

KRUGER NATIONAL PARK

ANNUAL REPORT

of the

BIOLOGIST, 1958/1959

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INTRODUCTION

The year 1958/59 was in many respects a successful one for the Biological Section. The work progressed favourably and it appears as if the section safely weathered the interruption of the preceding year with the resignation of firstly the Assistant Biologist and then the Biologist.

The activities of the section have increased lately to such an extent that the available accommodation and facilities have become inadequate. It is, therefore, with a sense of gratitude towards the Director and the Board and simultaneously with a feeling of pride, that the completion of the new building, which is to house a laboratory, herbarium and reference museum, together with a properly equipped dark room, is awaited. This building will be the first of its kind erected by the National Parks Board and is indeed a landmark in its history.

At the end of March 1959, the Technical Assistant, Mr. G. F. Barkhuizen, was transferred to the Ranger Section and Mr. D. O. Stegmann, was appointed in his place.

A new Technical Assistant's post was created at Shingwedzi. This step is welcomed in all respects and is considered an important asset to the Biological Section. It is felt that the Section will now be able to execute its duties with greater efficiency.

REVIEW OF ACTIVITIES

1. POPULATION STUDIES AND COMMUNITIES.

1. FAUNA.

A. *Invertebrata*.

No complete survey has as yet been undertaken of such sections as the Insecta, Arthropoda, Nematoda, Mollusca, Crustacea and other phyla or classes of the invertebrate Mesozoa-group and at present little is known of the Protozoa in the water, soil, and the tissues of animals in the Kruger Park.

With the present division of activities and staff, it is impossible for this section to undertake work of this nature in the near future and, therefore, the aid of certain outside institutions has been requested. The following have already declared themselves willing to undertake either general or specific surveys or study projects in the Kruger Park:

Section Entomology of the Department of Agriculture.

The Transvaal Museum.

The Department of Public Health — Malaria and Bilharzia research units.

Zoology Departments of the Universities of Pretoria, Potchefstroom and Witwatersrand.

Regular reports will be made with regard to any progress.

B. *Vertebrata*.

1. FISH.

With the exception of the Zambesi shark (*Carcharinus (Eulamia) lamia*, Blainville) which was found in 1950 at the confluence of the Limpopo and Levubu at Pafuri, all the fresh water fish types in the Kruger Park are classified under the *Actinopterygii*, sub-class of the class *Osteichthyes* under super-class *Gnathostomata*.

Five orders of the super-order *Teleostei* are represented and subdivided into eight families and twenty-three genera.

A preliminary survey is progressing well and when the programme of work affords the opportunity, this, with the aid of the Department of Zoology of the University of Pretoria, will be developed into a complete survey of the Park waters.

The following species have already been found, but are certainly not representative of a complete series. The distribution data is not satisfactory and will be added to by a future survey.

ORDER — CYPRINIFORMES

Family 1. — *Characinidae*.

1. *Alestes imberi* (Peters) — Black-tail or dwarf tigerfish. This species is numerous in all the larger rivers which flow through the Park and has been found in permanent pools in some of the sand rivers. (Letaba River near Gorge, Sabie River, Levubu and Limpopo. Crocodile River at Malelane, Timbavati River near Acornhoek, João waterhole, Shingwedzi).
2. *Alestes lateralis* (Boulenger) — The rarer striped dwarf tigerfish has as yet been caught only at the confluence of the Olifants and Selati, but may with more intensive surveys, be found to have a wider distribution.
3. *Micralestes acutidens* (Peters) — The small, so-called mosquito fish is very plentiful in the slower flowing or stagnant water of most rivers in the Park. (Sabie, Limpopo, Crocodile, Olifants and Klaserie Rivers; Selati River near Leydsdorp, Sand River near Newington, Muwawi waterholes in the Shingwedzi).
4. *Hydrocyon vittatus* (Castelnau) — The tigerfish, certainly the most famous of all the Lowveld sporting fish is found in all the perennial rivers of the Park. Circa 1932 the skeleton of a tigerfish was found in a dry waterhole in the Manzentonto River. (Limpopo, Levubu waterholes in the Shingwedzi River, Olifants River, particularly east of the waterfalls, Sand River, Sabie River, Crocodile River and Nsikazi River). During January of this year, large specimens were caught in the Sabie River, the heaviest of which weighed 11 lbs. 1½ oz. — certainly a record catch for the Park! Length 30 ins., circumference 17¾ ins.

Family 2 — *Cyprinidae*.

All five genera of the Carp family in South Africa i.e. *Labeo*, *Varicorhinus*, *Barbus*, *Barilius* and *Engraulicypris* are well represented in the Park waters.

1. *Labeo rubropunctatus* (Gilchrist & Thompson) — The Lowveld mudfish is plentiful in the Sabie River (at Skukuza and elsewhere) and has also been caught in the Crocodile River and Lomati River, near Barberton.
2. *Labeo cylindricus* (Peters) — The sucker-mouth mudfish or 'loodvis' is one of the best known and most commonly distributed of the mudfish in the Lowveld and has been recorded from the Sabie River (at Skukuza, Sabie Poort and elsewhere), Crocodile River, Letaba River, Levubu River, Klaserie River and Crocodile River near Komatipoort.

3. *Labeo rosae* (Steindachner) — The red-nosed mudfish is abundant at the Levubu-Limpopo confluence and has also been caught in the Crocodile River (Komatipoort) and Letaba River. Fish, collected recently from water-holes in the Shingwedzi, are probably young specimens of this kind.
4. *Labeo ruddi* (Boulenger) — According to data at our disposal it has been caught in the Limpopo and Sabie Rivers, but will undoubtedly also be found elsewhere.
5. *Labeo hamiltoni* (Gilchrist & Thompson) — named after the late Colonel Stevenson-Hamilton. This mudfish kind has been recorded only from the Sabie River. *Labeo hamiltoni* is probably a synonym of *L. rosae*.
6. *Barbus brucii* forma typica (Boulenger) — The well-known Lowveld yellowfish is plentiful in the Sabie River and is also frequently caught in the Crocodile, Levubu, Olifants and Limpopo Rivers.
7. *Barbus brucii* forma gunningi (Groenewald) — A variety of the above-mentioned kind and is known as the rubberlip yellowfish of the Lowveld regions. It has been caught along the entire length of the Sabie River as well as in the Levubu, Letaba and Olifants Rivers.
8. *Barbus brucii* forma sector (Groenewald) — A variety of the typical form, without the mental lobe, which has been caught in rapids in the Sabie River.

The following species may yet be found in local waters:

Barbus marequensis (A. Smith) — Also known as the Marico yellowfish, and according to distribution data of Gilchrist and Thompson and others, is found in the Komati River, Limpopo River, Olifants River (Marble Hall) and Sabie River (near the Sabie River Bungalows) but as yet there is no reference to its presence in Park waters.

Barbus rapax (Steindachner) — Silverfish or paper-mouth. According to data provided by the Transvaal Museum and others, is recorded from the Levubu River at Sibasa and the Timbavati River at Acornhoek. No specimens have yet been collected in the Park.

9. *Barbus paludinosus* (Peters) — A small species of yellowfish or ghilliemientjie which has already been found in the Manzentonto River, Sabie River and Nwanetzi-spruit.
10. *Barbus hamiltoni* (Gilchrist & Thompson) — Hamilton's ghilliemientjie, which was originally described from specimens from the Sabie River, has also been found in the Limpopo, near Messina.
11. *Barbus argenteus* (Günther) — Günther's ghilliemientjie has been collected in the Mariti and other upper reaches of the Sabie and in the Crocodile River at Nelspruit, yet it may occasionally penetrate the western regions of the Park.

Barbus kerstenii (Peters) — Kersten's ghilliemientjie has been found in the upper reaches of the Olifants and Crocodile Rivers, but not yet in the Park.

Barbus lineomaculatus (Boulenger) — The flecked ghilliemientjie is also from the upper reaches of the Olifants River and may possibly enter the Park from the West.

12. *Barbus viviparus* (M. Web) — A viviparous ghilliemientjie which has already been found in the Sabie River and the tributaries of the Olifants River.

Barbus treurensis (Groenewald) — From the Treur River (a tributary of the Blyde River) and has also been collected from the Sabie, near the Sabie River Bungalows.

13. *Barbus unitaeniatus* (Günther) — The so-called single-striped ghilliemientjie has been noted in the Crocodile River at Riverside, the Sabie River at Skukuza and in the Lomati River.

14. *Barbus trimaculatus* (Peters) — The treble-spotted ghilliemientjie certainly has the most general distribution of the *Barbus* species in the Park and has already been collected from the Manzentonto River, Nwanetzi-spruit (Letaba Section), Sabie River (entire length), Letaba River, Mati-shibila warm springs, Mbyamide dam, Timbavati near Acornhoek and Levubu River near Palmartyville.

15. *Barbus (Beirabarus) palustris* (Herre) — The redfin ghilliemientjie has so far been caught only in the Nsikazi River.

16. *Barbus* sp. — During a visit to the Shalungwa spring last year in August, a number of specimens of a ghilliemientjie variety were collected there which have, as yet, not been identified by the expert in this field (Mr. A. A. van J. Groenewald) and may prove to be a new variety.

17. *Varicorhinus nelspruitensis* (Gilchrist and Thompson) — The small-scaled chisel-mouthed yellowfish has been recorded from the Crocodile River and the Sabie River, near Sabie.

18. *Varicorhinus brucii* (Boulenger) — The large-scaled chisel-mouthed yellowfish which is probably natural enemy of the bilharzia snail, has been caught along practically the whole length of the Sabie River, in the Levubu and Crocodile Rivers.

19. *Barilius neavii* (Boulenger) — The zebra-fish or striped fish is a rare and richly coloured little fish, and has already been collected from the Nels River (Nelspruit), White River, Klaserie River and the Crocodile River.

20. *Barilius stephensoni* (Gilchrist & Thompson) — Said to have been identified in the Sabie River, at Skukuza, by J. A. Yates, the well-known author of angling stories. A synonym of *B. neavii*.

21. *Engraulicypris brevianalis* (Boulenger) — A suitable vernacular name would probably be "fresh-water sardine". These tiny slim fish have already been identified in the Olifants River, the Sabie River, Muwawi waterhole (Shishaspruit), and in João and Mbohle waterholes (Shingwedzi River).

Family 3 — *Siluridae*.

1. *Clarias gariepinus* (Burchell).
The common Highveld barbel occur in the Sabie, Crocodile River, Olifants River, Timbavati River and Levubu River at Palmaryville. Will probably still be recorded elsewhere.
2. *Clarias mossambicus* (Peters) — The Lowveld barbel.
This hardy fish is certainly the most widely distributed throughout the Park and has already been found in the following places: Manzentonto River, Orpen Dam, Mlondozi River and dam, Nwanetzi River and Gudzane dam, Shisakashangondzo-spruit, Nhlarulume-spruit, Levubu, Shingwedzi River, Mapongole River, Shisha-spruit, Letaba River, Olifants River, Banga-spruit, Sabie River, Sand River, Mlyamide Dam, Crocodile River, Nsikazi River, Tshilawila-spruit, Shingwedzi waterholes, Tendi River, Makadzi-spruit.
3. *Gephyroglanis sclateri* (Boulenger) — Klip barbel.
Believed to be present in the Olifants River and the Levubu River but as yet no specimens have come to hand.
Gephyroglanis grandis (Boulenger) — Larger klip barbel.
Caught in the Levubu River at Ratomba (beyond the Park borders).
4. *Synodontis melanostictus* (Boulenger) — Grunter barbel or squeaker.
Plentiful in the Olifants River, Mbohle waterhole (Shingwedzi) and Levubu-Limpopo confluence.
5. *Eutropius depressirostris* (Peters) — Silver barbel, 'Makriel' or butterfish.
Fairly general distribution and already recorded from the Sabie River (Skukuza), Timbavati River, Levubu-Limpopo confluence, Olifants River, waterholes in the Shingwedzi River, waterholes in the Tendi River, Sand River bridge.
6. *Chiloglanis* sp. (?).
A rare, small barbel-like type collected at the confluence of the Bukwenene-Nsikazi and not yet properly classified.

Family 4 — *Mormyridae*.

1. *Petrocephalus stuhlmanni* (Boulenger) — Lesser snout-fish.
These peculiar fishes are reasonably numerous in the Limpopo and Levubu Rivers and also occur in the Olifants and Letaba Rivers.

Found further west in the Selati River near Leydsdorp.

2. *Gnathonemus macrolepidotus* (Peters) — Large snout-fish or bulldog-fish.

Seldom if ever caught by hook on account of the exceptionally small mouth. Already collected at the Limpopo-Levubu confluence, the Sabie River near Skukuza, and the pumphouse, and has also been seen in the upper reaches of the Sand River, near Acornhoek.

ORDER — APODES.

Family 1 — *Anguillidae*.

1. *Anguilla mossambica* (Peters) — Mozambique eel.
Frequently caught in the Sabie River when the water is muddy. Also found in the Manzentonto and Shingwedzi Rivers. Large specimens, weighing 20 lbs., are known.
2. *Anguilla marmorata* (Gaimard) — Marbled eel.
Probably the mottled specimens caught in the Letaba River near Olifants gorge. Several also in the Sabie River.

ORDER — EXOCIFORMES.

Family 1 — *Cyprinodontidae*.

1. *Notobranchius orthonotus* (Peters) — Seasonal fish.
In February this year, four specimens of this exceptionally rare little fish were collected at the Mtomene waterhole on the eastern boundary of the Satara section. This is an amazing discovery as this type was previously known only from the lower-lying regions of Northern Natal (Mkuzi, St. Lucia, and surroundings) and Mozambique.
Two of these little fish had an overall grey colour with lightly spotted fins (probably the females) while the others (male specimens) were tinted a purplish red with darker fins. The fact that the waterhole from which they were collected is not permanent and that the entire pool dries up completely for long periods, makes the discovery even more remarkable.

It seems certain that the Lebombo range represents a definite faunal barrier and excludes various inhabitants of Natal, North Zululand and the lowlands of Mozambique from the Lowveld regions of Transvaal. It is of importance and also very interesting that the animal life of the Lebombo range, along the eastern boundary of the Park, represents several kinds which do not occur elsewhere in the Lowveld of the Transvaal. In particular, we refer to Livingstone's antelope and the golden mole (*Amblysomus obtusirostris limpopoensis*) of the Wambia

pans, *Afrivalus fornasinii* (of Pumbe sand veld) and *Leptopelis* sp. of Nkuane pan on the eastern border of Section 4.

ORDER — PERCOMORPHI.

Family 1 — *Cichlidae*.

1. *Tilapia mossambica* (Peters) — Mozambique or blue kurper.
This rivals *Clarias mossambicus* in its wide distribution and in addition is the most plentiful of all the Lowveld fish varieties. According to an incomplete survey, the following localities are already indicated — Sabie River (entire length), Olifants River, Letaba River, Shingwedzi waterholes, Mashikiri waterhole, Mahembane windmill-dam, Hape pan, Levubu River, Pafuri (Limpopo-Levubu confluence), Crocodile River, Timbavati and Shisakashangondzo River, Nhlarulume waterholes, Nwanetzi waterholes, Gudzane dam, Tendi drift, Bangu waterholes, Manzentonto pools, and Orpen dam, Matishibila spring (in water with temperature of 39.5°C), Shalungwa spring.
2. *Tilapia melanoplura* (A. Dumeril) — The redbreasted kurper.
Not as plentiful or as widely distributed as the aforementioned, yet frequently caught in the Sabie and Sand Rivers. Also recorded from the Letaba, Gaisenga waterhole (Bumil), Orami dam, Mbyamide dam, Manzentonto River, Nwanetzi and W.N.L.A. dams, Gudzane dam. Mtsawu spruit. This fish has a great preference for water plants and is extremely useful in water overgrown with water grasses. They usually breed throughout the summer but recently the Game Ranger of Pretoriuskop observed signs of breeding activity in a water hole in the Mtsawu spruit in April, which is exceptionally late.
3. *Tilapia sparrmanii* (A. Smith) — Vlei kurper or green kurper.
Not plentiful in the Park and to our knowledge recorded with certainty only from the Nwanetzi, Gudzane and W.N.L.A. dams. Said to have been caught beyond the boundaries of the Park in the Olifants River at Komatipoort, in the Limpopo at Masieni and in the Levubu at Palmaryville.
The vlei kurper has exceptionally interesting breeding habits and with regard to this the following is described by Du Plessis and Groenewald (1953):
"The eggs are oval and olive green in colour and are laid on a stone, the stalk of a reed or on a firm place on the river bed. The male and female guard the eggs. One of them lies across the nest and moves the fins continually so that fresh water constantly circulates over the eggs, while the other remains on guard nearby. They change over positions

approximately every minute. The young are hidden in small holes in the bed until they are able to swim. Each of the young has four mucous glands on the head. These glands secrete transparent mucous which anchors the little fish to the hole. To ensure circulation of water in the hole, each little fish wags its tail constantly. Every day the young are each taken up in the parent's mouth and transferred to a clean hole. There are usually three holes. As soon as they are able to swim, they move about in a compact shoal with the parents. In time of danger at a signal from the parents, they sink to the bottom. When threatened by predator fish, the parents have a very difficult task as the other fish frequently attempt to scatter the shoal of young in order to catch them more easily. As soon as one shoal of young is independent, the parents prepare to breed again. These fish are unbelievably fertile."

4. *Serranochromis thumbergi* (Castlenau) — Canary kurper.
Fairly rare in the Park and so far recorded only from the Sabie at Skukuza and Manzendlovu-mouth and long ago from the Mlondozi River, above the picket post.
5. *Haplochromis moffatii* (Catlenau) — Moffatt's dwarf kurper.
Rare and as yet recorded only from the Sabie and Levubu Rivers, also from Komatipoort.

ORDER — GOBIOIDEA (BLENNIOIDEA).

Family 1 — *Gobiidae*.

1. *Gobius aeneofuscus* (Peters).
A multicoloured goby or blenny found in river mouths and the fresh waters of tropical East Africa as far south as Natal. It reaches 10" in length and in the Transvaal it has already been found in the Dzindi River (N. Tvl.) and in the Crocodile River at Nelspruit.
2. *Gobius giuris* (Hamilton) — The River goby.
May reach 20" in length in tropical waters. This is really one of the most enterprising of fish. It has colonised the greater part of the Indian and Pacific oceans, including fresh waters in many parts. Consequently it is so variable in colour and build that systematists are still uncertain as to whether the various varieties are a halfdozen species or only one. In all probability research will show that divergence is taking place. According to Prof. J. L. B. Smith, this fish is a valuable source of food in Indian waters and flourishes in special pools or lagoons of sea or brackish water.
Apparently more plentiful in Lowveld waters than is generally thought and already recorded from the Levubu River (Makuleka and Sibasa),

Manzentonto River (Tshokwane), Sabie River (Skukuza), Limpopo River near Messina and Shingwedzi River at Shangoni, die low water bridge and João waterhole.

2. AMPHIBIA (BATRACHIA).

A survey of the amphibians in the Kruger Park was conducted during the latter months of last year and the first few months of this year (while conditions were reasonably favourable). The Rangers assisted with this project and especially Rangers Adendorff, Kloppers, Van der Merwe and Wolhuter collected valuable material.

The results were really astounding and it seems that the frog-community of the Kruger Park, as far as varieties and distribution are concerned, rival that of the whole of the Western Province (± 22 varieties) and compares favourably with the so-called frog paradise of the Union (Natal and Zululand with ± 38 varieties).

A few very rare specimens have been collected and although the material has not been properly identified, comparison with museum specimens show that one species has been collected which is new to the Union viz. *Xenopus muelleri*. There are also varieties recorded from Transvaal for the first time.

As soon as conditions become favourable again this survey will be continued and it is expected that interesting discoveries will still be made.

All the species collected so far belong to the order *Anura* and are classified under the super-order *Salientia*, subclass *Apsidospondyli*. Three sub-orders, six families and altogether 16 genera are represented.

SUB-ORDER — OPISTHOCOELA (AGLOSSA).

Family — *Pipidae*.

Sub-family — *Xenopinae*.

1. *Xenopus laevis laevis* (Daudin).

The common platanna was collected at the Zwartkop windmill and other localities in the south of the Park. The collected material is still being examined to prevent possible confusion with the following species.

2. *Xenopus muelleri* (Peters) — East African platanna.

During December last year a platanna with a strange colour deviation (i.e. bright vermilion belly and hindlegs with distinct black patches on the dorsal and ventral aspects) was collected at Pafuri. This specimen was identified by Dr. Wager of Natal as *Xenopus muelleri*. This is the East African variety originally described by Peters (1882) in his "Reise

nach Moçambique" and which also occurs in Nyassaland, Zanzibar and Kenya. If this identification is correct, it will be the first record of this frog being found in the Union of South Africa. Similar specimens have also been found at the Maseya fountain, Bangu poort, Bubube dam, Bababala windmill, Punda Maria, and in the potholes in the sandstone reef at Shantangalane.

SUB-ORDER — PROCOELA (*PHANEROGLOSSA*).

Family 1 — *Bufo*idae.

1. *Bufo regularis* subsp. (Hewitt) — Northern spotted toad.
Widely distributed and abundant after the recent summer rains. Specimens were collected at the following places: Tshokwane, Punda Maria, Pafuri, Masandje spruit, Wambia pan, Machai pan, Malonga fountain, Skukuza, Crocodile Bridge, Pretoriuskop (mating during September), Mutshidaka drift, Mtjulu River, Thlalabye and Mareyo.
2. *Bufo regularis gutturalis* (Power) — Marbled toad.
A smaller sub-species of the former with a more warted skin and dark patches on the back. Collected at Skukuza and Shaben fountain.
3. *Bufo carens* (A. Smith) — Red-backed toad.
Irregular distribution but abundant in certain localities. Collected at Satara, Punda Maria, Panamana and Pumbe.
Bufo fenoulheti (Hewitt & Methuen) — Transvaal dwarf toad.
As yet not collected in the Kruger Park, but there is a distinct possibility that it will be found.

Family 2 — *Heleophryne*idae.

Heleophryne natalensis (Hewitt) — Natal kloof-frog.
The search for this exceptionally rare type, which so far has been recorded only from Rymers' Creek (Barberton) and Woodbush in Transvaal, is being continued. Unfortunately there are very few suitable localities (clear mountain streams flowing through densely wooded kloofs) in the Park, although the mountain kloofs in the Malelane Area must be considered as a likely habitat.

SUB-ORDER — DIPLASIOCOELA.

Family 1 — *Rana*idae.

Sub-family 1 — *Arthroleptinae*.

Arthroleptis spp. — Forest-frogs.

None of these rather inconspicuous frogs has been collected as yet although in the more densely forested areas of Punda Maria and also

the Msimbit-forest of the Bangu-Olifantspoort area, conditions are favourable for their existence.

1. *Phrynobatrachus natalensis* (A. Smith) — Natal dwarf burrowing frog. Very abundant and widely distributed throughout the Park. Localities are the following: Shalungwa fountain, Maseya fountain, Matishibila, Gubyane rockpools, Shingwedzi drift (Middle fire-break road), Shisakashangondzo dam, Tshokwane, Machai pan, Shaben fountain, Nyamnyur pan, Kloppersfontein dam, Crocodile River, Dzundwene fountain, Waterpools at Shantagalane, gravel pit at Gumbandevu, Tsila-wila spruit, Shipudze, Mingard's dam, Shingwedzi, João waterhole, fountains bordering the Skukuza aerodrome, pans next to the Manzendlovu fire-break road, Pumbe well, Mlondozi mouth, Hlahleni drift.
2. *Phrynobatrachus ukingensis mababiensis* (FitzSimons) — Ngamiland dwarf burrowing frog. The smallest frog in the Park but the one with the longest name. One of the few examples of the more distant Bechuanaland fauna which penetrates the Park from the west. Have been collected at Shaben fountain, Matishibila, Ngotsa waterhole, fountains at Skukuza aerodrome, Lindanda dam and pans next to the Manzendlovu fire-break road.

Sub-family 2 — *Raninae*.

1. *Rana oxyrynchus oxyrynchus* (A. Smith) — Sharp-nosed grass-frog. The typical form has so far been collected only at Shaben spring.
2. *Rana oxyrynchus* subsp. — A subspecies of the typical form. Generally slightly smaller and frequently has a broad reddish brown band across the back. Certainly the most widely distributed of all the frog species in the Park. Localities: Boesman-spruit, Malonga spring, Shisakashangondzo dam, Klopperfontein dam, Shipudze-spruit, Crocodile River, Tshokwane, Nyamnyur pan, Machai pan, Ngirivane windmill, Shingwedzi drift (middle fire-break), Matishibila, Maseya spring, Manung dam, Tlapa-la-Mokwena, Pretoriuskop, Nwashitsaka drift, Nkuane waterhole, Bangu windmill, Nsemane windmill, Pumbe well, Dzundwene spring, waterholes Shantagalane, quarry Gumbandevu, Mingard's dam (Shingwedzi), João waterhole, Shingwedzi, Red Gorten windmill, Manzendlovu fire-break, Lindanda dam, aerodrome (Skukuza), Gaben, Mareyo, Nténté, Kukumezane pan. Water beetles (*Belostoma* sp.) which catch the young frogs in the water and devour them, are among their numerous natural enemies.
3. *Rana mascareniensis mossambicus* (Dumeril & Bibron) — Mascarene grass-frog. Not as numerous as the aforementioned species, yet fairly wide distribu-

tion according to preliminary data. Collected at Nyamnyur pan, Skukuza, Tshokwane, Kloppersfontein dam, Nwambia pan, Mutshidaka drift, Nsemane windmill, Pumbe pan and well, Dzundwene spring, Machai pan, Red Gorton windmill, Mlondozi mouth, Manzi-mahle and Mareyo windmill.

4. *Rana fasciata* (Tschudi) — Long-toed or striped grass-frog.
Rare in the Park and as yet found only at Folly vlei near Pretoriuskop.
5. *Rana fuscigula* subsp. (Bocage) — Transvaal river-frog.
Not abundant in the Park and thus far known only from a single specimen collected at Tsila-wila spring (Punda Maria section).
6. *Rana grayi rhodesiana* (Hewitt) — Gray's grass-frog.
A number of specimens collected along the Olifants River, are at present being examined by the Transvaal Museum and may prove to be this species.
7. *Rana (Pyxicephalus) adspersus* subsp. — Lowveld bullfrog.
These frogs are probably a subspecies of the typical form, *Rana (Pyxicephalus) adspersus adspersus* (Tschudi) as no specimens have as yet been found which are longer than 3" - 4" in length. Fairly widely distributed and recorded at Kloppersfontein dam, Mbyamide mouth, Pafuri, Ngirivane sand road, on the Naphe road (near Skukuza), Magamba, Dobotzi, Nyamnyur, Malitenga, Nwambu, Shingwedzi, quarry near Letaba bridge, Nkuane pan and Mareyo windmill.
8. *Rana (Pyxicephalus) delalandii* (Tschudi) — Delalande's burrowing-frog.
Apparently more abundant in the south but has been collected in the northern regions as well. Localities: Ngirivane waterhole, 6 miles from Skukuza on the Naphe road, Nwashitsaka drift, Singedzene, Mafayeni warm springs, Shaben, Malelane, Red Gorton windmill, Mareyo windmill.
9. *Rana (Pyxicephalus) natalensis* (A. Smith) — Natal burrowing-frog.
As yet, found only in the southern sections and not as numerous as the abovementioned species. Localities: On Shabenkop, Crocodile Bridge, springs at Skukuza aerodrome, Mlondozi mouth.
10. *Rana (Pyxicephalus) ornatissima* (Bocage) — Rudd's Burrowing-frog.
Quite a number of specimens of these particularly rare and brilliantly coloured frogs have been collected — Gumbandevu quarry, Nkuane pan, Pumbe pan, Lion pan and Nwanetzi-west windmill.
11. *Rana (Pyxicephalus) obtusus* (FitzSimons) — Blunt-nosed burrowing-frog.
Found beyond the boundaries of the Park along the Olifants River (type locality) and so far collected in the Park only at Nwashitsaka drift during February.

Sub-family — *Cacosterninae*.

1. *Cacosternum boettgeri* (Boulenger) — Boettger's dwarf-frog.
This tiny frog is one of the most widely distributed species in the Union of South Africa, yet it is rare in the Park and a single locality only is known, viz. Ngirivane windmill dam.

Sub-family — *Hemisinae*.

1. *Hemisus marmoratum* (Peters) — Marbled or sharp-nosed burrowing-frog.
Interesting animals, though seldom seen, as most of their lives are spent underground. According to data at our disposal, fairly numerous and widely distributed. Localities: Ngirivane waterhole, Lipape dam, Punda Maria, Nwanetzi-west waterhole, Manzendlovu dam, Bubube dam and Pumbe well (young leave water during February).

Family — *Rhacophoridae* (*Polypedatidae*).

1. *Chiromantis xerampelina* (Peters) — Giant or grey tree-frog.
Exceptionally numerous and widely distributed throughout the Park, their foam nests on the branches of trees or shrubs during the rainy season, attracting the attention of tourists and others. Localities: Nyandu bush, Pafuri, Skukuza, Tshokwane, Kingfisherspruit, Nsemane windmill, Ngirivane windmill, Pumbe well, water pans Nwamuriwa, Manzendlovu pans, Kumane and Mazite dams, veld pans along the Timbavati River, Satara, Malelane, Punda Maria camp, Rabelais dam, 5 miles east of Hutomi dam, Nkuweni waterhole in Mahlampsana spruit.
2. *Hyperolius marmoratus* (Rapp) — Marbled or striped rush-frog.
These beautiful little animals are numerous and widely distributed throughout the southern and central regions of the Park, but are not as common in the north. Localities: Tshokwane, Nyamnyur pan, Manung dam, Manzentonto drift, Hlahlenidrift, Pretoriuskop rest camp, Naphe dam, Nwashitsaka drift, rock pools in the Naphe experimental plots, Nkuane pan, Nkuane waterhole, Nyekeyekene pan, Mtomene waterhole, W.N.L.A. dam, Rabelais dam, Gaben (Saliji), Mlondozi mouth, Manzentonto dam.
3. *Hyperolius pusillus* (Cope) — Pigmy reed-frog.
Small, green almost transparent little frogs which are generally found on sedges in water pans. Localities: Wambia pan, Nyamnyur pan, Shantangalane water pools and possibly the following as well — Nkuane pan, Manung dam, Leeupan, Nyekeyekene pan, Nsemane windmill, Ngirivane windmill, Hlahleni drift.

- Hyperolius tuberilinguis* (A. Smith) — Smith's reed-frog.
Has not yet been collected, but probably occurs in the Park.
4. *Hyperolius rhodoscelis* (Boulenger) — Red-legged reed-frog.
Specimens of this kind are still being compared with material in the Transvaal Museum. Collected at Manung dam, Pretoriuskop, Kamban, Nahpe dam and Rabelais dam.
 5. *Hyperolius* sp.
A number of specimens of an unidentified brown reed-frog, with gold-flecked back, have been collected at Nyekeyekene pan, Nsemane windmill and Mlondozi mouth. It is possible that this may prove to be a new species.
 6. *Leptopelis johnstoni* (Boulenger) — Brown-and-black tree-frog.
A few specimens of this extremely rare frog, formerly known in the Transvaal only from Hectorspruit and Kaapmuiden, were collected at Kambane (Pretoriuskop section) and at Nkuane pan on the eastern border of the Tshokwane section.
 7. *Leptopelis* sp. (?)
During February of this year a number of small, light green frogs of an unknown species were collected at Nkuane pan on the eastern boundary. This material still awaits identification but probably represents young forms of *L. johnstoni*.
 8. *Hylambates maculatus* (Duméril) — Red-legged pan-frog.
A sensational discovery, as this remarkable species was formerly only known from Northern Natal, Zululand and the coastal lowlands of Mozambique and Kenya. In the Park they are found in fairly large numbers among the roots and stalks of floating watergrasses (*Paspalidium platyrachis*), in the Machai and Wambia pans. Frequently these pans dry up completely and what happens to the frogs is still an unsolved mystery.
 9. *Kassina senegalensis senegalensis* (Duméril & Bibron) — Senegal kassina.
A timid species, seldom seen during the day, but very active at night. Shaded beautifully in brown, purple and silver. Localities: Nahpe veld-burning experimental plot No. 11, Mkoohlolo spruit, Nsemane windmill, Bangu windmill, Ngirivane windmill, Machai pan, Kloppersfontein dam, Sabie River (Skukuza), Tshokwane waterhole, Manung dam, Shantangalane waterholes.
 10. *Afrivalus (Megalixalus) spinifrons* (Cope) — Spiny-skinned banana-frog.
A small Central and East African tree-frog which is frequently found in the sheathes of banana tree leaves. Should the identification be correct, these will be the first collected in the Transvaal. Localities: Nkuane pan,

Nkuane waterhole, Nsemane windmill, Hutomi spruit, Nyekeykene pan, Tshokwane, Manzendlovu fire-break road, Gaben (Saliji).

11. *Afrixalus (Megalixalus) fornasinii* (Bianconi) — Brown-and-white tree-frog.

Has not yet been collected, but according to reliable reports definitely occurs in the Pumbe sandveld on the Eastern boundary of the Satara section.

Family — *Microhylidae*.

Sub-family — *Brevicipitinae*.

1. *Breviceps adpersus* (Peters) — Transvaal blaasop or Jan Blom.
These comic little animals are very plentiful locally and have already been recorded at Skukuza, Shaben quarry, Nahpe detour and Malelane ranger's post.
2. *Breviceps mossambicus* (Peters) — Mozambique blaasop or Jan Blom.
Resembles *B. adpersus* closely, yet is more conspicuously marked in yellow on the back and the skin is smooth, while the skin of the former is rough and covered with distinct glands. Plentiful in Portuguese East Africa and regions of the Lowveld. Specimens uncovered by the bulldozer in the Malonga sandveld and Nyandu bush, are in all probability, this species.

Breviceps parvus (FitzSimons) — Lesser blaasop or Jan Blom.

The specific status of this type is still suspect and it is possibly a subspecies of *B. mossambicus*. In any case, it has not yet been collected within the Park boundaries.

Sub family — *Phrynomerinae*.

1. *Phrynomerus bifasciatus* (A. Smith) — Black-and-white rubber-frog.
Although it is certainly one of the most conspicuously coloured frogs of the Lowveld regions, it is seldom seen due to its exclusively nocturnal habits. Has already been collected at Skukuza, Pretoriuskop, Mahlobyanine, Nsemane windmill, Ngirivane windmill, Lindanda dam, Pafuri.

3. REPTILIA.

A. ORDER — TESTUDINES (CHELONIA).

The two species of land tortoises which are found in the Kruger Park are both members of the family *Testudinidae* under Section 1 (*Testudinoidea*) of the sub-order *Cryptodira*.

The mountain or leopard tortoise *Testudo (Geochelone) pardalis babcocki* (Loveridge) is plentiful and the more commonly distributed of the two species. It has been observed regularly throughout the Park this year. Very small specimens of this species were seen this year as early as the end of August. Unfortunately the tortoise community has again, during this year, suffered severely as a result of devastating and extensive veld fires. Quite a number of badly burned specimens were found in the Pretorijskop experimental plots which were burned during August.

The ranger of the Pretorijskop Section reports that during March last year, he came across a small mountain tortoise busy gnawing at the weathered bone of an impala skull. During February of this year mountain tortoises were also observed feeding on the leaves of *Antherium pietersbergensis* and the superficial portion of an unidentified toadstool.

The hinged or box tortoise — *Kinixys belliana australis* (Hewitt), has a fairly general distribution in the southern part of the Park, but has not been observed further north than the Kumane dam. During February, after good rains, they were frequently seen on the roads of the southern district and the Tshokwane section.

Two species of the family *Pelomedusidae* (water tortoises) occur in the Park. The hinged water tortoise [*Pelusios sinuatus sinuatus* (A. Smith)] is exceptionally numerous in all the swift flowing rivers and pools in the dry rivers, as well as in some of the permanent pans of the Park, especially in the Northern regions, and is frequently caught by anglers on meat-baited hooks.

The common or flat-domed water tortoise (*Pelomedusa subrufa* Lacépède) is apparently more plentiful in the southern waters yet has been found in certain waterholes in the far north (e.g. those at Shantangalane). During February several young specimens of this kind were observed in rock pools far from permanent water, in the Nahpe area.

B. ORDER — CROCODYLIA.

The sole representative of the family *Crocodylidae* in the Kruger Park, is the Nile crocodile [*Crocodylus niloticus* (Laurentus)]. It is an inhabitant of all perennial rivers in the Park and frequently appears in most unlikely places, particularly after heavy rains. The following general observations have been recorded during the year:

The Ranger of Letaba sections reports that a crocodile measuring only 6 ft. 1 in., caught a zebra at a waterhole near Letaba. He destroyed the reptile and the stomach contents consisted of the remains of the zebra as well as of a waterbuck and a water tortoise. In contrast the stomach contents of a crocodile

of 9 ft. 5½ in., destroyed in the Orpen dam, consisted of two small pebbles only. Two large crocodiles of 13 ft. 8 in. and 12 ft. 5 in. respectively, were killed in the Olifants River. The stomach contents of the larger one consisted of the remains of an impala ewe and a fully grown warthog, while the stomach of the other was empty.

The Levubu and Olifants Rivers certainly harbour the largest crocodile populations in the Park and on one occasion approximately 40 of the scaly monsters were counted on a sand bar in the Levubu near the Pafuri picnic spot. One was a giant of almost 15 ft. in length. The latter, however, compares poorly with a specimen described in the "Annual Report of the Uganda Game Department" of 1937:

"The year saw a new record set up for Uganda crocodiles — a monster 19 foot 6 inches long was caught in the Semliki River. Its width across the belly was 4 foot 9 inches. It seems possible that this region may yet produce an authentic 20 foot crocodile."

During February this year, a Ranger observed twelve crocodiles devouring the carcass of a giraffe which had been caught and dragged in at Olifants bridge.

Two small crocodiles were seen in the water in the Air Force dam at Lipape soon after it had filled for the first time. During the previous rainy season the carcass of a 5 ft. crocodile, which had been overcome and killed by lions a mile from the Sabie River, was found.

This year, two young crocodiles were captured at Mahowahila windmill and at Gubyane (Red Rocks) and presented alive to the Fisheries Institute at Lydenburg.

A little Native girl was caught by a crocodile while bathing in the Levubu River at Pafuri. The monster swam to the Park bank of the River with its victim and placed her on the sand. Two other little girls accompanying her, called for help and a few Natives appeared and crossing the river, fetched her. She died, however, on the way to the Elim Hospital.

C. ORDER — SAURIA (LACERTILIA).

During the year a preliminary survey of the lizard fauna of the Kruger Park was initiated. The data at present is not such that a locality list can be supplied, but it is hoped to do this work on a more extensive scale as soon as the time is available.

Types which have already been identified together with those which are most likely to be found are the following :

SUB-ORDER 1 — ASCALOBOTA.

Section 1 — Gekkota.

Family 1 — Gekkonidae.

1. *Homopholis wahlbergii* (A. Smith) — Wahlberg's gecko. Distributed throughout the Park and has been collected at Skukuza.
2. *Hemidactylus mabouia* (Moreau de Jones) — Tropical house gecko. Very abundant and found in the homes of staff and Native huts throughout the Park.
3. *Lygodactylus capensis capensis* (A. Smith) — Common dwarf gecko. Generally distributed and common in certain localities.
Lygodactylus ocellatus (Roux) — Spotted dwarf gecko. Collected at Watervalboven, Woodbush and in the Zoutpansberg. Possibly not present in the Park.
4. *Pachydactylus punctatus punctatus* (Peters) — Peter's spotted gecko. Rare and seen less often but already collected at Acornhoek, Punda Maria, Klaserie and Leydsdorp.
5. *Pachydactylus capensis capensis* (A. Smith) — Smith's common gecko. A specimen recently collected at Skukuza might be of this species.
6. *Pachydactylus bibronii* (A. Smith) — Bibron's gecko or "Blinkogje". Plentiful and distributed throughout the Park. Collected at Skukuza and several other places.

Section 2 — Iguania.

Family — Agamidae.

1. *Agama atricollis* (A. Smith) — Tree agama. Very common everywhere in the Park and specimens with external parasites such as mites and ticks are often found. A fight between one of these and a white-crowned shrike (*Eurocephalus anguitimens*) was seen to end undecided after a few furious rounds.
2. *Agama atra* (Daudin) — Rock agama. Have been recorded from near Leydsdorp and Mariepskop but not yet from the Park.
3. *Agama hispida aculeata* (Merrem) — Kalahari stickle-backed or sand agama. A desert animal from the Kalahari, S.W.A., the Karroo, Angola and Southern Rhodesia and altogether a rare finding in the Transvaal. Found for the first time this year in the Nyandu sandveld on the border of the Punda Maria section.

4. *Agama hispida armata* (Peters) — Peter's stickle-backed or sand agama. Found locally in fairly large numbers in the northern parts of the Park, i.e. in the vicinity of Mooiplaas as far as Shingwedzi, at Matilolo Klip-springerkop (Letaba) and along the mountain road north of Shilowa. *Agama hispida distanti* (Boulenger) — Distant's sand agama.

Not collected in the Park yet, but at Selati, Leydsdorp and Letaba.

Section 3 — *Rhoptoglossa*.

Family — *Chamaeleontidae*.

1. *Chamaeleo dilepis dilepis* (Leach) — Common large chameleon. Fairly common and distributed throughout the Park. Often seen during the summer months and a female digging a hole in which to lay eggs was observed early in March this year.

SUB-ORDER 2 — AUTARCHOGLOSSA.

Section 1 — *Scincomorpha*.

Family 1 — *Scincidae*.

1. *Scelotes bidigitatus* (FitzSimons) — Lowveld didactyle skink.

A type with rudimentary limbs collected on the Olifants River at Klaserie in the Leydsdorp District. The remains of a lizard caught by a bird of prey, found at the Kukumezane pan on the eastern boundary of the Satara section, was most probably one of these.

Scelotes brevipes (Hewitt) — Hewitt's monodactyle skink. Another primitive type generally shy of sunlight. Has been collected at Nelspruit and Hectorspruit, but up to the present not within the limits of the Park.

Scelotes arenicola (Peters) — Peters' limbless sand skink. Found from Zululand northwards to Mozambique but not yet collected in the Park.

Scelotes inornatus mossambicus (Peters) — Mozambique limbless skink. Enjoys more or less the same distribution as *S. arenicola* and must still be collected in the Park.

2. *Mabuya quinquentaeniata margaritifer* (Peters) — Blue or red-tailed Bushveld skink.

Very common and widely distributed through the Park especially on granite koppies but also elsewhere. The males and females show great variation in colour, and the colour of the tail of one is sometimes bright blue while that of the other is salmon pink.

3. *Mabuya varia* (Peters) — Common variegated skink.

Very common and distributed throughout the Park in varied localities.

4. *Mabuya striata* (Peters) — Common striped skink.
Fairly common and has been recorded over the whole length of the Park.
Mabuya capensis (Gray) — Treble-banded skink.
Has been collected at Selati, Lydenburg and Woodbush, but not yet within the Park.
Mabuya homalocephala depressa (Peters) — Peter's flat-crowned skink.
The same distribution as *M. capensis* and also not yet collected in the Park.
5. *Riopa sundevallii* (A. Smith) — Sundevall's skink.
A burrowing type which has been collected at Skukuza and Punda Maria.
6. *Ablepharus wahlbergii* (A. Smith) — Wahlberg's dwarf skink. Active little lizards usually found in shady localities amongst grass. Have been recorded from Punda Maria and Batavia.
7. *Acontias plumbeus plumbeus* (Bianconi) — Giant black burrowing or legless skink.
Collected at Skukuza but also recorded from other centres.

Family 2 — *Gerrhosauridae*.

1. *Gerrhosaurus validus validus* (A. Smith) — Smith's plated rock lizard.
Common and widely distributed throughout the Park. Commonly confused with the veld leguan. A list of localities has been recorded.
2. *Gerrhosaurus flavigularis flavigularis* (Wiegmann) — Yellow-throated plated lizard.
Often seen in the southern and middle sections of the Park and has been collected at Tshokwane.
3. *Gerrhosaurus nigrolineatus* (Hallowell) — Black-lined plated lizard.
Has been collected at Leydsdorp, Selati, Kaapmuiden and Hectorspruit and was possibly recorded last year at Tlapa-la-mokwena.
4. *Gerrhosaurus major grandis* (Boulenger) — Greater African plated lizard.
Known from Hectorspruit, Kaapmuiden, Malelane, Klaserie and Leydsdorp and a possible specimen was recently seen at Shantangalane hills.
Tetradactylus breyeri (Roux) — Breyer's long-tailed seps.
This type may be present in the tall grass areas of the south but has not been collected up to the present.

Family 3 — *Feyliniidae*.

1. *Typhlosaurus aurantiacus* (Peters) — Golden burrowing or legless skink.
A rare burrowing kind which has been collected in the Transvaal at Pafuri, Makulek and Punda Maria only.

Family 4 — *Cordylidae*.

1. *Cordylus jonesii* (Boulenger) — Jones' girdled lizard.
Reasonably plentiful and occurs throughout the Park. New-born specimens were seen at Naphe during November.
Other members of this family i.e. *Cordylus warreni babertonensis* (Van Dam), *Cordylus vandami vandami* (FitzSimons), *Cordylus vittifer* (Reichenow) and *Chamaesaura anguina* (Linnaeus) have been collected at higher lying areas beyond the borders of the Park.
2. *Platysaurus minor orientalis* (FitzSimons) — Lesser red-tailed rock lizard.
Fairly common on granite hills in the Pretoriuskop and Naphe areas.
3. *Platysaurus wilhelmi* (Hewitt) — Wilhelm's red-tailed rock lizard.
Has been collected at Skukuza and is present on the rocky hills in the Naphe area.
4. *Platysaurus guttatus guttatus* (A. Smith) — Transvaal red-tailed rock lizard.
Especially plentiful in the rocky hills north of the Olifants River and in the Punda Maria area.

Family 5 — *Lacertidae*.

1. *Nucras intertexta holubi* (Steindachner) — Spotted sandveld lizard.
Has been collected at Leydsdorp, Hectorspruit, Gravelotte and Punda Maria and last year young specimens were seen in the vicinity of Naphe.
2. *Eremias lugubris* (A. Smith) — Tiger lizard or black and yellow sand lizard.
Fairly common especially in the northern areas and has been collected at the Malonga fountain.
3. *Ichnotropis squamulosa* (Peters) — Rough-scaled sand lizard.
Has been collected at Leydsdorp, Gravelotte, Komatipoort, Hectorspruit and Acornhoek. Also recorded from Skukuza and Dzundwene.
4. *Ichnotropis capensis capensis* (A. Smith) — Smith's rough-scaled sand lizard.
Fairly common in the Pretoriuskop and Nahpe areas.

Family 6 — *Amphisbaenidae*.

1. *Amphisbaena quadrifrons capensis* (Thominot) — Eastern worm-lizard.
A rare burrowing variety collected at Punda Maria.
2. *Amphisbaena langi* (FitzSimons) — Lang's worm-lizard.
Up to the present the only animal which is restricted to the limits of the Park. Only known from the type locality i.e. Punda Maria near the Levubu River.
Amphisbaena violacea vandami (FitzSimons) — Van Dam's worm-lizard.

Has been collected at Louw's Creek, Witrivier, and Nelspruit but has not been recorded from the Park.

Section 2 — *Anguimorpha*.

Family 1 — *Varanidae*.

1. *Varanus albigularis albigularis* (Daudin) — White-throated or veld leguan. Not very common but found throughout the Park. Considerable numbers of these large, cumbersome reptiles are probably killed annually by veld fires.
2. *Varanus niloticus* (Linnaeus) — Water leguan. Found at nearly all permanent waters in the Park. An exceptionally large specimen of 7 foot in length was seen in a rock crevice at Mashikiri Poort.

D. ORDER — SERPENTES (OPHIDIA).

Knowledge of the snakes of the Kruger Park has to date been fragmentary and during the past year a systematic survey of these feared reptiles was launched. The project is being undertaken with the co-operation of the Transvaal Museum and all distribution data collected thus far has been made available to Dr. FitzSimons for inclusion in his forthcoming publication on the snakes of Southern Africa.

The following general observations have been noted during the past year:

In the Nwathimhiri bush a tawny eagle was seen to catch and decapitate a black mamba ten foot in length. A seven foot eight inches black mamba created havoc when it was found in the house of the Clerk of Works on the 30th March, 1959. It was eventually cornered and killed.

On two occasions pythons succeeded in catching kudu calves and proceeded to swallow them. In both instances, however, the prey was too large and it was regurgitated and abandoned. A small python of approximately 30 inches was seen to catch a small duck in the water near Pretoriusskop. Exceptionally large examples of the black-necked cobra (*Naja nigricollis*) were observed — one of seven foot seven inches at Punda Maria, and other of 7 foot, which had swallowed a three-foot puff-adder, in the Letaba section.

A large puff-adder was seen to catch a full grown kurrichaine button quail (*Turnix lepurana*) and swallow it, starting with the head. A striped skaapstekker, laden with eggs, was found early in September on the Ngotsa fire-break road. One night in February of this year a watersnake (*Lycodonomorphus rufulus*) was found swallowing a frog (*Kassina senegalensis*) which it had constricted. The birdsnake also preys on *Cordylidae* (*Cordylus jonesii*) as evidenced recently at Skukuza.

An exceptionally large specimen of the rare burrowing snake (*Calame-*

laps miolapis) was caught at Skukuza during November of last year. According to Dr. FitzSimons this is the largest known specimen from within the Union as the only larger specimen was found in Southern Rhodesia near Bulawayo.

The following is a list of the species already collected in the Park.

Family 1 — *Typhlopidae*.

1. *Typhlops schlegeli schlegeli* (Bianconi) — Yellow and black earthsnake. Observed at Skukuza, Batavia and Pretoriuskop.
2. *Typhlops schlegeli mucroso* (Peters) — Golden-brown earthsnake. A probable example of this sub-species was observed at Skukuza in 1957.

Family 2 — *Leptotyphlopidae*.

1. *Leptotyphlops conjuncta* (Jan.) — Small black threadsnake. Collected at Pretoriuskop and in the Numbi area after rains.
2. *Leptotyphlops scutifrons* (Peters) — Small dark-brown threadsnake. Collected as the above, at Pretoriuskop and Numbi area.

Family 3 — *Boidae*.

Sub-Family — *Pythoninae*.

1. *Python sebae* (Gmelin) — Python. Widely distributed throughout the Park, usually near water. The following localities can be mentioned: Skukuza Rest Camp, Punda Maria, Lower Sabie Road, Tendi River, Nhlarulume spruit, Kolwane spruit, Makadze spruit, Mlondzispuit, Shilowa Poort, Machai Pan, Manzendlovu Drift, Pafuri, Manung Dam, Mbaduankomo, Buffelshoek, 2 miles south of Nténté, between Timbavati Drift and Shisakashangondzo Dam.

Family 4 — *Colubridae*.

Sub-Family 1 — *Colubrinae* (Solid-toothed snakes).

1. *Neusterophis olivaceus uluguruensis* (Loveridge) — Olive green water-snake. A specimen collected in February of this year at Ngirivane windmill was thought to be an example of this species, but eventually proved to be an aberrant specimen of the brown water snake (*Lycodonomorphus rufulus*).
2. *Pseudaspis cana* (Linnaeus) — Mole snake. Already noted at Lipape, Shaben Experimental Plots and near Numbi Gate.
3. *Lycodonomorphus rufulus* (Lichtenstein) — Brown (red-bellied) water-snake.

Found at Letaba Low-level bridge.

4. *Lycophidion capense capense* (A. Smith) — Wolf snake or Cape spotted snake.
A single specimen was found at Punda Maria.
5. *Duberria variagata* (Peters) — Slug-eater or garden snake.
It is alleged that a specimen was found in 1955 at the big marula tree near Mutlumubi Drift.
6. *Philothamnus (Chlorophis) hoplogaster* (Günther) — Green watersnake.
Three possible specimens of this species were collected at Nahpe Spring, Tshokwane and Nwanetzi West windmill, but their identity is still doubtful and is being compared with material in the Transvaal Museum.
7. *Philothamnus semivariagatus semivariagatus* (A. Smith) — Bush snake.
Reasonably plentiful and distributed throughout the entire Park. Found at Panamana, Mbyamide Experimental Plots, Skukuza, Punda Maria and Shingwedzi.
8. *Mehalya capensis capensis* (A. Smith) — File snake.
Only two known localities viz. Gomondwane Bush and Pretoriuskop.

Sub-Family 2 — *Dasypeltinae*.

1. *Dasypeltis scabra scabra* (Linnaeus) — Egg eater.
Already collected at Pretoriuskop, Komapite windmill, Letaba Rest Camp and Shingwedzi.

Sub-Family 3 — *Boiginae* (Back-fanged snakes).

1. *Telescopus semiannulatus* (A. Smith) — Tiger snake.
Fairly common in the Park and has been collected at Crocodile Bridge, Kingfisherspruit, Tshokwane, Skukuza, Malopene and Pretoriuskop.
2. *Crotaphopeltis hotamboeia* (Laurenti) — Red-lipped or herald snake.
Like the former species widely distributed and has been collected at Doispan, Skukuza, Letaba, Orpen (mating recorded on 12.11.58), Malopene and Shingwedzi.
3. *Psammophylax rhombeatus* (Linnaeus) — Rhombic skaapsteker.
Alleged to have been seen in Skukuza Rest Camp during 1955, yet not recorded since.
4. *Psammophylax tritaeniatus tritaeniatus* (Günther) — Striped skaapsteker.
Commonly seen and has been found along the Ngoitsa fire-break road, Pretoriuskop, Letaba, Nwanetzi and near the Mlombane drift.
5. *Psammophis sibilans sibilans* (Linnaeus) — Hissing sand snake.
Collected at Skukuza only.

6. *Psammophis subtaeniatus subtaeniatus* (Peters) — Striped sand snake. Common and distributed throughout the Park. The following localities are known: Kingfisherspruit, Sabie Poort, Hape Hut, Skukuza, Letaba, Olifants River falls and Shingwedzi.
7. *Psammophis* sp. This specimen was caught in floating water grass in the Machai Pan, and has not yet been identified.
8. *Dispholidus typus* (A. Smith) — Tree snake or boomslang. Common in the Park and shows great colour variation. Has been recorded from Timbavati, Kingfisherspruit, Skukuza, Numbi, Hlanganine Spruit (Nahpe Road), Mbyamide test plots, Pretoriuskop, Shingwedzi, 8 miles east of Rabelais dam and also at the dam.
9. *Thelotornis kirtlandii capensis* (A. Smith) — Bird snake. One of the most widely distributed snakes in the Park, and is fairly common locally. Has been collected at Numbi, Mbyamide road, Sweni River, Mbyamide Experimental Plots, Skukuza, Pretoriuskop, Komapite, Sabie River, Shingwedzi.
10. *Calamelaps unicolor miolepis* (Günther) — Plumbeus ground snake. Only collected at Skukuza.
11. *Aparallactus capensis capensis* (A. Smith) — Cape black-headed snake or centipede-eater.
A small variety which shuns sunlight. Has been collected at Pretoriuskop, Nahpe, Kingfisherspruit, and Malopene North Windmill.

Family 5 — *Elapidae* (Front-fanged snakes).

1. *Naja haje haje* (Linnaeus) — Egyptian or banded cobra. Large specimens of this poisonous type have been found at Skipberg, Shawu, Letaba Bridge Hills, Mbyashishe and Shingwedzi.
2. *Naja nigricollis* (Reinhardt) — Black-necked or spitting cobra. Very common and widely distributed through the Park. Has been recorded from Skukuza, Tshokwane, Kingfisherspruit, Letaba, Malelane, Pretoriuskop, Punda Maria and Shingwedzi.
3. *Hemachatus haemachates* (Lacépède) — Ringhals. A few specimens were collected at Komatipoort in 1911, but up to the present they have not been found inside the Park.
4. *Aspidelaps scutatus* (A. Smith) — Shield snake. This rare snake has been found at Letaba, Pretoriuskop and Makutwanini.
5. *Elapsoidea sundevalli decosteri* (Boulenger) — De Coster's garter snake. A young specimen of this type was collected at Pafuri in 1956 but has not been found elsewhere.