "Namaqualand", quite a few of which are species not known from Namaqualand. It has been suggested that the species is American but according to Dixon (pers comm) it is not a western species. Subsequent collecting at Port Elizabeth has produced no specimens.

Former distribution: Not known.

Status: Unknown.

Estimated numbers: Not known.

Breeding rate in wild: Not known.

Reasons for decline: Not known.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Not known.

Remarks: Only further material will reveal the true provenance of this species and its status.

BOUTON'S SNAKE-EYED SKINK

Cryptoblepharus boutonii (Desjardin, 1831)

Order SQUAMATA

Family SCINCIDAE

Distinguishing characteristics: A small skink which lacks movable eye-lids.

Present distribution: Australia, Asia and a vast number of oceanic islands. Just enters our area in coastal Natal, as far south as Black Rock, living on rocky shores and feeding between the tide levels.

Former distribution: Presumably the same.

Status: Rare (peripheral).

Estimated numbers: Not known.

Breeding rate in wild: Two eggs are laid at a time.

Reasons for decline: No decline indicated.

Protective measures already taken: None.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Good; a very adaptable animal.

Remarks: In no danger due to its widespread distribution elsewhere.

KASNER'S BURROWING SKINK

Scelotes kasneri FitzSimons, 1939

Order SQUAMATA

Family SCINCIDAE

Distinguishing characteristics: A large *Scelotes*, with didactyle hindlimbs.

Present distribution: Known only from five specimens, four in the Transvaal Museum and one in the Port Elizabeth Museum. They are from Lambert's Bay and just east of Elandsbaai.

Former distribution: Not known.

Status: Rare.
Only five known. Distribution very limited.

Estimated numbers: Not known.

Breeding rate in wild: Nothing known of breeding.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Probably fair.

Remarks: Further collecting is required to establish the full extent of this species's distribution.

GRONOVII'S MONODACTYLE SKINK

Scelotes gronovii (Daudin, 1802)

Order SQUAMATA

Family SCINCIDAE

Distinguishing characteristics: Hindlegs monodactyle.

Present distribution: Coastal sandy areas from Langebaan to Lambert's Bay; also Dassen Island.

Former distribution: Presumably as above.

Status: Rare due to restricted distribution.

Estimated numbers: Not known but common where it occurs.

Breeding rate in wild: Nothing recorded.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Probably fair.

Remarks: Due to guano collecting on Dassen Island, the population there cannot be regarded as safe. Township development might threaten the species around Langebaan but it should be safe between there and Lambert's Bay.

WOODBUSH LEGLESS SKINK

Acontophiops lineatus Sternfeld, 1911

Order SQUAMATA Family SCINCIDAE

Distinguishing characteristics: A unique vermiform, limbless lizard similar to *Typhlosaurus* but with a fixed semi-transparent lower eyelid.

Present distribution: Known only from Woodbush and Broederstroom in the north-eastern Transvaal.

Former distribution: Unlikely to have differed from above.

Status: Rare due to restricted distribution.

Estimated numbers: Not known.

Breeding rate in wild: Nothing recorded.

Reasons for decline: No decline indicated.

Protective measures already taken: None. Occurs in Woodbush Forestry Reserve (Haacke pers comm).

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Not known.

Remarks: None.

CAPE MOUNTAIN LIZARD

Lacerta australis Hewitt, 1926

Order SQUAMATA

Family LACERTIDAE

Distinguishing characteristics: Not a true *Lacerta*. Collar well-marked; dorsal scales small; nostril pierced between nasals and first upper labial; colour dark with numerous green spots.

Present distribution: Known only from the type collected on the Matroosberg, Worcester, Cape.

Former distribution: Not known to differ from above.

Status: Rare.
Only one specimen known.

Estimated numbers: Not known.

Breeding rate in wild: Nothing recorded.

Reasons for decline: May have suffered as a result of mountain fires.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Probably fair.

Remarks: More collecting to establish the status of this species is required.

TRANSVAAL MOUNTAIN LIZARD

Lacerta rupicola FitzSimons, 1933

Order SQUAMATA Family LACERTIDAE

Distinguishing characteristics: Not a true *Lacerta*. Colour blackish with white dorsolateral band.

Present distribution: Known from the type locality, Lake Funduzi (one specimen). The author subsequently saw four (collecting one) on the summit of the Zoutpansberg. However, in two subsequent visits he was unable to find any more.

Former distribution: Not known.

Status: Rare.
Distribution restricted.

Estimated numbers: Not known.

Breeding rate in wild: Nothing recorded.

Reasons for decline: Although the remark above under "Present distribution" might suggest that there has been a decline, the habitat showed no sign of destruction by fire etc. More painstaking collecting would doubtless result in the finding of more specimens.

Protective measures already taken: Lake Funduzi is a sacred place among the local Africans and is very difficult to visit.

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Not known but probably fair.

Remarks: More field work is required to establish the status of this species.

EASTWOOD'S PLATED LIZARD

Tetradactylus eastwoodi Methuen & Hewitt, 1913

Order SQUAMATA

Family CORDYLIDAE

Distinguishing characteristics: Serpentine; has tridactyle forelimbs, didactyle hindlimbs.

Present distribution: Known only from Woodbush in the north-eastern Transvaal.

Former distribution: Similar to above.

Status: Rare due to very limited distribution.

Estimated numbers: No data.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated, although large areas are now covered by exotic forest.

Protective measures already taken: None but probably occurs in forestry reserves.

Measures proposed: None.

Number in captivity: None known of.

Breeding potential in captivity: Probably reasonable.

Remarks: More data required concerning the status of this species.

VELD MONITOR

Varanus exanthematicus (Bosc, 1792)

Order SQUAMATA Family VARANIDAE

Distinguishing characteristics: General form stout; nostril an oblique slit much nearer eye than end of snout.

Present distribution: Throughout South Africa except the western and southern Cape Province.

Former distribution: Similar to the above.

Status: Vulnerable outside game reserves.

Due to its large size this species easily attracts attention and this may lead to it being killed out of fear. It is also kept as a pet, often unsuccessfully in damper areas and is exploited for its skin. It is fortunately common in reserves such as Ndumu and the southern Kruger Park.

Estimated numbers: Not known.

Breeding rate in wild: Some 30 to 40 eggs are laid at a time.

Reasons for decline: Exploitation for skins, removal as pets, killing. Used by witchdoctors for medicinal purposes (Pooley pers comm).

Protective measures already taken: Protected by law in Cape Province, Natal and partially in Transvaal.

Measures proposed: Protection required in areas outside reserves.

Number in captivity: Most zoos have specimens.

Breeding potential in captivity: Fair.

Remarks: In no danger as it is widespread in other parts of Africa. Protection is needed outside reserves. This species is usually referred to as *Varanus albigularis* in provincial ordinances.

WATER MONITOR

Varanus niloticus (Linnaeus, 1762)

Order SQUAMATA Family VARANIDAE

Distinguishing characteristics: General form slender; nostril round, a little nearer eye than end of snout.

Present distribution: Widely distributed except over the Karoo and western Cape Province.

Former distribution: The same as above.

Status: Vulnerable outside game reserves. Its large size and reputation for molesting poultry causes many specimens to be killed. Also exploited for the skin and by witchdoctors.

Estimated numbers: Not known.

Breeding rate in wild: Some 40 to 60 eggs are laid at a time.

Reasons for decline: As above under "Status". Decline in range not suspected but probably reduction in numbers away from reserves.

Protective measures already taken: Protected in Cape Province, Natal and partially in Transvaal.

Measures proposed: Requires protection outside the major reserves.

Number in captivity: Most zoos have small numbers.

Breeding potential in captivity: Not known. Similar species have been bred.

Remarks: In no danger as it is widespread in other parts of Africa.

GIANT GIRDLED LIZARD

Cordylus giganteus A Smith, 1844

Order SQUAMATA Family CORDYLIDAE

Distinguishing characteristics: Large size, very spiny tail.

Present distribution: Orange Free State and southern Transvaal.

Former distribution: Not known to differ from the above.

Status: Vulnerable.

Due to heavy agricultural development of its habitat and its popularity as a pet on account of its large size. Also used as a laboratory animal for dissection for the same reason.

Estimated numbers: Very common in some places. Three labourers known to collect over 200 in a day.

Breeding rate in wild: Two young are born in late summer.

Reasons for decline: Agricultural destruction of habitat and exploitation as a pet and laboratory animal.

Protective measures already taken: Protected in Cape Province, Orange Free State and Transvaal. Occurs in Willem Pretorius Game Reserve (Haacke pers comm).

Measures proposed: Should be included in a reserve in each Province.

Number in captivity: Most zoos keep a few. Fair numbers reach Europe and America illegally (Haacke pers comm).

Breeding potential in captivity: Good, the young on being born are fully capable of fending for themselves.

Remarks: None.

ARMADILLO LIZARD

Cordylus cataphractus Boie, 1828

Order SQUAMATA

Family CORDYLIDAE

Distinguishing characteristics: An attractive very spiny *Cordylus*, yellowish in colour with black and white markings on the throat.

Present distribution: Western Cape Province from Graafwater and Matjiesfontein northwards to the Orange River.

Former distribution: Not known to differ from the above.

Status: Vulnerable due to restricted distribution and popularity as a pet.

Estimated numbers: Not known.

Breeding rate in wild: One or two young are born in summer.

Reasons for decline: A decline in numbers is suspected but not in distribution.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: Small numbers reach overseas countries illegally.

Breeding potential in captivity: Good if kept in suitable surroundings.

Remarks: None.

PEERS'S GIRDLED LIZARD

Cordylus peersi (Hewitt, 1932)

Order SQUAMATA

Family CORDYLIDAE

Distinguishing characteristics: A pitch black rupicolous *Cordylus*.

Present distribution: Restricted to granite hills from Bitterfontein northwards to Springbok.

Former distribution: Not known to differ from the above.

Status: Rare due to restricted distribution.

Estimated numbers: No data.

Breeding rate in wild: No data.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Probably good.

Remarks: None.

LAWRENCE'S GIRDLED LIZARD

Cordylus lawrencei (FitzSimons, 1939)

Order SQUAMATA

Family CORDYLIDAE

Distinguishing characteristics: A small, strongly depressed *Cordylus*; dorsal scales in 16 longitudinal series; median occipitals projecting behind.

Present distribution: Known only from Lekkersing and Helskloof in the Richtersveld.

Former distribution: Not known.

Status: Rare due to very restricted distribution.

Estimated numbers: Not known.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Probably good.

Remarks: Further collecting is required to see if the range is not more extensive.

WATERPOORT FLAT ROCK LIZARD

Platysaurus relictus Broadley, 1976

Order SQUAMATA Family CORDYLIDAE

Distinguishing characteristics: A small species lacking a brille in the lower eyelid; scales on the side of the neck enlarged and flattened.

Present distribution: Known only from granite outcrops at Waterpoort on the northern side of the Zoutpansberg range, northern Transvaal.

Former distribution: Not known.

Status: Rare due to very restricted distribution.

Estimated numbers: Not known.

Breeding rate in wild: Not known.

Reasons for decline: Broadley (1976) suggests that this may be a small surviving population of a primitive form.

Protective measures already taken: None.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Not known.

Remarks: Further collecting may reveal that this species is more widespread in the Zoutpansberg.

DWARF CHAMELEONS

Bradypodion spp

Order SQUAMATA

Family CHAMAELEONIDAE

Distinguishing characteristics: Small chameleons which bear live young. Various treatments taxonomically either as several separate species or as subspecies of one, *B pumilum*. It seems safest, until more is known about them, to treat all the forms as separate species. Three new species recently described from Natal have restricted distributions, as has *B melanocephalum* (Raw 1976).

Present distribution: *B setaroi* is restricted to coastal Zululand; *B dracomontanum* to the southern and central Drakensberg; *B thamnobates* to the Natal midlands from Mooi River to Dargle and Bulwer; *B melanocephalum* occurs in Durban and Pietermaritzburg.

Former distribution: Presumably the same.

Status: Vulnerable due to restricted distribution of these four species.

Estimated numbers: No data.

Breeding rate in wild: About 10 to 20 young are produced at a time and up to four litters may be produced per year.

Reasons for decline: No decline indicated.

Protective measures already taken: *B setaroi* occurs in the St Lucia Reserve, *B dracomontanum* in the Giants Castle Reserve, otherwise none.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Good.

Remarks: Further taxonomic studies are required to establish the true relationship of the various taxa. If only one species is involved it is in no danger.

WESTERN WORM SNAKE

Leptotyphlops occidentalis FitzSimons, 1962

Order SQUAMATA Family LEPTOTYPHLOPIDAE

Distinguishing characteristics: A very slender form with no first upper labial scale (fused with supranasal).

Present distribution: In survey area restricted to the Richtersveld and Onseepkans. Widespread in South West Africa.

Former distribution: The same.

Status: Rare (peripheral).

Estimated numbers: Not known.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: None known.

Breeding potential in captivity: Not known.

Remarks: Is in no danger.

AFRICAN PYTHON

Python sebae (Gmelin, 1789)

Order SQUAMATA

Family PYTHONIDAE

Distinguishing characteristics: The largest snake in South Africa.

Present distribution: Pondoland, Natal, Transvaal (except the highveld).
Exterminated in the eastern Cape about 1927.

Former distribution: As above including the eastern Cape. Probably more widespread as it has been reduced in the settled areas.

Status: Vulnerable outside the game reserves.

Estimated numbers: Not known.

Breeding rate in wild: Up to 100 eggs are laid at a time; due to parental care hatching rate is good.

Reasons for decline: Exploited heavily for the skin. Also killed by humans due to fear, in ignorance of its value in rodent control and because it is considered a threat to small stock and even children. All this has led to its extermination in the eastern Cape and severe reduction in numbers in settled areas and farming communities.

Protective measures already taken: Protected in Natal and partially in the Transvaal.

Measures proposed: A reintroduction should be attempted in the eastern Cape, preferably on the provincial Kudu Reserve where it could be fully protected until re-established.

Number in captivity: Most zoos have small numbers.

Breeding potential in captivity: Good, has been bred on several occasions.

Remarks: This species is in no danger as it occurs widely in Africa and is common in the Kruger National Park. However, it is vulnerable outside reserves.

FISK'S HOUSE SNAKE

Lamprophis fiskii Boulenger, 1887

Order SQUAMATA

Family COLUBRIDAE

Distinguishing characteristics: A small *Lamprophis* with scales in 23 rows; colour yellow above with dark brown markings.

Present distribution: Known only from Worcester, Touws River and Victoria West.

Former distribution: Not known.

Status: Rare.

Known from only six specimens.

Estimated numbers: Not known.

Breeding rate in wild: Nothing recorded.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Probably fair.

Remarks: Further collecting is required to establish the true range and abundance of this species.

SWAZI HOUSE SNAKE

Lamprophis swazicus Schaeffer, 1970

Order SQUAMATA

Family COLUBRIDAE

Distinguishing characteristics: A long slender snake with ventral count over 200; plain beige in colour.

Present distribution: Known only from Forbes Reef, Long Tom Pass and Havelock.

Former distribution: Not known.

Status: Rare (peripheral).

Estimated numbers: Not known.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated.

Protective measures already taken: None.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Not known.

Remarks: Further collecting is necessary to determine the range and status of this little-known species.

EASTERN WOLF SNAKE

Lycophidion semiannule Peters, 1854

Order SQUAMATA

Family COLUBRIDAE

Distinguishing characteristics: A small species with nostril pierced in a single scale. No apical pits in body scales.

Present distribution: From Zululand northwards to Tete.

Former distribution: Same as above.

Status: Rare (peripheral) due to restricted distribution.

Estimated numbers: Not known.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated.

Protective measures already taken: None.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Not known.

Remarks: None.

WESTERN SHOVEL-SNOOUT

Prosymma frontalis (Peters, 1867)

Order SQUAMATA Family COLUBRIDAE

Distinguishing characteristics: Has one or two dark bands across the neck. Body scales smooth in 15 rows.

Present distribution: From Steinkopf and Klipfontein northwards over most of South West Africa.

Former distribution: The same as above.

Status: Rare (peripheral).

Estimated numbers: Not known.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Not known.

Remarks: In no danger as it is widely distributed in South West Africa.

TROPICAL EGG-EATER

Dasypeltis medici (Bianconi, 1859)

Order SQUAMATA

Family COLUBRIDAE

Distinguishing characteristics: Similar to the common egg-eater but with a higher subcaudal count and pinkish to reddish-brown coloration.

Present distribution: East Africa entering our area in north-eastern Zululand.

Former distribution: Same as above.

Status: Rare (peripheral).

Estimated numbers: Known from two specimens in our area.

Breeding rate in wild: Not recorded.

Reasons for decline: No decline indicated.

Protective measures already taken: Enjoys protection in Sodwana Bay Park (Haacke pers comm).

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Fair.

Remarks: In no danger, is widespread in East Africa.

NAMIB TIGER SNAKE

Telescopus beetzii (Barbour, 1922)

Order SQUAMATA

Family COLUBRIDAE

Distinguishing characteristics: Scales in 21 rows; dorsal blotches rounded not broader than long as in *T semiamulatus*; anal entire.

Present distribution: From Luderitz, eastwards to Douglas and Vaalhoek on the Orange River.

Former distribution: Not known to differ from present distribution.

Status: Rare (peripheral).

Estimated numbers: Not known.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated.

Protective measures already taken: None, but may occur in the Aughrabies Falls National Park (Haacke pers comm).

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Not known; probably reasonable.

Remarks: In no danger. Inhabits remote country and is widespread outside our area.

TRANSVAAL QUILL-SNOURED SNAKE

Xenocalamus transvaalensis Methuen, 1919

Order SQUAMATA Family COLUBRIDAE

Distinguishing characteristics: Dorsal scales in 17 rows; five upper labials, the second and third entering the orbit.

Present distribution: Northern Transvaal, Maputa and Ndumu.

Former distribution: Not known to differ from above.

Status: Rare.
Very few specimens known.

Estimated numbers: Not known.

Breeding rate in wild: Not known, one female contained two eggs.

Reasons for decline: No decline indicated.

Protective measures already taken: None, but protected in Ndumu Game Reserve.

Measures proposed: None.

Number in captivity: None.

Breeding potential in captivity: Not known.

Remarks: The paucity of specimens is probably entirely due to its burrowing habits.

GABOON ADDER

Bitis gabonica (Dumeril & Bibron, 1854)

Order SQUAMATA Family VIPERIDAE

Distinguishing characteristics: A large heavy adder with a beautiful dorsal pattern of brown, yellow and purple like an oriental carpet.

Present distribution: Restricted to a small area of Zululand from Maputa south to St Lucia, Mtubatuba and the Umfolozi Flats. Widespread in Africa.

Former distribution: Presumably the same.

Status: Vulnerable.

Estimated numbers: Not known.

Breeding rate in wild: Some 30 young are produced at a time.

Reasons for decline: A small but a steady drain of specimens overseas and for snake parks occurs. Fire is a hazard. Also killed by workers in sisal and forest plantations (Pooley pers comm).

Protective measures already taken: Protected in Natal.

Measures proposed: None.

Number in captivity: Most zoos and snake parks have a few individuals.

Breeding potential in captivity: Good; has been achieved several times.

Remarks: This species is in no danger as it is common in other parts of Africa and is safe unless deforestation occurs.

SPOTTED DWARF PUFFADDER

Bitis schneideri (Boettger, 1886)

Order SQUAMATA

Family VIPERIDAE

Distinguishing characteristics: Very small size, up to 27 cm; low ventral count 104 to 129; no horns over eye.

Present distribution: From Luderitz in the north to Hondeklipbaai in the south; along the coastal dunes, not extending far inland except at Hondeklipbaai.

Former distribution: Presumably as above.

Status: Rare due to restricted distribution.

Estimated numbers: No data.

Breeding rate in wild: No data.

Reasons for decline: There is no evidence of decline but intensive diamond mining activity along the beaches in the Kleinzee area may have reduced its numbers.

Protective measures already taken: May not be kept in captivity without a permit. Is not protected from being killed.

Measures proposed: In view of its rarity should be protected by law in the provincial ordinance.

Number in captivity: Not known.

Breeding potential in captivity: Would be difficult to breed unless kept in semi-natural conditions.

Remarks: Due to the remoteness of much of its habitat this species is in no immediate danger but is vulnerable to disturbance by intense mining activities.

DESERT MOUNTAIN ADDER

Bitis xeropaga Haacke, 1975

Order SQUAMATA

Family VIPERIDAE

Distinguishing characteristics: A small, hornless adder with a high ventral count, smooth subcaudals and as many dorsal scale rows over the neck as across the body.

Present distribution: Confined to the dry lower Orange River area from Aus in the north to the Richtersveld and eastwards to Aughrabies Falls.

Former distribution: As above.

Status: Rare (peripheral).
Only two specimens from our area.

Estimated numbers: Not known.

Breeding rate in wild: Four to five young are produced.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected in Aughrabies Falls National Park.

Measures proposed: Should be protected in the Cape due to its rarity.

Number in captivity: Not known.

Breeding potential in captivity: Probably fair as it appears to feed well in captivity (Haacke 1975).

Remarks: Not considered to be in any danger as it inhabits remote, inhospitable country.

CAPE PLATANNA

Xenopus gilli Rose & Hewitt, 1927

Order SALIENTIA

Family PIPIDAE

Distinguishing characteristics: Differs from the commoner *X laevis* by its smaller size, narrower head, no sub-ocular tentacle and longitudinal markings with narrow, light vertebral stripe.

Present distribution: Known only from the Cape Flats, Cape Peninsula, Citrusdal and Nieuwoudtville. The last two require confirmation.

Former distribution: Not known to differ from the above.

Status: Rare due to localised distribution.

Estimated numbers: One hundred were captured at one time in a one hectare vlei at Cape Point and returned to the water.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated. Indeed *X laevis* has shown a marked ability to benefit from man's construction of dams etc. Artificial impoundments are occupied by *X gilli* on the Cape Flats so it may also be benefiting.

Protective measures already taken: The species occurs in some numbers in the Cape Point Nature Reserve and is protected by law under the Provincial Ordinance.

Measures proposed: Further research and collecting to establish the true extent of the species' range and abundance within that range. Prevention of *X laevis* being introduced into areas occupied by *X gilli* (Poynton pers comm).

Number in captivity: Not known.

Breeding potential in captivity: Fair, has been bred in Europe using a modification of the normal method used for *X laevis*. Hybrids with *X laevis* have also been produced.

Remarks: While in no immediate danger the status of this species needs monitoring, unless it is found to be more widespread in nature than is indicated by museum specimens.

GHOST FROG

Heleophryne rosei Hewitt, 1925

Order SALIENTIA

Family LEPTODACTYLIDAE

Distinguishing characteristics: A distinctive frog with discs on the tips of its fingers and toes and webbed hind feet. Tadpoles with a large oral sucker for attaching to substrate in mountain streams.

Present distribution: Confined to the mountain streams above Kirstenbosch.

Former distribution: Probably the same as present distribution.

Status: Rare due to its extremely restricted distribution.

Estimated numbers:- No estimate available.

Breeding rate in wild: Not known.

Reasons for decline: No decline indicated, very few specimens have been collected.

Protective measures already taken: Protected by Cape Provincial Ordinance. Occurs in forest land and the National Botanic Gardens where the habitat is preserved.

Measures proposed: Could perhaps be introduced to other Cape Peninsula streams to increase its range.

Number in captivity: None known.

Breeding potential in captivity: Not known.

Remarks: Planting of the forest land above Kirstenbosch with exotics may pose a threat to this species.

AMATOLA TOAD

Bufo amatolica Hewitt, 1925

Order SALIENTIA

Family BUFONIDAE

Distinguishing characteristics: Similar to *B angusticeps* but outer metatarsal tubercle more than half as long as inner metatarsal. The latter oval to rounded.

Present distribution: Confined to the Amatola and Katberg mountains.

Former distribution: Unchanged.

Status: Rare due to confined distribution. Afforestation may reduce its range.

Estimated numbers: No estimates available. Large numbers have been found in shallow pools (Wager 1965).

Breeding rate in wild: A few hundred eggs are laid at a time (Wager 1965).

Reasons for decline: No decline indicated.

Protective measures already taken: Protected by law.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Probably good.

Remarks: Further research and confirmation of its taxonomic status required.

RED-MARBLED FROG

Phrynomerus annectens (Werner, 1910)

Order SALIENTIA

Family MICROHYLIDAE

Distinguishing characteristics: Smaller than *P bifasciatus*. Reddish patches on dorsum not forming dorsolateral lines. Ventral surface dark, without spots.

Present distribution: South West Africa, just entering the north-western Cape Province.

Former distribution: The same as present distribution.

Status: Rare (peripheral) due to restricted distribution.

Estimated numbers: No data.

Breeding rate in wild: Some 80 to 100 eggs are laid at a time.

Reasons for decline: No decline indicated.

Protective measures already taken: Protected in the Aughrabies Falls National Park. Also by the Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Not known.

Remarks: Is in no danger, widespread in South West Africa and Angola.

CAPE DAINTY FROG

Cacosternum capense Hewitt, 1925

Order SALIENTIA

Family RANIDAE

Distinguishing characteristics: A large robust species, characterised by large greenish black blotches on the belly.

Present distribution: The Cape Flats, Stellenbosch, Darling and Malmesbury.

Former distribution: The same but urban development must have reduced it. For example the type-locality on Rondebosch Common has been filled in and Kikuyu grass planted.

Status: Rare due to limited distribution. If the species is regarded as a subspecies of *C namaquense* then its range extends to Lüderitz.

Estimated numbers: No figures available.

Breeding rate in wild: Not known. About 400 eggs are laid in groups.

Reasons for decline: No major decline is suspected but urban sprawl has destroyed some habitat.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Not known.

Remarks: Taxonomic research should be finalised as to whether this is a full species or not. If it is a subspecies of *C namaquense* the species is in no danger.

GREEN LEPTOPELIS

Leptopelis xenodactylus Poynton, 1963

Order SALIENTIA Family RANIDAE

Distinguishing characteristics: A large green, unmarked frog; webbing of fingers rudimentary, not reaching middle subarticular tubercle of fourth toe. Fingers and toes without discs.

Present distribution: Known only from Underberg, Natal above 1 300 m.

Former distribution: Unknown.

Status: Rare.
Known from only one specimen.

Breeding rate in wild: Unknown.

Reasons for decline: Not known.

Protective measures already taken: None.

Measures proposed: None.

Number in captivity: None known.

Breeding potential in captivity: Not known.

Remarks: Further collecting is necessary to establish the status and distribution of this virtually unknown species.

ARUM FROG

Hyperolius horstocki (Schlegel, 1837)

Order SALIENTIA Family RANIDAE

Distinguishing characteristics: An ivory-white tree frog with red legs, frequently found in arum flowers.

Present distribution: Coastal plains from Cape Town to Knysna.

Former distribution: The same.

Status: Rare.

Distribution patchy and restricted. No records between Bredasdorp and Knysna.

Estimated numbers: Not known.

Breeding rate in wild: Not known. Eggs are laid in a cluster of 10 to 30.

Reasons for decline: No decline indicated but coastal township development is destroying the habitat, as at Mitchell's Plain on the Cape Flats.

Protective measures already taken: Protected by Cape Provincial Ordinance.

Measures proposed: None.

Number in captivity: Not known.

Breeding potential in captivity: Not known.

Remarks: Collecting between Bredasdorp and Knysna may show that the species is more widespread than records suggest.

REFERENCES

- Broadley D G 1976. Two new forms of *Platysaurus* from the northern Transvaal (Sauria : Cordylidae). *Arnoldia, Rhod* 8, 1-3.
- Bruton M N and W D Haacke 1975. New reptile records from the tropical transition zone of south-east Africa. *Lammergeyer* 22, 23-32.
- Bustard H R 1972. *Sea turtles - their natural history and conservation*. Collins, London. 220 pp.
- Cogger H G 1975. *Reptiles and amphibians of Australia*. A H Reed and A W Reed, Sydney. 584 pp.
- FitzSimons V F M 1943. *The lizards of South Africa*. Transvaal Museum, Pretoria. 528 pp.
- FitzSimons V F M 1962. *The snakes of southern Africa*. Purnell, Cape Town. 423 pp.
- Foster C and C Chapman 1975. The care and maintenance of young leather-back turtles. *Int Zoo Yb* 15, 170-171.
- Haacke W D 1975. Description of a new adder (Viperidae, Reptilia) from southern Africa, with a discussion of related forms. *Cimbebasia* 4, 115-128.
- Hughes G R 1974. The sea turtles of south-east Africa, 1. *Investl Rep Oceanogr Res Inst, Durban* 35, 1-144.
- Hughes G R 1974. The sea turtles of south-east Africa, 2. *Investl Rep Oceanogr Res Inst, Durban* 36, 1-96.
- Poynton J C 1964. The amphibia of southern Africa. *Ann Nat Mus* 17, 1-334.
- Poynton J C and S Pritchard 1976. Notes on the biology of *Breviceps* (Anura : Microhylidae). *Zool Afr* 11, 313-318.
- Rau R 1969. Uber die Geometrische Landschildkröte (*Testudo geometrica*). *Salamandra* 5, 36-45.
- Raw L 1976. A survey of the dwarf chameleons of Natal, South Africa, with descriptions of three new species (Sauria : Chamaeleonidae). *Dbn Mus* 7, 139-161.
- Wager V A 1965. *The frogs of South Africa*. Purnell, Cape Town. 242 pp.