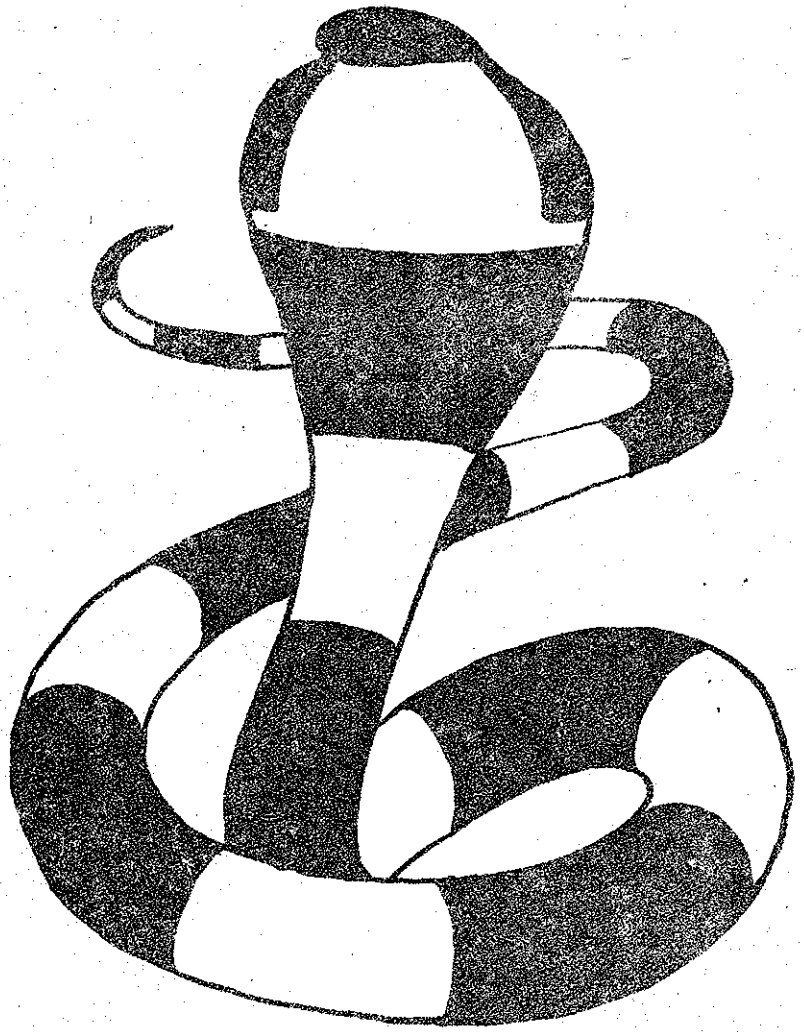
16

H.A.R.
JOURNAL



THE JOURNAL OF THE HERPETOLOGICAL ASSOCIATION OF RHODESIA.

No. 16 September, 1961.

CONTENTS

NEW ASSOCIATE MEMBERS

C.E.Gow, South African Museum, P.O.Box 61, Cape Town, C.P., South Africa.

G.Kuehn, 180 First Street, EXCELSIOR, Minnesota, U.S.A.

Zoologisk Institut, Aarhus Universitet, AARHUS, Denmark.

W.W.Armitage, c/o Flat 400, King's Hall, Aliwal St., DURBAN, South Africa (Transferred from Full Membership)

CHANGES OF ADDRESS

M.R.French, Director, Salisbury Snake Park, P.O.Box 3489, SALISBURY, S.Rhodesia.

L.Balarin, P.O.Box 195, SINOIA, S.Rhodesia.

PLEASE GIVE PROMPT ADVICE OF ANY CHANGE OF ADDRESS.
THE HON. SECRETARY IS NOT TELEPATHIC!

HERPETOLOGICAL ASSOCIATION OF RHODESIA. SUBSCRIPTIONS.

FINAL DEMAND. Members six months in arrears with subscriptions will henceforth forfeit membership. The November Journal will be sent out only to paid up Members. Pay up or else!

MEMBER'S NAME.....

SUBSCRIPTIONS DUE.....

D.G.Broadley,
Hon. Secretary/Treasurer,
Umtali Museum,
UMTALI, S.Rhodesia.

HON TREASURUER'S REPORT FOR THE YEAR 1960-61.

Balance Sheet for the year ending 31st March 1961.

Cash Balance as at 31st March 1960		£75.. 8.. 8.	Current Acct. Netherlands Bank	£39..17.. 9.
Capital Reserve				
As at 31/3/60	£41..19.. 0.		Cash in hand	£27.. 5.. 6.
+ Additions	£52.. 0.. 0.			
	£93..19.. 0.		Office Equipment	£67..13.. 6.
Less depreciation on Office Equipment @ 10% p.a.	£ 7..10.. 6.		Blazer Badges on hand	£18..15.. 0.
	£86.. 8.. 6.	£86.. 8.. 6.		
		£161..17.. 2.		
Less excess of Expenditure over Revenue for the year		£ 8..15.. 5.		
		£153..11.. 9.		£153..11.. 9.

Revenue and Expenditure Account for the year ending 31st March 1961.

Postages	£ 5.. 8..10.	Entrance Fees & Subscriptions	£62..17.. 1.
Bank Charges	£ 1.. 1.. 0.	Sale of Blazer Badges	£18..15.. 0.
Stationary & H.A.R.Journal	£13.. 1.. 6.	Advertisements - H.A.R. Journal	7.. 0.
Facit Portable Typewriter	£33.. 5.. 0.	Balance, being excess of Expenditure over Revenue for the year	£ 8..15.. 5.
Material for H.A.R. Flags	17.. 3.		
Sundries - General Meeting	12.. 6.		
Blazer Badges & Customs Dues thereon	£36.. 8.. 5.		
	£90..14.. 6.		£90..14.. 6.

Being a true and correct statement of the Accounts and Books of the Herpetological Association of Rhodesia as at 31st March 1961.

Donald G. Broadley
Hon. Secretary/Treasurer.

I have examined the Books, Vouchers and Accounts of the H.A.R. and in my opinion the Income and Expenditure Account and the Balance Sheet reflect a true and correct account of the same as at the 31st March 1961.

D. Kenilworth Blake,
Hon. Auditor.

JOTTINGS FROM COBRA CORNER

Dear Member,

After a hectic period spent organising the Department of Zoology at Umtali Museum, I am at last able to bring out another H.A.R. Journal. I hope that the next issue will appear on time!

In a postal vote, the motion - That clause 10 of the H.A.R. Constitution be deleted and the following clause substituted: "10. The Constitution may be amended either at a General Meeting by a two thirds majority of the members voting (either in person or by post), or, between General Meetings, by a two-thirds majority of members voting by post. Provided that not less than 51% of all paid-up Association Members cast their votes." - was carried by 26 votes to Nil, with 12 abstentions. The Constitution is now amended accordingly. Please submit any proposals for changes in the Constitution as soon as possible. Copies of the Constitution are available on request. It has been suggested that Life Membership should be established at £15 for Full Members and £7..10s ($22.50c) for Associates, are there any comments on this?

The publication of the second part of the Provisional Check List of Reptiles in this issue gives everyone an idea of the scope of our herpetofauna, but there are certainly additions still to be made. The critical areas are Northern Rhodesia; Nyasaland; the Kalahari sands of Western Matabeleland and the Eastern Districts of Southern Rhodesia, so there is plenty of scope for field work!

Good hunting,

Donald G. Broadley,
Hon. Secretary/Treasurer, H.A.R.,
Umtali Museum,
UMTALI, S.Rhodesia.

A PROVISIONAL CHECK LIST OF THE SNAKES OF RHODESIA AND NYASALAND.

ADDENDA AND CORRIGENDA. By Donald G. Broadley

Psammophis s. subtaeniatus occurs in the Shire Valley of Nyasaland according to R.C.H.Sweeney. Add an * in Column 3.

Xenocalamus transvaalensis was described by Methuen not FitzSimons

After Hypoptophis wilsoni add a species accidentally left out:

Chilorhinophis gerardi (Boulenger) Striped Burrowing-Snake

Local races: C.g.gerardi (Boulenger) ** for SR(1) and NR(2)
C.g.tanganyikae Loveridge * for NR(2)

Naja naje anchietae Bocage Add an * for S.Rhodesia in Col. 1.

Telescopus s. semiannulatus (A.Smith) There should be an * in Col 3, but it has reproduced very faintly on many copies.

Xenocalamus mechowii Peters Dr. V.FitzSimons considers the three Southern Rhodesian specimens collected in Lumane District by Roger Blaylock to be referable to X.m.inornatus Witte & Laurent.

Naja nigricollis mossambica Peters * in Column 2 may be faint.

A PROVISIONAL CHECK LIST OF THE CROCODILES, CHELONIANS AND LIZARDS OF RHODESIA AND NYASALAND.

By Donald G. Broadley.

Distribution indicated by * in the columns on right.
Key to columns. Column 1 = Southern Rhodesia.
Column 2 = Northern Rhodesia.
Column 3 = Nyasaland.

	1	2	3
CROCODYLIDAE			
Crocodylus cataphractus Cuvier Long-nosed Crocodile		*	
Crocodylus niloticus Laurenti Nile Crocodile	*	*	*
TESTUDINAE			
Testudo (Geochelone) pardalis Bell Leopard Tortoise			
Local race: T.p.babcocki Loveridge	*	*	*
Kinyxs belliana Gray Bell's Hinged Tortoise			
Local race: T.b.belliana Gray	*	*	*
TRIONYCHIDAE			
Cycloderma frenatum Peters Soft-shelled Turtle	*		*
PELOMEDUSIDAE			
Pelomedusa subrufa (Lacepede) Marsh Terrapin	*	*	*
Pelusios subniger (Lacepede) Black Terrapin	*	*	*
Pelusios sinuatus (A.Smith) Serrated Terrapin	*	*	*
GEKKONIDAE			
Hemidactylus mabouia (Jonnes) Tropical House Gecko	*	*	*
Hemidactylus mercatorius Gray Palm Gecko			*
Lygodactylus angolensis Bocage Angola Dwarf Gecko	*	*	
Lygodactylus capensis (A.Smith) Cape Dwarf Gecko	*	*	*
Lygodactylus bernardi FitzSimons Inyanga Dwarf Gecko	*		
Lygodactylus angularis Gunther Angle-throated Dwarf Gecko			
Local race: L.a.angularis Gunther		*	*
Lygodactylus picturatus (Peters) Painted Dwarf Gecko			
Local races: L.p.gutturalis (Bocage)		*	
? L.p.picturatus (Peters)	*	*	
Afroedura transvaalica (Hewitt) Transvaal Flat-Gecko	*		
Homopholis wahlbergii (A.Smith) Wahlberg's Gecko	*		

	1	2	3
Pachydactylus punctatus Peters Spotted Ground-Gecko			
Local race: P. p.punctatus Peters	*	*	*
Pachydactylus capensis (A.Smith) Cape Rock Gecko			
Local races: P.c.affinis Boulenger	*		
P.c.oshaughnessyi Boulenger	*	*	*
Pachydactylus bibronii (A.Smith) Bibron's Gecko			
Local race: P.b. turneri (Gray)	*	*	*
Pachydactylus tetensis Loveridge Tete Gecko	*		
Pachydactylus tuberculosus (Boulenger) Tubercled Gecko		*	
AGAMIDAE			
Agama hispida Linnaeus Spiny Agama			
Local races: A.h.distanti Boulenger	*		
A.h.aculeata Merrem	*	*	
A.h.armata Peters	*	*	*
Agama anchietae Bocage Anchieta's Agama			
Local race: A.a.anchietae Bocage		*	
Agama kirkii Boulenger Kirk's Rock Agama	*	*	*
Agama mossambica Peters Mozambique Tree-Agama			
Local race: A.m.mossambica Peters		*	*
Agama cyanogaster (Ruppell) Black-necked Tree-Agama	*	*	*
CHAMAELEONIDAE			
Chamaeleo dilepis Leach Flap-necked Chameleon			
Local races: C.d.isabellinus Gunther			*
C.d.dilepis Leach	*	*	*
C.d.petersii Gray			*
Chamaeleo melleri (Gray) Giant One-horned Chameleon			*
Chamaeleo goetzei Tornier Goetze's Chameleon			
Local race: C.g.nyikae Loveridge			*
Chamaeleo (Bicuspis) marshalli Boulenger Marshall's Dwarf Chameleon	*		
Brookesia nchisiensis Loveridge Nchisi Pigmy-Chameleon			*
Brookesia brachyura (Gunther) Shire Pigmy-Chameleon			
Local race: B.b.brachyura (Gunther)			*

Brookesia platyceps (Gunther) Flat-headed Dwarf-Chameleon			
Local races: B.p.platyceps (Gunther)			*
B.p.carri Loveridge			*
SCINCIDAE			
Mabuya homalocephala (Weigmann) Speckled Skink			
Local race: M.h.depressa (Peters)	*		
Mabuya quinquetaeniata (Lichtenstein) Five-striped Rock Skink			
Local races: M.q.obsti Werner	*	*	*
M.q.quinquetaeniata (Peters)	*	*	
Mabuya capensis (Gray) Cape Three-striped Skink	*		
Mabuya maculilabris (Gray) Speckle-lipped Skink			
Local races: M.m.maculilabris (Gray)		*	
M.m.comorensis (Peters)		*	*
M.m.boulengeri Sternfeld			*
Mabuya lacertiformis (Peters) Lizard-like Skink			*
Mabuya planifrons (Peters) Taita Skink		*	
Mabuya striata (Peters) Common Two-striped Skink	*	*	*
Mabuya bocagii Boulenger Bocage's Three-striped Skink			
Local race: M.b.mlanjensis Loveridge			*
Mabuya hildae Loveridge Nyika Three-striped Skink			*
Mabuya varia (Peters) Variable Ground-Skink			
Local races: M.v.varia (Peters)	*	*	*
M.v.nyikae Loveridge			*
Mabuya longiloba Methuen & Hewitt Long-lobed Skink			
(Formerly known as Mabuya damarana, which Mertens has found to be a synonym of Mabuya varia.)			
Local races: M.l.longiloba Methuen & Hewitt	*		
M.l.rhodesiana Broadley	*		
Riopa sundevallii (A.Smith) Sundevall's Writhing-Skink			
Local race: R.s.sundevallii (A.Smith)	*	*	*
Riopa modesta (Gunther) Mpwapwa Writhing Skink			
Local race: R.m.modesta (Gunther)			*
Riopa johnstoni (Boulenger) Eastern Serpentiform Skink			*
Riopa anchietae (Bocage) Western Serpentiform Skink		*	

	1	2	3
Ablepharus wahlbergii (A.Smith) Wahlberg's Snake-eyed Skink	*	*	*
Ablepharus seydeli Witte Seydel's Snake-eyed Skink		*	
Ablepharus anselli FitzSimons Ansell's Snake-eyed Skink		*	
Scelotes limpopoensis FitzSimons Limpopo Sand-Skink	*		
Scelotes arnoldi (Hewitt) Vumba Skink	*		*
Scelotes tetradactylus (Peters) Four-toed Skink			
Local race: S.t.tetradactylus (Peters)			*
Melanseps ater (Gunther) Lesser Limbless-Skink			
Local races: M.a.ater (Gunther)			*
M.a.misukuensis Loveridge			*
Typhlacontias ngamiensis FitzSimons Ngami Limbless-Skink	*	*	
Typhlacontias gracilis (Roux) Zambezi Limbless-Skink		*	
Acontias plumbeus Bianconi Greater Limbless-Skink			
Local races: A.p.plumbeus Bianconi	*		
A.p.broadleyi FitzSimons	*		
A.p.occidentalis FitzSimons	*		
Typhlosaurus bicolor Hewitt Bicolored Limbless-Skink	*		
Typhlosaurus ? lineatus Boulenger Striped Limbless-Skink	*		
CORDYLIDAE			
Cordylus cordylus (Linnaeus) Cape Girdled-Lizard			
Local races: C.c.jonesii (Boulenger)	*		
C.c.tropidosternum (Cope)	*	*	*
C.c.rhodesianus (Hewitt)	*		
Platysaurus mitchelli Loveridge Pigmy Flat-Lizard			*
Platysaurus torquatus Peters Tete Flat-Lizard	*		
Platysaurus guttatus A.Smith Greater Flat-Lizard			
Local races: P.g.nyasae Loveridge			*
P.g.pungweensis Broadley	*		
P.g.rhodesianus FitzSimons	*		
P.g. subspecies	*		
Gerrhosaurus validus A.Smith Giant Plated-Lizard			
Local race: G.v.validus A.Smith	*	*	*
Gerrhosaurus major Dumeril Major Plated-Lizard			
Local race: G.m.grandis Boulenger	*	*	*

	1	2	3
Gerrhosaurus nigrolineatus Hallowell Greater Striped Plated-Lizard			
Local races: G.n.nigrolineatus Hallowell	*	*	*
G.n.bulsi Laurent		*	
(NOTE. G.n.anselli Broadley is a synonym of G. auritus bulsi Laurent. Its affinities lie with nigrolineatus, for intergrades occur in a large area of north-west Rhodesia & Angola.			
Gerrhosaurus flavigularis Weigmann Lesser Striped Plated-Lizard			
Local race: G.f.flavigularis Weigmann	*	*	*
Tetradactylus fitzsimonsi Hewitt Long-tailed Seps			
Local race: T.f.simplex Laurent		*	
Chamaesaura macrolepis (Cope) Large-scaled Snake-Lizard	*		
Chamaesaura miopropus Boulenger Abercorn Snake-Lizard		*	
LACERTIDAE			
Holaspis guentheri Gray Serrate-toed Tree-Lizard			
Local race: H.g.laevis Werner			*
Nucras intertexta (A.Smith) Variegated Sand-Lizard			
Local races: N.i.holubi (Steindachner)	*		
N.i.ornata (Gray)	*	*	*
Latastia johnstoni Boulenger Johnston's Sand-Lizard	*	*	*
Eremias lugubris (A.Smith) Black & Yellow Sand-Lizard	*		
Ichnotrophis capensis (A.Smith) Cape Rough-scaled Sand-Lizard	*	*	*
Ichnotrophis squamulosa Peters Mozambique Rough-scaled Sand-Lizard	*	*	*
AMPHISBAENIDAE			
Zygaspis quadrifrons (Peters) Common Worm-Lizard			
Local race: Z.q.capensis (Thominot)	*	*	
Chirindia swynnertoni Boulenger Swynnerton's Worm-Lizard	*		
Monopeltis anchietae (Bocage) Anchieta's Worm-Lizard	*		
Monopeltis capensis (A.Smith) Southern Worm-Lizard			
Local race: M.c.capensis (A.Smith)	*		
Monopeltis ocularis FitzSimons Gordonia Worm-Lizard		*	
Monopeltis sphenorhynchus Peters Inhambane Worm-Lizard			*

	1	2	3
Tomuropeltis ellenbergeri (Angel) Ellenberger's Worm-Lizard		*	
Tomuropeltis jallae (Peracca) Jalla's Worm-Lizard		*	
Tomuropeltis pistillum (Boettger) Zambezi Worm-Lizard	*	*	
VARANIDAE			
Varanus niloticus (Linnaeus) Nile Monitor or Water Leguuan			
Local race: V.n.niloticus (Linnaeus)	*	*	*
Varanus exanthematicus (Bosc) Savanna Monitor or Land Leguuan			
Local race: V.e.albigularis (Daudin)	*	*	*

NOTE: It must be emphasised that the above Check List is a very tentative one. A number of the subspecies listed are of doubtful status, while some of those synonymised may yet prove to be valid. The distributions of many forms are poorly known, particularly in Northern Rhodesia, and much more material is required. I am most anxious to obtain long series of the following forms: Crocodylus cataphractus; Hemidactylus mercatorius; Lygodactylus spp.; Afroedura transvaalica; Pachydactylus capensis; Pachydactylus tuberculosus; Agama hispida; Agama anchietae; Agama kirki (♂♂only); Agama mossambica; Chamaeleo goetzei; Brookesia spp.; Mabuya spp.; Riopa anchietae; Riopa johnstoni; Ablepharus spp. (N.Rhodesia); Scelotes spp.; Melanoseps ater; Typhlacontias spp; Acontias spp.; Typhlosaurus spp.; Platysaurus spp.(TOP PRIORITY); Tetradactylus spp.; Chamaesaura spp.; Holaspis; Nucras; Latastia; Eremias; AMPHISBAENIDAE; Varanus exanthematicus(N.Rhodesia & Nyasaland ONLY).

ENGLISH COMMON NAMES FOR SNAKES - SUPPLEMENT. By D.G.Broadley

I have been disappointed in the response to my appeal for comments and criticisms on the list of names put forward in the last H.A.R. Journal. Only two members have put forward alternative names, I had expected a storm of controversy!

Philothamnus hoplogaster = Short-tailed Green-Snake (proposed R.C.H. Sweeney) The shorter tail is not very obvious to the layman and the herpetologist who takes scale counts is unlikely to use a "common" name. While I agree that the names proposed for P.hoplogaster and P.irregularis do not mean much geographically, they are at least well established.

Crotaphopeltis hotamboeia = White-flecked Snake (Sweeney). Rejected as not diagnostic, most adult S.R. specimens lack the white spots.

Psammophis sibilans = Sun Snake (Sweeney, a translation of a Chinyanga name for the species) A nice concise name, but not really diagnostic as P.sibilans prefers shady habitats.

Psammophis subtaeniatus = Stripe-bellied Sun-Snake (Sweeney) Quite appropriate for this snake of dry sandveld and rock outcrops, could perhaps be shortened to "Striped Sun-Snake".

Dromophis lineatus = Track Snake (proposed J.W.Steward, who objects to "Striped Racer", as this name is used for several solid-toothed American snakes) I am quite happy to accept this change.

Elapsoidea sundevallii = Sundevall's Garter Snake (I make this change as Steward has pointed out that "Southeastern Garter-Snake" only applies to E.s.decosteri.)

Dendroaspis angusticeps = Pale-mouthed Mamba (Sweeney) Diagnostic,
Dendroaspis polylepis = Black-mouthed Mamba but unwieldy; rejected.

Vipera superciliaris = Domino Viper (Sweeney, referring to the large black ventral spots) This is an attractive name, perhaps more suitable than "Swamp Viper".

NOTES ON SOME JUVENILE MAMBAS. By Donald G. Broadley.

Following up Desmond Vesey-FitzGerald's article in the February Journal, I have checked through all the mambas in the National Museums collections and can now give data for four more juveniles.

Dendroaspis polylepis polylepis (Gunther) Black Mamba

NMSR/M.1884 Central Estates, Umvuma, S.Rhodesia (D.S.Rider)
Length - 663 (535+128) mm. Midbody scale rows 23; ventrals 275; anal divided; subcaudals 121. Head shields normal. Umbilical scar distinct. Disgorged by a Psammophis s. sibilans.

NMSR/M.3912 Trelawney, S.Rhodesia
Length - 709 (560+149) mm. MSR 25; V 261; A/D; SC 121. Third upper labial entering orbit between middle and lower preoculars on both sides. Umbilical scar distinct.

Dendroaspis angusticeps (A.Smith) Eastern Green Mamba

NMSR/M.4481 Mwaya, Tanganyika (C.J.P.Ionides)
Length - 888 (700+188) mm. MSR 19; V 206; A/D; SC 100. Only 3 postoculars on left side. No umbilical scar visible.

Dendroaspis jamesoni jamesoni (Traill) Jameson's Mamba

NMSR/M.4135 Metet, Cameroons
Length - 807 (625+182) mm. MSR 17; V 222; A/D; SC 111. Faint trace of the umbilical scar.

SNAKES AND SNAKEBITE IN SOUTH AFRICA.

By P. Agerholm Christensen, M.D. Copenhagen, Dip. Bact., S.A.I.M.R.

There are about fifty distinct species of venomous snakes in South Africa, but most are relatively harmless, either because they are rare or timid or because their biting apparatus is ill adapted for inflicting effective bites. This applies to all the back-fanged snakes which have small, permanently erect and grooved fangs at the

back of the upper jaw. They make up about half the total number of venomous snakes in the Republic. The Boomslang, Dispholidus typus, is the best known and probably the most venomous member of this group, but pites by skaapstekers, Psammophylax rhombeatus and P. tritaeniatus, and by the Bird Snake, Thelotornis kirtlandii, are also on record. all the other venomous snakes belong to one of three families, Hydrophiidae, Elapidae and Viperidae, and have hollow fangs placed forward in the upper jaw. The fangs of the Hydrophiidae, the sea snakes, and the Elapidae, the elapine snakes of the cobra type, are permanently erect, whereas the relatively larger fangs of the Viperidae, the true vipers, are mounted on moveable bones and are erected during biting.

The only sea snake, Pelamis platurus, found in South African coastal waters is, at most, a minor hazard, although it is known to secrete a venom of the elapine type.

Disregarding some small and rare, and therefore unimportant, coral and garter snakes, the South African Elapidae are the Ringhals, Hemachatus haemachates, common in most parts of the country; the Cape Cobra, Naja nivea, essentially confined to the Cape; the Spitting or Black-necked Cobra, Naja nigricollis, also called the M'fesi, which is distributed widely in Africa including most parts of the Republic, and the very large Egyptian Cobra, Naja haje, which may be encountered anywhere outside the south-westerly parts of South Africa. Another cobra, Naja anchietae, is considered to be a race of N. haje, and Naja melanoleuca, the Black-lipped Forest Cobra, though seen in Natal, has its proper home in other parts of Africa. The Black and the Green Mamba belong to this family. Until recently they were considered to be variants of the same species, Dendroaspis angusticeps, but this name is now reserved for the Green Mamba, the Black being listed separately as D. polylepis.

Of the eleven members of the family Viperidae, seven belong to the genus Bitis. The commonest and most dangerous is the large, ubiquitous puff-adder, B. arietans. With the exception of the even larger and fearsome looking B. gabonica, which has recently been observed inside the borders of the Republic, other members of the genus are small; they are not widely distributed and are seldom seen. The better known of these are the Berg Adder, B. atropos, and the two Horned Adders. B. cornuta and B. caudalis. The genus Causus is represented by the two night adders, C. rhombeatus and C. defilippii, which are common but not agressive, and the weakness of their venoms makes them less dangerous than is generally believed. Finally there are two vipers in the genus Atractaspis, the Burrowing Adders, which spend their time underground and whose fangs are so overdeveloped that they can be projected from the sides of the closed mouth. Heavy rains or floods may force these adders to the surface, but bites are unlikely unless they are picked up and handled.

The killing action of elapine venom is due to toxins acting on the neuro-muscular junctions and possibly also on the respiratory centre in the medulla oblongata. These toxin factions, not yet identified, are distinct from the many enzymes demonstrated in such venoms, e.g. haemolysin, cholinesterase, protease and phosphatse. There may be some burning pain and soft swelling after elapine bites, but the

local effect is usually slight. the speed with which general symptoms appear varies from minutes to hours, depending on the species of snake and the ammount of venom injected. Any of the following symptoms may be observed: drowsiness and lassistude, nausea and vomiting, salivation, sweating, ptosis, unsteady gait, slurred speech with a feeling of thickness in the throat, abolition of eye movements and of accommodation, and a gradually increasing difficulty in breathing. Death due to respiratory failure may occur in from minutes to hours after the accident, otherwise the symptoms will gradually wane and leave no sequelae.

Viper venoms, referred to as tissue- or cyto-toxins, contain a number of constituants whose combined action can cause devastating tissue destruction. Most of the serious bites reported have been inflicted by puff adders. Intense local pain is felt, and an oedematous swelling, which sometimes is widespread and discoloured by extravasated blood, may itself be a serious complication when some part of the head or neck is bitten - a common occurrence in dogs and grazing animals - and mechanical choking has undoubtedly played a part in the death of dogs. Nausea, vomiting, thready pulse, dilated pupils, pallor, sweating, respiratory distress, and other signs of shock may develop. Recovery is slow because much tissue repair may be needed and deformity or loss of a finger, toe, or limb, and even death, may be the outcome of serious bites.

The true incidence of snakebite is not known, but it is lowest in the winter. Most bites occur in the coastal areas, particularly in Natal, but many are recorded from the Lowveld and near the large population centres on the Highveld. Of animals treated with serum dogs make up about one half and cattle about one third. Among human beings, more males than females are bitten, and in Europeans relatively many are children, presumably because they run around barefooted. More than half the bites implicate the foot or the ankle and the risk is therefore much reduced by footwear. In most instances the culprit is either not seen or is not identified, but the puffadder heads the list of those identified, followed by the night adder and, thereafter, by the ringhals, the Cape cobra, and the mambas, each of which is responsible for about the same small number of bites.

The early administration of potent serum comes first in treatment, but certain first-aid measures may be of value, particularly if serum is not available. A tourniquet applied soon after elapine bites is of definate value, but the oedema produced by it may favour the action of the venom in viper bites. Incisions made at the bitten site are of doubtful value and may be dangerous, but suction should be applied whether or not incisions have been made, either mechanically or by the mouth protected by a sheet of thin rubber. That venom can be removed in this manner has been proved by the serious envenomation observed in "suckers" who used the unguarded mouth. Local application of permanganate should be avoided, but local infiltration with a sterile 5% solution of soap may be tried in elapine but <u>not</u> in viperine bites. This procedure was suggested by Indian workers and its beneficial effect has been confirmed in this Institute. The injection of magnesium sulphate still has its pro-

ponents, but has been proved useless in this laboratory. Cryotherapy deserves mention, but may be attended by dangers if carelessly applied. The patient should be reassured and kept quiet and warm. Depressant medication should be avoided. Antihistaminics, ACTH and cortisone are of value when serum reactions are to be feared, but probably have no therapeutic effect on the envenomation. Blood transfusions have been used with apparent success in boomslang bite, which is characterized by grave haematic disorders, but, as the severe bleeding tendency observed in patients bitten by this snake is presumably at least partly due to defibrination of the blood by the powerful clotting agent contained in the venom, it cannot be excluded that transfusions with heparinized blood, or the use of heparin alone, would be more effective. Heparin has been shown to antaginize the coagulent venoms of Indian and Australian snakes in experiments carried out by workers in these countries.

As already stated, the injection of serum is the most important form of treatment if potent serum is available against the venom of the snake that inflicted the bite. The following sera, all enzyme-refined, are produced at the South African Institute for Medical Research.

1. Polyvalent serum prepared with the venoms of the Ringhals, the Cape Cobra, and the Puff Adder. 2. Polyvalent tropical serum prepared with B. gabonica venom in addition to those just mentioned. 3. Monovalent serum against the Saw-scaled Viper Echis carinatus. 4. Bivalent serum prepared with the venoms of the Green Mamba (D. angusticeps) and the tropical mamba D. jamesoni.

The ordinary polyvalent serum is intended for use in Southern Africa and is extremely potent against puff adder venom, of measurable potency against night adder venom and, excluding the mambas, highly effective against the venoms of all the elapine snakes likely to cause accidents in Africa. The polyvalent tropical serum has the same actions with, in addition, a powerful effect on B. gabonica venom. This serum, like that against E. carinatus venom, is intended for use outside the Republic in territories where B. gabonica and E. carinatus abound. It has recently been shown in this Institute that the venoms of the Green and the Black Mambas are immunologically distinct and that both differ from the venom of the tropical mamba D. jamesoni, even if there is a slight immunological similarity between D. polylepis venom and D. jamesoni venom. Bites by the Green Mamba, D. angusticeps, should be treated with bivalent serum (No.4 above) and, until a trivalent (D. angusticeps, D. jamesoni, D. polylepis) serum is available, bites by the Black Mamba should be treated with polyvalent and/or bivalent serum, both of which have some effect on D. polylepis venom. (Editor's Note: Since this article was written, S.A.I.M.R. have produced a Black Mamba Antivenom.)

Serum should be given as soon as possible, in sufficient quantity, and by the best route. The dose cannot be stated dogmatically, but up to 50 or 60 ml may be needed in serious elapine bites, although less may suffice in viper bite. The dose should not be reduced for children or small animals, but rather should be increased. The

dish by putting his head under water and going round and round.
Another Naja melanoleuca in the Snake Park appears to be interested only in toads. Both snakes have bitten themselves accidentally with no apparent ill effects.

SINDEBELE NAMES FOR REPTILES AND AMPHIBIANS. By P.R.Fox.

Tortoise	Fudu-lwa-ganga
Terrapin	Fudu-lwa-manzi
Gecko	Stemamuntu
Agama	Gulugwe or Dantabe
Chameleon	Unwabu
House Skink	Umpankwa
Girdled Lizard(Cordylus)	Maqandopole
Water Leguaan	Xum
Rock Leguaan	Gwababa
Blind Snake(Typhlops)	Nyoga-yo-hlaba
Python	Inhlatu
Common House Snake	Spakupaku
Green Water Snake	Inhlangwani
Tiger Snake	Fungule
Boomslang	Inhlanhlo
Vine Snake	Konkati
Three-lined Grass-Snake	Inhlanga
Striped Sand Snake	Umalazi
Eggeater	Ingangocha
Egyptian Cobra	Iloyi
Spitting Cobra	Impimpi
Black Mamba	Ginyambila
Puffadder	Bululu
Horned Viper	Chipukupaku
Bush Snake	Inynande-eye-zulu
Frogs & Toads	Xlaxo

ANOTHER SUCCESSFUL HATCHING OF SNAKE EGGS. By A. John Boughey.

In May of last year I managed to hatch some Crotaphopeltis eggs, using an extremely simple method, which merely requires a small initial effort. This year a batch of eight House Snake (Boaedon f. fuliginosus) eggs were all successfully hatched.

ponents, but has been proved useless in this laboratory. Cryotherapy deserves mention, but may be attended by dangers if carelessly applied. The patient should be reassured and kept quiet and warm. Depressant medication should be avoided. Antihistaminics, ACTH and cortisone are of value when serum reactions are to be feared, but probably have no therapeutic effect on the envenomation. Blood transfusions have been used with apparent success in boomslang bite, which is characterized by grave haematic disorders, but, as the severe bleeding tendency observed in patients bitten by this snake is presumably at least partly due to defibrination of the blood by the powerful clotting agent contained in the venom, it cannot be excluded that transfusions with heparinized blood, or the use of heparin alone, would be more effective. Heparin has been shown to antaginize the coagulent venoms of Indian and Australian snakes in experiments carried out by workers in these countries.

As already stated, the injection of serum is the most important form of treatment if potent serum is available against the venom of the snake that inflicted the bite. The following sera, all enzyme-refined, are produced at the South African Institute for Medical Research.

1. Polyvalent serum prepared with the venoms of the Ringhals, the Cape Cobra, and the Puff Adder. 2. Polyvalent tropical serum prepared with B. gabonica venom in addition to those just mentioned. 3. Monovalent serum against the Saw-scaled Viper Echis carinatus. 4. Bivalent serum prepared with the venoms of the Green Mamba (D. angusticeps) and the tropical mamba D. jamesoni.

The ordinary polyvalent serum is intended for use in Southern Africa and is extremely potent against puff adder venom, of measurable potency against night adder venom and, excluding the mambas, highly effective against the venoms of all the elapine snakes likely to cause accidents in Africa. The polyvalent tropical serum has the same actions with, in addition, a powerful effect on B. gabonica venom. This serum, like that against E. carinatus venom, is intended for use outside the Republic in territories where B. gabonica and E. carinatus abound. It has recently been shown in this Institute that the venoms of the Green and the Black Mambas are immunologically distinct and that both differ from the venom of the tropical mamba D. jamesoni, even if there is a slight immunological similarity between D. polylepis venom and D. jamesoni venom. Bites by the Green Mamba, D. angusticeps, should be treated with bivalent serum (No.4 above) and, until a trivalent (D. angusticeps, D. jamesoni, D. polylepis) serum is available, bites by the Black Mamba should be treated with polyvalent and/or bivalent serum, both of which have some effect on D. polylepis venom. (Editor's Note: Since this article was written, S.A.I.M.R. have produced a Black Mamba Antivenom.)

Serum should be given as soon as possible, in sufficient quantity, and by the best route. The dose cannot be stated dogmatically, but up to 50 or 60 ml may be needed in serious elapine bites, although less may suffice in viper bite. The dose should not be reduced for children or small animals, but rather should be increased. The

intravenous route is that of choise in elapine bites, whereas, whenever it is anatomically possible, as much serum as possible should be used to infiltrate the bitten area in cases of viper bite.

The inflammation which may be set up when venom from one of the two "spitting" snakes, the Ringhals and the Black-necked Cobra, hits an eye should be treated with serum instillation, not with injection.

Refined anti-snakebite sera are costly to produce and the treatment of bitten animals with serum must often be an uneconomical undertaking. More often than not the veterinary profession is faced with a difficult diagnosis and an unavoidable delay which may make serum therapy pointless. It is therefore natural that the production of such sera has become the concern of those engaged in the preparation of therapeutic substances for human use, but it is noteworthy that the pioneers in this type of research in South Africa were veterinary surgeons; in 1912 W. Horner Andrews published reports on experimental snakebite in animals and the production of polyvalent anti-snakebite serum was begun as early as 1901 by H. Watkins-Pitchford and was described in 1915 by his co-worker, D.T. Mitchell.

Reprinted from The Pennant Veterinary Digest No. 31, October 1960, by permission of the publishers, the Sandown Veterinary Organization, Johannesburg.

SOME NOTES ON A NAJA MELANOLEUCA AT DURBAN SNAKE PARK.

By W.W.Armitage.

This Forest Cobra was caught at Matubatuba, Zululand (the southern limit of N. melanoleuca's range) on 23rd January 1959. It then measured 15 inches in length, but in two and a half years of captivity it has grown to 3½ feet, although it has surprisingly sloughed only a few times.

The cobra normally lies under some stones in the corner of its cage, but when the glass door is opened it comes out, having connected the movement with food. This was demonstrated when the cage door was opened to insert a small Philothamnus hoplogaster. The N. melanoleuca immediately stuck its head out and then came forward to take the Green Snake, which he missed with the first two or three attempts to take it. When the cobra eventually did sieze the Philothamnus, he retired to his den to devour his prey.

I was told by Mr. R.H.Parker (Manager of Durban Snake Park) that this N. melanoleuca will take any small snake, although venomous species have not yet been tried. It also takes frogs, toads, chameleons and mice, once it made several attempts to take a fish which was to large for it to eat. Numerous different species of lizards have been eaten, including Gerrhosaurus flavigularis. During the process of eating the Gerrhosaurus a small round pebble was also swallowed and it has not been seen since.

On another occasion the cobra chased a small lizard which ran behind the water dish, the snake then proceeded to search in the water

dish by putting his head under water and going round and round.
Another Naja melanoleuca in the Snake Park appears to be interested only in toads. Both snakes have bitten themselves accidentally with no apparent ill effects.

SINDEBELE NAMES FOR REPTILES AND AMPHIBIANS. By P.R.Fox.

Tortoise	Fudu-lwa-ganga
Terrapin	Fudu-lwa-manzi
Gecko	Stemamuntu
Agama	Gulugwe or Dantabe
Chameleon	Unwabu
House Skink	Umpankwa
Girdled Lizard(Cordylus)	Maqandopole
Water Leguaan	Xum
Rock Leguaan	Gwababa
Blind Snake(Typhlops)	Nyoga-yo-hlaba
Python	Inhlatu
Common House Snake	Spakupaku
Green Water Snake	Inhlangwani
Tiger Snake	Fungule
Boomslang	Inhlanhlo
Vine Snake	Konkati
Three-lined Grass-Snake	Inhlanga
Striped Sand Snake	Umalazi
Eggeater	Ingangocha
Egyptian Cobra	Iloyi
Spitting Cobra	Impimpi
Black Mamba	Ginyambila
Puffadder	Bululu
Horned Viper	Chipukupaku
Bush Snake	Inynande-eye-zulu
Frogs & Toads	Xlaxo

ANOTHER SUCCESSFUL HATCHING OF SNAKE EGGS. By A. John Boughey.

In May of last year I managed to hatch some Crotaphopeltis eggs, using an extremely simple method, which merely requires a small initial effort. This year a batch of eight House Snake (Boaedon f. fuliginosus) eggs were all successfully hatched.

The parent snake, about 2' 9" in length, was caught on 1st December 1959 by my mother. No mating occured in captivity, so that fertilization must have taken place some time before capture. The snake laid its eight eggs on the evening of 1st November 1960. These were placed in a jar with a ground glass top containing a layer of moist leaves on some wet soil, having been removed from the cage about 12 hours after being laid. The top of the jar was then tightly closed and left so until the snakes began to hatch.

This event took place on the evening of 23rd February 1961, when the first egg hatched, followed by two more on the 25th, three on the 26th and the last two on the 27th. A curious phenomenon was that the hatchling often stayed in the egg for anything up to 12 hours after the initial cut had been made in the egg-shell. During this time it made up to a dozen other slits in the shell.

The progeny were extremely lively and willing to strike, sloughing their skins about two days after birth. When supplied (not immediately) with some very small lizards, they were not at all interested. However they readily ate 3 day-old mice about a month after birth and 3 mice out of five offered were taken a little later, although it is not known whether the same three snakes fed on each occasion. Since then they have eaten fairly readily, although still not taking any lizards.

During the whole period between laying and hatching the eggs retained their immaculate appearance. Some other eggs, however, which received the same treatment, went mouldy and were infested, at least externally with small, white, worm-like creatures, which may have been part of the cause of their failure to hatch. The only snag to this method comes in the fact that the eggs need regular watching to ensure that the snakes do not hatch and then die from suffocation because the jar top has not been removed.

It may be said that House and Herald Snake eggs are relatively easy to hatch in any case, but even if this is the case, this method requires no "nursing" and for these snakes at least appears to be fairly satisfactory. Obviously the real test will come when the method is applied to other eggs, which are more difficult to hatch, and this will be tried at the earliest opportunity.

AN APPEAL FOR SPECIMENS OF RANA DARLINGI. By D.G.Broadley.

John Poynton (University of Natal) is far advanced with his revision of the Amphibia of Southern Africa, but material from Rhodesia is still needed. Top Priority are adult males of the Golden-backed Grass-Frog (Rana darlingi). This handsome frog is gold dorsally and chocolate-brown to black laterally and is often found in damp grassy places, usually in colonies. It has been taken on the Old Gatooma strip road near Mount Hampden; at Cleve--land Dam, Salisbury; Melfort and Old Umtali. Adults are about 2½ inches in length from snout to vent.