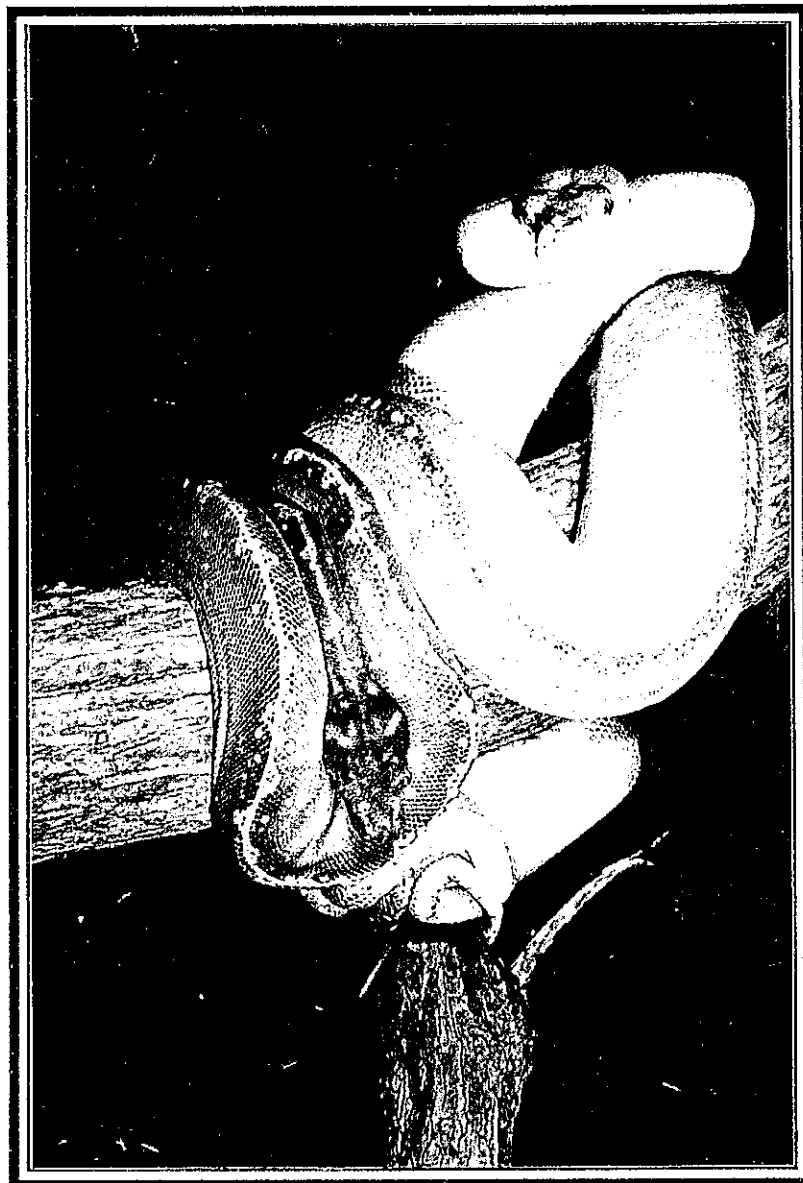


CHONDRO

The Cape York Herpetological
Society Journal
Vol.1No.1



CHONDRO

JOURNAL OF THE CAPE YORK HERPETOLOGICAL SOCIETY

1993 VOLUME 1 NUMBER 1

COVER PHOTOGRAPH BY TIM HAWKES. GREEN PYTHONS
CHONDROPYTHON VIRIDIS COPULATING, TARONGA PARK ZOO.

Society formed to study reptiles



FOUR Cairns residents have combined their knowledge to establish the Cape York Herpetological Society to collect and disseminate information about snakes, lizards, tortoises, crocodiles, sea snakes, and other reptiles. The society will provide a check list of local species and will identify any reptile species or, where necessary, rescue these species from being killed or harmed by people, to allow further studies. The secretary of the society, Mr Chris Shaw, said a newsletter would be published

from time to time with locally written papers which would be distributed across the world to museums and other animal societies. Expeditions would also be organised for the society to gather information on the identity, incidence, and distribution of herpetological species; and to initiate research into aspects of habitat, behavior, breeding cycles, and mating habits. The society will meet on the last Friday of every month at 7.30 pm at 87 Marshall St, Machans Beach. The aim of the meetings will be to

exchange information in a relaxed and informal manner. New members are welcome.

• The four foundation members of the society — from left at rear — Mr Ken Bullen, Mr William Hosmen, Mr Andrew Dennis and Mr Chris Shaw, are pictured at the Australian Crocodile Park on the Captain Cook Highway, Palm Cove. The man in the safari hat is the park director, Mr Graham Morris, who is inspecting a nest made by himself in the hope that the crocodiles will breed. — Francis photo.

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foreword

FOREWORD

Well, here it is!!! The very first journal of the Cape York Herpetological Society (CYHS).

In February 1982 the founding members (William & Janet Hosmer, Chris Shaw, and Ken Bullen) met at Bill Hosmer's house at Machan's Beach to discuss the formation of the society. According to the records of this inaugural meeting much beer was consumed, and it was decided "that members (were to) bring their own "grog"" to meetings; and to this day some of our members would argue that discussing reptiles and drinking beer are synonymous with one another!! However, in all fairness to these folk, to whom we must be grateful for our society's name (among other things, not the least of which was their enthusiasm in starting the society in the first place) one of the major aims discussed was; "Education and dissemination of information at all levels, by whatever means available, on snakes, lizards, tortoises, crocodiles, marine snakes, frogs, toads, and any other reptile or group of reptiles". (This I am pleased to say actually constitutes a major component of the aims of our present day society). The original chapter of the CYHS continued for some years, until sometime in 1987, when interest ebbed and proceedings were discontinued.

To the present day; the "new" CYHS has grown rapidly since the first meeting in December 1992 and can now boast a membership of 28 which to me can only be interpreted as an indication of a growing awareness and interest in Australia's herpetofauna. Living in north Queensland we are lucky to be in an area which provides us with exposure to a wide variety of fascinating, and often unique, reptiles and amphibians. Being able to meet with people who share similar interests, and hence being able to discuss one's observation and experiences of these forms of fauna, is to me a very pleasurable pastime. I feel that the CYHS can claim to be successful to date with respect to providing a forum for these discussions.

We have had some very informative and interesting guest speakers at our meetings so far, to whom we are grateful for their time and involvement. Thanks must also be extended to these people for the summaries of their presentations, which have been included in this journal and are therefore always available for easy reference. A number of quality guest speakers have been approached to deliver talks at up coming meetings.

Many thanks to Mrs Enaide Freeman of WildWorld, whose generosity has provided us with access to a photocopier to produce this journal, at a cost of next to nothing.

To those people who have managed to attend one more of the field trips I am sure that you would have enjoyed seeing some of the subjects of our interest in situ. To those who have been unable to attend I urge you to make every effort to do so in the future. I think you will find

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ample encouragement when viewing the species list from these excursions! The data collected on these trips has been forwarded to the relevant authorities, and will be utilised when management plans are established for some of the wet tropics areas around Cairns. It is good to be in a position to be able to have input into such important matters.

To return briefly to my opening comments; upon reviewing the records of society I found a number of references to intentions to publish a journal, however I have been unable to ascertain whether this actually reached fruition or not. If my claims prove to be incorrect, I will happily stand corrected. I feel obligated to say we should not allow the first journal to be our last, as it would be a shame if we did not attempt to record the wealth of information and observation we will undoubtedly accumulate through our combined energies. To ensure that the journal continues it is imperative that we all, as members of the society, contribute material. I have no doubt that all of us have snippets of info, or personal observations on various aspects of herpetology that others will find of interest or value. So DON'T hesitate; it's YOUR journal!!

Enjoyable reading!

Michael O'Brien

MICHAEL O'BRIEN
Secretary, CYHS.

FINANCIAL REPORT FOR PERIOD 4.1.93 TO 25.4.93

INCOME		EXPENDITURE	
MEMBERSHIPS	\$380.00	POSTAGE	\$19.80
OLD CYHS FUNDS	\$187.00	COMINOS HOUSE	\$45.00
DONATIONS	\$45.00		
BANK INTEREST	\$00.06		
TOTAL	\$612.00		\$64.80
BALANCE AT 25.4.93	\$547.26		

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REPORT FROM THE PRESIDENT

Firstly I would like to thank, on behalf of all the CYHS members Tim Hawkes, Michael Anthony and Michael O'Brien for the outstanding journal you are now reading.

The amount of personal time, money and enthusiasm from these three fanatical herps to get the club and this journal together is much appreciated. I tip my hat to you guys.

My contribution to this collectors item masterpiece is a humble report on Undara's reptiles. For those who do not already know I left my employment at WildWorld, to take up the position of Savannah guide at the Undara Lava Tubes. The Undara Lava Lodge is situated 40 km southeast of Mt. Surprise.

I started work on Easter Monday and I believe it to be one of the best decisions I have made for a while. Enough of this personal sentimental slop.....

REPTILES OF THE UNDARA LAVA TUBES

My first week on the job I spied a Black Whip snake on the track to the tubes, also Frill-necked lizards which were so engrossed in sunning themselves on these tracks, that even I could catch them to show the guests. I had more luck catching them than I did demonstrating their frills in the erect position. Both lay in my hand on their backs or sides (or wherever I placed them) and played "doggo". No frill-up, no movement, no nothing! Until, of course, I placed them back on the ground, where they immediately raced off at such speeds that I could never have caught them in the first place if this had been their original move.

A 4 foot Green Tree snake in the middle of the road put up quite a chase until I finally grabbed HIM instead of where HE WAS a split second before. Not bad for an old man I thought! The guests loved it and Harry Butler was put on the back-burners of their minds forever!

Exciting things like Striped skinks and Bynoes geckos were found at the lava tube "roof collapses". These roof collapses are nearly as interesting as the lava tubes themselves (semi-evergreen vine thicket rainforest in the heart of open woodland). This vegetation is similar to that of the Forty Mile Scrub which they tell me is the same as some parts of Madagascar and a minute area on the east coast of Africa-evidence supporting the Gondwanaland theory. Some other species of skink I have observed in this rainforest are unidentifiable to me (I

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must add that so was my first Bynoes gecko until Michael Anthony came to the rescue!). Anyway my greatest surprise was to be found deep within the lava tubes themselves. I could rave on about the lava tubes themselves for quite some time, leaving you all in suspense of what the rare treasure of a reptilian nature I had the good fortune to find, examine and release. I honestly believe that I am the first person to acknowledge the existence of such an extraordinary find! Have I got you all going yet? Good! But before I reveal my gem, my "piece de resistance", I will quickly relate to you all what I found, before I found my lava tube snake treasure (there's a hint to hang on to for a moment).

About 200 metres inside "Wind Tunnel" a guest in the pitch black with a very dull torch screamed out "Snake!", "Snake!" (Embarrassingly enough the Harry Butler take-off had walked right past it). In two seconds I was at the rescue of my valued client and gazing down at an adult Childrens python. He was in superb condition except for four or five points sticking out of its side. Further examination revealed a very fat adult Childrens python with at least three small insectivorous bats inside it. The points sticking out were obviously the wings of bats in "consumption disarray". The head of the snake looked small compared with body girth. There are 5 recorded species of insectivorous bat living in the tube system and all in very, very large numbers. I immediately imagined many, many happy Childrens pythons, but nowhere near as happy as I would be after I entered the next tube and found my prize. Before I finally expose my special Squamate I must give you an account of one team of scientific researchers who explored some of the lava tube system in 1989. "Operation Raleigh" explored the Undara volcano crater and associated lava tubes. One section that they explored had a very, very narrow entrance (you literally had to crawl into it). This section went for 1.3 kilometres. Due to the lack of oxygen inside the tube, it took researchers 4 days to set up oxygen stations along the way. Deep inside the tube the researchers found a small frog. In their excitement they picked the small frog up to examine and identify it. Within a few minutes of them holding the frog it died. The temperature of their hands was too extreme for the poor little frog's metabolism. This is true fact, documented in their final report. I do not know if the frog was ever positively identified.

They also found 11 sub-species of insects, all new to science. Dramatic changes were noticed in the same insect the further they explored into the tube. Colour change, eyes diminished, larger feelers, eye sockets gone, surrounded by feelers, so on and so on. The animal that I found deep inside "Barkers Tube" may be one of these nature's oddities? A species which evolved to suit its new and strange environment? What was it you ask? Before I finally spill the beans I must explain that "Barkers Tube", the part of the lava tube system where my gift of nature was presented to me, is the longest tube we escort visitors into. It extends for 800 metres, twisting and turning until you come to an inside lake, the result of Cyclone Joy in 1991. About 500 metres into the tube I once again heard the cry "Snake!", "Snake!"; yes, thats right, I had failed to see even this snake! Once again it was a adult Childrens Python. No bats evident

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inside it, however it was in just as good a condition as the previous one in "Wind Tunnel". The major difference between the two snakes was that this specimen was ---- wait for it ---- ALMOST TOTALLY WHITE! The only other colouring on this unique piece of nature was a very remnant brown pattern on the dorsal area. It also had a very recent scar 2/3 of the way down the body on the right hand side. The excitement in my voice and on my face was lost on the small crowd of on-lookers who probably thought that I had flipped my totally bald little head. No one to share or appreciate my rare find. The rest of the tour was a blur for me as I only had one picture etched on my brain - a Childrens Python lacking nearly all of its normal pigmentation.

No-one had a camera that day so subsequently I do not have any photographs to show you all - yet. This beautiful specimen has been seen twice by one of the other guides. Shortly I am sure a photograph will be available, which I will bring along to the next meeting.

Interestingly enough, the ambient temperature in the tube is between 18 and 22 degrees Celsius, and yet these snakes can eat, digest their food and presumably reproduce within this low temperature range.

With permission from the Lava Lodge owners and associated permits from the Department of Environment and Heritage the CYHS may be able to conduct regular field trips to compile a reptile list for the area. Until then enjoy reading the rest of the journal, support your club and take care.

YOURS SINCERELY
STEVE HANIFORD
President, CYHS.



meetings

MEETINGS

Our inaugural meeting was held on 20.11.92 at Cominos House to discuss the formation of the CYHS, followed by a talk and slide-show by Michael Anthony outlining the reptile species to be found in our region. Nineteen people attended. On 11.12.92 another meeting was held to elect a committee, with our guest speaker Scott Thomson talking about the Galapagos Tortoise. Seventeen people attended. With the meeting night changed to Thursday, our next meeting took place on 29.1.93 featuring a very informative talk from Brent Vincent from the Department of Environment and Heritage about Crocodiles with nineteen people attending. The last meeting was held on 25.3.93, with Tim Hawkes presenting a talk and slides of a recent field trip to the Mt. Surprise area in search of Pale-Headed Snakes for breeding at WildWorld. Twenty-three people attended this meeting.

MEETINGS ARE HELD ON THE LAST THURSDAY OF EACH MONTH AT

COMINOS HOUSE, GREENSLOPES STREET, CAIRNS

Meetings scheduled for the remainder of 1993 are for the following dates:

29th July
30th September
25th November

The following pages contain the summaries of presentations given by guest speakers at our four past meetings.

meetings

20.11.92

A General Overview Of The Snakes And Lizards Of N.E.Qld

Michael Anthony, P.O.Box 523, Manunda, Q.4870

The following is basically an annotated checklist of species of lizards and snakes found in the wet tropics and surrounding areas of N.E. Queensland between Townsville and Cooktown. It includes personal observations and communications with local herpetologists, supplemented by literature cited in the References.

This region has an extremely rich herpetofauna with about 143 described species, in 65 genera with 27 species being found nowhere else (or endemic), out of a total of 355 species occurring in Queensland. Many more of the species mentioned are found only in north Queensland generally, and a number of other species are endemic to parts of Cape York. Animals featuring in slides on the night bear an asterisk*.

LIZARDS

Dragons (Agamidae) 6 species (1 endemic to the region) in 5 genera.

Frilled lizard Chlamydosaurus kingii : large, familiar diurnal lizard, an inhabitant of drier woodland.

Two-lined dragon Diporiphora bilineata* is a small common diurnal species, often seen active at the hottest time of day when few other reptiles are seen. Found in drier habitats. Another species is found in NEQ, D.australis, recorded from granite outcrops.

Forest dragon Hypsilurus boydii* is endemic to the rainforests of NEQ (also recorded from wet sclerophyll forest at edge of rainforest), both highland and lowland. Diurnal, often in late afternoon, on ground and in trees, will climb to heights when threatened. Shelters under ground debris or may spend the night perched on limbs or trunks of trees.

Water dragon Physignathus lesueurii* a large species to 1 metre found along the east coast of Australia near rivers, creeks and lakes in both rainforest and dry country.

Bearded dragon Pogona barbata* also an eastern Australian species to Cooktown area.

Geckos Gekkonidae 18 species (4 endemic) in 11 genera, 1 species introduced.

Chameleon gecko Carphodactylus laevis - a large rainforest species endemic to NEQ.

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Ring-tailed gecko Cyrtodactylus louisianensis* - a large species found in rainforest and around rock outcrops in crevices, overhangs and around boulders. Enters human dwellings in Cooktown area.

The genus Diplodactylus is represented by two species, D.conspicillatus and D.steindachneri, both inhabitants of drier habitats.

Dtella Gehyra dubia* is found in woodland and rock outcrops; arboreal but may be active on ground. There may be more than 1 species in NQ.

House Gecko Hemidactylus frenatus is an introduced species common to human dwellings in NEQ, identified by its spiny tail and distinctive call.

Bynoes gecko Heteronotia binocoi* - a common and widespread terrestrial gecko.

Mourning gecko Lepidodactylus lugubris is a small arboreal gecko found in a few coastal localities in NEQ.

There are two species of Nactus in NEQ The long-limbed N.galgajuga* is found only on Black Mountain active on boulders at night. The Pelagic gecko N.pelagicus is terrestrial, similar in appearance to the more common Bynoes gecko, from which it can be distinguished by the alignment of tubercles on its back (aligned in longitudinal rows in Pelagic gecko).

The Spiny Knobtailed gecko Nephrurus asper occurs in drier rocky habitats.

There are six species of Velvet gecko, genus Oedura - O.coggeri* found only in NEQ in rocky areas, in crevices and under bark; O.castelnaui* is a large species found only in NEQ under bark of trees in dry forest; O.marmorata found in western areas under bark, O.monilis* is a similar species also arboreal found under bark; Zigzag gecko O.rhombifer* is a smaller species, again arboreal, occasionally in rock outcrops. O.robusta is also recorded from the region.

Northern Leaf-tailed gecko Phyllurus cornutus* is a large distinctive gecko seen often on rainy nights active mainly high up on the trunks of large rainforest trees, occasionally near ground level.

Legless lizards Pygopodidae 6 species (2 endemic), 3 genera

Three species of Delma occur in the region; D.tincta* is a widespread species across northern Australia - terrestrial, shelters under ground debris. Two other species have been described from NEQ D.mitella from the Herberton/Ravenshoe area and D.labialis from near Townsville and Magnetic Is.

Burton's Legless lizard Lialis burtonis* occurs virtually Australia wide on the ground and in low vegetation, identified by its pointed snout.

Two species of Scalyfoot are recorded from the area, Pygopus nigriceps differs from P.lepidopodus in lacking prominently keeled dorsal scales. These lizards have large and long, rounded rudimentary hindlimbs.

meetings

Skinks Scincidae 62 species (20 endemic) in 21 genera

One species of Anomalopus A.gowi* occurs in woodland and vine thickets under logs and rocks, west of the tablelands. It is an elongate, limbless skink.

Calyptophis thorntonensis is a small skink endemic to the region, only found at Thornton peak.

There are 11 species in the genus Carlia, the Rainbow skinks, which are small skinks, terrestrial or rock inhabiting with four fingers and five toes. C.jarnoldae* occurs in dry country in rocky areas, males are brightly coloured, while females are drab grey or brown, a situation found in all species of Carlia, at least when breeding. C.munda, C.rostralis*, C.schmeltzi*, C.pectoralis, C.mundivensis and C.scirtesis are usually found in drier habitats, the latter two species are restricted to rocky outcrops. C.scirtesis is found only on Black Mountain near Cooktown. C.longipes* and C.storri are found in a range of habitats, while C.rubrigularis* is restricted to rainforest and margins, the latter being endemic to NEQ. The species of Carlia can be told apart using a range of characters, including the shape and number of keels on the dorsal scales, nature of the midlateral stripe, colour in breeding males and the shape of the ear opening and ear lobules. A small hand lens is an invaluable identification tool for these and other types of small lizards.

Coeranoscincus frontalis is another limbless, endemic species found only in rainforest.

Four species of Cryptoblepharus are found - C.littoralis on rocks on coastline close to water, C.plagiocephalus, C.carnabyi and C.virgatus are arboreal or rock inhabiting. The latter species has a well defined dorsolateral stripe [v ragged in others]; the other two species may be told apart by the nature of the lamellae under the 4th toe.

About seven species of Striped skink occur in drier habitats in NEQ. They are difficult to distinguish, usually identified by variation of pattern on the back and sides of animals. An exception is Ctenotus spaldingi* which has only 3 supraoculars (large scales above the eye) as against 4 in the others. One of the largest occurs in sandstone escarpment near Laura C.quinkan, which lacks marking on the dorsum. C.monticola is endemic to the Atherton Tableland. The other species are C.essingtoni found in the northern N.T. and QLD, C.robustus, a widespread species; C.taeniolatus, found along the east coast in rock outcrops and C.zebrilla, an inhabitant of dry woodland in western NEQ. Four species of Egernia may be found in the region; the spiny tailed E.hosmeri, an inhabitant of rock outcrops in hinterland; the Major skink E.frerei* found in a variety of forest habitats including rainforest, also rock outcrops; the Yakka skink E.rugosa a woodland species and the Tree skink E.striolata.

The Water skink Eulamorus quoyii has a range extending to NEQ; the Barred skink E.tenuis* is found in rocky or wooded creek situations while E.tigrinus* is a rainforest dweller.

The genus Glaphyromorphus is a group of small lizards showing different degrees of limb reduction and body elongation, which are adaptations to burrowing under rocks or logs, or living amongst ground debris. G.cracens* and G.pumilis are restricted to dry habitats, G.fuscicaudis, G.mobergi are found in rainforest and G.crassicaudis

meetings

G.nigricaudis* and G.pardalis* are found in a variety of habitats. Three are endemic to the region.

The Prickly forest skink Gnypetoscincus queenslandiae* is found only in NEQ rainforest, where it is commonly found in or under rotting logs.

The Pinktongued skink Hemisphaerodon gerrardi is found in wet sclerophyll and rainforest. It is arboreal, but may be found on the ground.

Lampropholis delicata is a small terrestrial inhabitant of forest leaf litter which may also be found in gardens of suburban Cairns.

The genus Lerista is another group of small burrowing skinks with reduced limbs in some species limbs may be absent as with L.ameles known only from an outcrop near Mt.Surprise. L.karlschmidti and L.storri have hindlimbs but no forelimbs while L.orientalis retains four small limbs.

There are six species of leaf litter dwelling Lygisaurus in NEQ, three of which are endemic. L.laevis occurs in rainforest, L.rococo is found amongst rock outcrops and L.tanneri is found near creeks in a small area north of Cooktown. L.foliorum and L.aeratus* may be found in a range of habitats, and L.timlowi is restricted to dry forest.

Menetia greyi is another small skink which inhabits leaf litter.

The Firetailed skink Morethia taeniopleura may be found amongst leaf litter in woodland or under rocks on rock outcrops.

Two more species of small ground dwelling skink found in the western part of this region are Notoscincus ornatus and Proablepharus tenuis.

The only representative of a genus of skinks normally found in southern parts of Australia is a small skink found only near the top of Mt.Bartle Frere Psuedemoia jigurru.

Sauroscincus basiliscus S.challengeri S.tetradactyla and S.czechurai all occur in rainforest or adjacent wet sclerophyll.

The Bluetongued lizard Tiliqua scincoides may be found in a variety of habitats but apparently not in rainforest.

Goannas Varanidae 7 species 1 genus

Gould's goanna Varanus gouldii and the similar Varanus panoptes are both large, terrestrial monitors. V.panoptes has a pattern of dark and light spots aligned in rows across the back and ventral surface. V.gouldii inhabits some continental islands (Fitzroy and Lizard islands).

The Rusty monitor V.semiremex is an inhabitant of coastal creeks and mangroves.

Storr's monitor V.storri* is a small spiny-tailed monitor found in rock outcrops or under bark on stony hillsides.

The Spotted Tree monitor V.timorensis is common in rainforest in NEQ as well as woodland.

The Freckled or Black-headed monitor V.tristis* is found in arboreal or rocky outcrop situations. There appears to be three different forms in the region; one may be seen active on roads in dry forest further west (possibly V.pellewensis), and two different forms inhabiting rock outcrops, one appearing to be more restricted and adapted to living in narrow crevices and under small rocks in more rugged rocky ranges.

meetings

The Lace monitor V.varius* is a large arboreal goanna found in forest habitats in NEQ, including highland rainforest, coastal wet sclerophyll and dry forest along creeks.

SNAKES

Blind snakes Typhlopidae 7 species 1 genus

Rhamphotyphlops affinis. R.broomi. R.diversus. R.polygrammicus.
R.proximus. R.unquirostris. R.wiedii.

File snakes Achrochordidae 2 species 1 genus

Javan File snake Achrochordus arafurae found in rivers draining west of the Great Divide. Aquatic, found amongst roots in ambush for fish in freshwater creeks and billabongs. The Little File snake A.granulatus inhabits saltwater including coastal creeks and estuaries.

Pythons Boidae 6 species 3 genera

Black-headed python Aspidites melanocephalus* usually found in drier habitats especially sandy areas, both coastal and inland. Active in late afternoon or evening.

The Childrens python Liasis maculosus* is a familiar small python found active on ground, under rocks and in crevices on rock outcrops or under bark of dead trees in drier habitats. L.stimsoni* is similar in appearance, the darker blotches on the body being smooth edged, rather than ragged edged in L.maculosus.

Water Python L.fuscus inhabits swamps and watercourses.

Scrub python Morelia amethystina* is found in highland and lowland rainforest as well as dry forest. This reasonably common python grows to large size, the largest I have seen was about six metres in length. The Carpet python M.spilota variegata* is also found in both highland and lowland rain and dry forest.

Rear-fanged and non-venomous snakes Colubridae 6 species 5 genera

Brown Tree snake Boiga irregularis* is the most commonly seen nocturnal snake in NEQ, from rainforest to dry forest. This snake varies in pattern from plain brown with faint indication of cross-bands, to strongly contrasting dark and light brown cross-bands in some areas.

The Northern Tree snake Dendrelaphis calligaster* is a very slender diurnal snake inhabiting rainforest and edges, also found along creeks and vine thickets in drier areas. The Common Tree snake D.punctulatus inhabits open forest, rocky hillsides and coastal situations. It is often found living around houses in Cairns where it preys upon Green Tree frogs Litoria caerulea.

meetings

Macleay's Water snake Enhydryis polylepis is an entirely aquatic species found in freshwater creeks and swamps.

The Slaty-grey snake Stegonotus cucullatus favours wetter situations including rainforest and dry forest creeks. Nocturnal Freshwater snake or Keelback Tropidonophis mairii* is another common snake found near watercourses and swamps, most active in the hours following nightfall but sometimes seen active in the early morning or late afternoon.

Front-fanged snakes Elapidae 23 species 14 genera

Northern Death adder Acanthopsis praelongus* found in a range of habitats from near coastal dry forest to dry rocky mountainous areas. A species of Crowned snake Cacophis churchilli has been described from the Cairns region.

There are four species of Whip Snake to be found in the region. The largest species, the Black Whip snake Demansia atra* is a diurnal dry forest inhabitant. D.papuensis is also usually black in colour, but has none of its anterior (toward the front of the body) ventral scales with black edges. The Yellow-faced Whip snake D.osamboohis* and the Collared Whip snake, D.torquata inhabit dry forest and rock outcrops. Red-naped snake Furina ornata* and the closely related Yellow-naped snake F.barnardi both occur in dry forest habitats.

Swamp snake Hemiaspis signata* occurs in highland rainforest and is also recorded from the Cairns area.

Pale-headed snake Hoplocephalus bitorquatus*: specimens from far north have been found in dry forest on the western slopes of the Great Divide.

The Taipan Oxvuranus scutellatus occurs in a variety of habitats, from dry forest to rainforest both on the coastal plains and highland areas.

The King Brown snake Psuedechis australis is uncommon in NEQ, while the Black Snake P.porphyrriacus* seems restricted to higher altitude, particularly rainforest areas.

The Eastern Brown snake Psuedonaja textilis* occurs in dry forest. Uncommon. The Western Brown P.nuchalis has a range extending to NEQ.

Carpentaria snake Rhinoplocephalus boschmai and the Black-striped snake R.nigrostriatus inhabit dry forest west of the tablelands. The Small-eyed snake R.nigrescens* is usually found in rainforest in NEQ.

Two species of Simoselaps the Coral Snake S.australis and S.warro are recorded from NEQ.

The Curl snake Suta suta* is recorded from the Mareeba area.

Rough-scaled snake Tropidechis carinatus is found in highland rainforest, also coastal swampland.

Bandy Bandy Vermicella annulata* occurs in dry forest as well as wetter habitats.

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Snake's supper tempts the experts

By BERNARD HUMPHREYS

Meet Tiliqua adelaidensis. He's small, not very good looking and quite dead but he's one of the most significant South Australian wildlife finds of recent years.

More commonly known as the Adelaide blue-tongue lizard, the little fellow and his kind were thought to be as extinct as his dinosaur cousins until his recent unfortunate end brought the species under the notice of SA scientists.

The Adelaide blue-tongue has only rarely been sighted since first being discovered in 1863. None has showed up since one was found at Marlon in 1959.

The lizard is a miniaturised version of the common blue-tongue and grows to a length of only 15cm to 18cm.

It had been thought to have been killed off by the removal of its natural woodland habitat for farming and residential use.

This example was found by chance by two amateur fauna experts, Graham Armstrong and Julian Read. They stopped their car in the Burra area on Wednesday to examine

the brown snake which had been run over by a car. They found the blue tongue inside the snake. Swallowed whole just a day or so before it was in excellent condition. The two experts immediately recognised they had made a rare discovery.

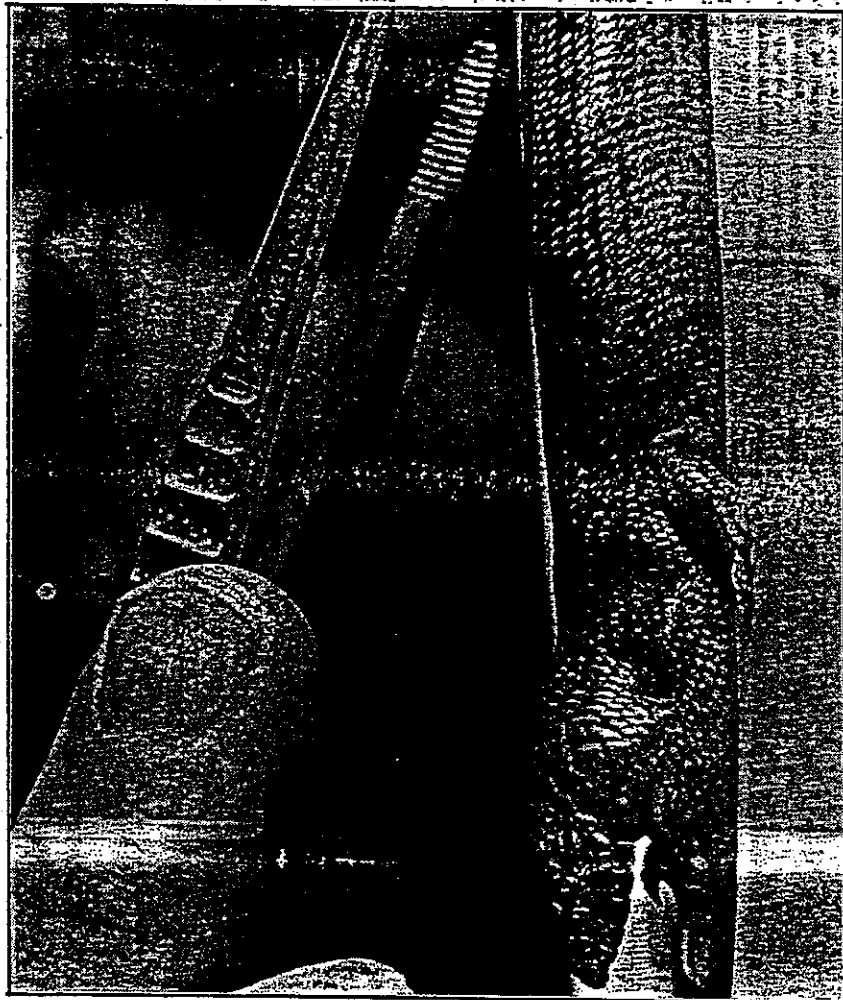
The lizard is now in the care of the SA Museum where the curators of reptiles and amphibians, Dr Mark Hutchinson, is using its remains to find out more about the species.

At the moment we know almost nothing about this lizard because it is so long since one has been seen," Dr Hutchinson said.

Search for more. But it's not likely this one was just surviving out there on its own, so there must be a colony somewhere.

He will begin preliminary scouting of the find area next week and hopes to find a few live examples which may be captured and put under observation at Adelaide Zoo.

The lizard was given adelaidensis as part of its name as it was thought to be unique to the Adelaide Plains and the Mid North.



The extremely rare Adelaide blue-tongue lizard — *Tiliqua adelaidensis* — found near Burra this week.

meetings

11.12.92

Sub-Specific Identification and Breeding Management of the
Galapagos Tortoise, Geochelone elephantopus

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The Galapagos Tortoise, Geochelone elephantopus, has been found in Australian institutions for nearly 150 years. In that time very little has been done to breed the species in this country. Before any breeding program could be attempted the positive identification must be ascertained for each specimen.

I have been using a combination of morphology, morphometrics and history to make this determination. There are currently 22 specimens in Australasia and I have identified them as follows:

Location	Hybrids	<u>G.e.vicina</u>	<u>G.e.guentheri</u>	<u>G.e.porteri</u>	<u>G.e.becki</u>
WPZ	1.0	3.3	0.2	-	-
QRP	-	-	-	0.1	-
GRP	1.0	-	-	-	1.0
Auc.	-	2.2	-	-	-
Ege.	3.2	0.1	-	-	-

TABLE 1.

Abbreviations used above are as follows: Western Plains Zoo (WPZ), Queensland Reptile Park (QRP), Gosford Reptile Park (GRP), Auckland Zoo (Auc.), Egerton stud, Perth (Ege.).

Of course by using morphology this is "statistical at best", (McFarland.1974a). All these identifications need to be tested by Ed Lewis from Texas A&M University who is developing an accurate means of genetically testing the tortoises (Lewis, pers.comm). Also it is important to understand that the hybrids are only potential hybrids.

Using the information in Table:1 I have been assisting Chris Banks from Melbourne Zoo (Species Co-ordinator for Galapagos Tortoise) who is currently writing the Species Management Plan for this species.

From Table:1 it is clear that no-one in Australasia is really in a position to breed a pure group; a major re-shuffle is required.

Only Beerwah (QRP) and possibly Perth (Ege.) have suitable natural climates for a successful breeding program. This could be artificially

meetings

produced elsewhere but is not currently done and would be extremely expensive.

I personally feel that the best course would be to centre around the Queensland Reptile Park. Moving T2 and T3 (both G.e.quentheri, females) from WPZ to QRP would be a good start. These two are of a similar age to the G.e.porteri currently residing at QRP and could teach her socialising skills before the arrival of a male. QRP could then maintain two breeding groups and Steve Irwin of QRP assures me he has the room to expand.

Following this all the San Diego Zoo bred hybrids should go to WPZ and the Honolulu bred G.e.vicina distributed between Auckland and Egerton. The reasons for this are the climatic extremes at Dubbo are negative to breeding. This would therefore prevent the hybrids from breeding but also they would be in an institution where they could be researched to ascertain if they are really hybrids.

As for the G.e.becki at Gosford, until I can be more positive as to what he is he should stay there. This way he cannot cause a problem by breeding. All this re-arrangement would give the following:

Location	Hybrids	<u>G.e.vicina</u>	<u>G.e.quentheri</u>	<u>G.e.porteri</u>	<u>G.e.becki</u>
WPZ	5.2	-	-	-	-
QRP	-	-	0.2	0.1	-
GRP	-	-	-	-	1.0
Auc.	-	2.2	-	-	-
Ege.	-	3.4	-	-	-

TABLE:2.

Of course this is just my opinion and any movements are up to Chris Banks.

The future for the Galapagos Tortoise in Australia is looking brighter. Positive work is being achieved at Herp.T.A.G. and there may be a private conference held at the World Herps, Congress in December 1993. This will be attended by Dr.Thomas Fritts and Dr.Peter Pritchard as well as others. With any luck the true beginnings of international co-ordination could begin there.

Ten of the subspecies have been saved from extinction but they will never leave the Galapagos Islands. Therefore if the world's Zoos wish to continue exhibiting this impressive reptile they must co-operate and breed them on an international level. Above all else they must breed them pure.

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ACKNOWLEDGEMENTS

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Dr. David Blyde	Western Plains Zoo
Steve Irwin	Queensland Reptile Park
Mick Sibley	Auckland Zoo
Grant Husband	Gosford Reptile Park
Chris Banks	Melbourne Zoo
Allen Greer	Australian Museum
Chris Mitchell	Pearl Coast Zoo
Christina McDonald	Adelaide Zoo
Robert Brock	San Diego Zoo
Dwain Meyer	Honolulu Zoo
Rene Honegger	Zurich Zoo

All of the above people have directly assisted in the collection of data or the interpretation of results.

Crocs home by instinct

A three-year study has found Australian crocodiles have a powerful homing instinct.

The research has helped explain why crocs, mainly the saltwater species, have been known to swim for hundreds of kilometres to be in familiar waters.

The Northern Territory Conservation Commission's Mr. Wolf Siebers said crocodiles

instinct

that had been relocated away from the populated Nhulunbuy area in East Arnhem Land — 500 km east of Darwin — had repeatedly returned home.

Some of the crocodiles had been removed seven times and had

returned seven times, Mr Siebers said.

Of about 60 salt water crocodiles relocated from the Nhulunbuy area on the Gove Peninsula, 50 eventually returned.

Many of the crocodiles swam home over

distances of 60 km while others swam up to 200 km, he said.

Mr Siebers said the results were the first hard evidence of the crocodile's homing instincts.

"There were indications they had this homing instinct, but there hadn't been any detailed reportings the way we did it — our recordings confirm what the indications were," he said.

Northern Territory News, Saturday, September 19, 1992

29.3.93

Australia's Crocodilians

The content of this article revolves around the basic physiology, biology and general behaviour of the two species of crocodiles found in Australia. It covers a talk presented to interested groups by Technical Officer Wildlife Brent Vincent of the Department of Environment and Heritage Queensland.

INTRODUCTION

Crocodiles have been on this earth since before the breaking up of the Supercontinent Pangea. Pangea divided into two major land masses known as Laurasia in the north and Gondwana in the south. Crocodiles are members of a group of animals which evolved from Archosaurs and have a lineage dating back about 240 million years. They saw the passing of the dinosaurs and are true survivors. There are 23 species on earth today. One of the most amazing things about this group, known collectively as crocodilians, is that not a single species has become extinct since modern man evolved.

Their basic shape over the millenium has changed little, apart from a reduction in size and a reduction in armourment.

The greatest threat to their survival today is loss of habitat through drainage, pollution and hunting pressure. Illegal hunting, especially in third world countries is of major concern. Some of the worlds species are threatened with extinction but the two species in Australia enjoy protection under C.I.T.E.S. an international agreement to which our government is a signatory. Their future is reasonably secure.

BIOLOGY

Two species of crocodiles are found in Australia: The freshwater crocodile Crocodylus johnstoni and the estuarine or saltwater crocodile Crocodylus porosus.

The most noticeable difference between the two species in the shape of the head. The larger and more aggressive estuarine crocodile has a blunter, wider snout. It also has a double row of scutes behind the plate covering the ear openings. By contrast there is only a single row of scutes in this area on a freshwater crocodile. Such differences are not readily discernible unless the animals are viewed at close range.

At a distance the shape of the animals jawline is a more easily seen feature. The jawline is irregular in an estuarine crocodile but very straight in the freshwater crocodile.

meetings

As most people viewing crocodiles are usually looking at them from side on, this is definitely the best way of determining which species they are looking at.

Closer inspection will reveal that the teeth on freshwater crocodiles are of very regular size, regardless of the age of the animal. Again by contrast the teeth of estuarine crocodiles are of differing size, with the eye teeth being considerably larger than any others in the animals jaw.

FEEDING

Crocodiles are opportunistic feeders. They are also animals that hunt by observing the habits of other animals. They feed mainly at night. Because they are exceptional converters of food into energy they do not have a requirement to feed every day or even every week. Captured animals that have refused to feed have lasted up to five months before dying.

Freshwater crocodiles teeth are ideally adapted to feeding on fish. Although fish are probably the staple diet they eat small birds and mammals as well as amphibians and reptiles including small estuarine crocodiles. Some are adept at catching small insectivorous bats, which drink by dipping their chests in water and then licking it from their fur before circling to repeat the process.

Their larger estuarine cousins start life feeding on invertebrates, frogs and small fish and graduate to much larger prey as they increase in size. Egrets, pelicans, dugong, turtles, dingoes, wallabies, feral pigs and sometimes even domestic cattle, horses and occasionally humans fall prey to these major predators.

Large estuarine crocodiles are capable of smashing the heaviest bones with ease, and they use their tremendous power to rip limbs from larger prey.

Crocodiles teeth are designed for gripping prey and tearing rather than cutting cleanly as in the case of some species of sharks.

If a tooth is removed from the skull of an estuarine crocodile it will be noted that a second one lies directly beneath the first. If the second one is also removed a button or cusp-like lump will be seen, which is the start of the third one. Teeth are produced throughout the animals life, until old age. At this time the teeth start to degenerate and old animals may have smaller teeth than might be expected or even no teeth at all.

Like owls and other birds of prey, estuarine crocodiles regurgitate balls made up of tightly packed hair of their victims. These may be the size of tennis balls or larger and can occasionally be found on the drift lines in estuaries and along open beaches across the north.

meetings

SENSES

Crocodiles have excellent eyesight, good hearing and a keen sense of smell. The eyes on crocodilians can be closed in the same way we are capable of closing ours. In addition they have a transparent membrane which moves sideways and probably improves underwater vision. Around the teeth in the gums are sensory pits. Although the functions of these sensors is not clearly understood, they probably assist in helping the animals to home in on struggling prey at the waters edge, even on the darkest night or in extremely turbid water.

PHYSIOLOGY

The food to energy conversion rate of crocodiles when compared with that of humans and other mammals is amazing. As mammals humans have a food to energy conversion rate of approximately 3-4%. In other words only three to four kilograms of every hundred taken as food will actually be converted into meat on a human frame or converted into energy for physical and mental pursuits.

Very active crocodiles may convert 22% into meat or energy. While at the top end of the scale, the lazy lethargic individuals will convert as much as 70% into meat on their own frames or energy with which to pursue more food.

Crocodiles are primarily hunters of the water's edge. When basking with their mouths open, they are actually regulating body temperature. During periods of cold weather they need to thermoregulate to maintain body temperature. At such times they are most visible as they climb onto mud and sand banks to enjoy the warmth provided by winter sunshine.

In the lower estuarine sections of north Australian rivers where strong sunlight creates high evaporation levels, salinity (salt) content is much greater than in the ocean. Crocodiles can live in the super saline areas because they have a gland in the back of the tongue, which removes the excess salt from their bodies. This is called the lingual gland.

Crocodilian brains are small for the size of the animals. A 3.5 metre estuarine crocodile would have a brain about the size of a walnut. Stomach capacity is also small and the same sized animal's stomach would have about the size of a basketball. The animals usually carry stones in the stomach and there is some conjecture as to the precise role these play in the animals physiology. Scientists believe they aid in digestion in similar fashion to the gut stones carried by some birds. They may also assist in ballasting the animals.

Crocodiles have small lung capacity, which is surprising when one considers they can stay submerged for more than an hour and a half. Because of limited lung capacity they are like fat boys, easily winded after a short high energy dash.

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During cold weather periods they have the ability to slow down their metabolic rate and direct blood only to the vital organs, in a similar way to hibernating animals. This mechanism may well be used during periods of submergence to increase bottom time when lying in wait for food, or attempting to avoid enemies.

Periods of high energy exertion and stress may build up lactose in the blood. This usually happens when the animals are struggling with large prey because they do not breathe during the struggle. It results in oxygen debt which they can normally repay when the struggle is over. Crocodiles can handle a large lactose level build up, but in extreme cases, this can lead to the death of the animal, especially with very large animals.

The life span of crocodiles is thought to be similar to that of man. Those lucky enough to reach maturity have few enemies. Man and other crocodilians being the major predators. The animals lay down growth rings on the spinal bones in much the same way as trees form growth rings. Thinly sliced sections from the central spine area, soaked in a fluorescein dye and placed under a dissecting microscope make ageing of dead animals a relatively simple matter.

REPRODUCTION

At maturity male estuarine crocodiles average around 16 years of age and about 3.4 metres in length. Females seldom exceed 3.2 metres and mature at about 12 years. Large estuarine crocodiles may reach a maximum length of around 7 metres but animals in this size class are uncommon.

Female estuarine crocodiles build a mound nest of vegetation which may include a high sand content in some areas. They lay between 35 and 65 eggs with an average of about 50. The nesting season spans the northern wet season from late October through to as late as June in some years.

Freshwater crocodiles lay their eggs in holes scraped in sand deposits along riverbeds and around lagoons. They nest in August usually over a three week period and cover their eggs carefully. There is usually little sign of a nesting site except the tracks of the animals. Average clutch size is about 13 to 16 eggs. Unlike their estuarine counterparts they do not vigorously defend nesting sites or creched young.

Mature female freshwater crocodiles average about 1.5 metres while males seldom exceed 2.3 metres in length.

The sex of crocodilians is determined by the temperature at which the eggs are incubated in the nest. Because the incubating eggs at the outside of the nesting chamber may be held at a different constant temperature to those in the centre, it would be normal to expect both sexes.

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Scientists have determined that incubation temperatures below 31 Celsius and above 32.5 produce mainly males. The ability to control the production of either males or females in a farmed situation has special ramifications for potential crocodile farmers. When setting up an initial farm, where a single male may be capable of servicing a number of females, it is desirable to produce female breeding stock as fast as possible. Once the farm is established and because the males grow faster the desirability of which sex to produce is reversed.

Predators of nests and young in both species, take a devastating toll in the wild. Predators include man, goannas, large fish, snakes, eagles, kites, ospreys, pigs, dingoes, jabirus and other crocodiles. Few survive the first two or three years.

When observed on land crocodiles will be seen to have much smaller front legs than those at the back. The front legs are capable of supporting the front portion of the animal allowing it to lift its body completely off the ground. The back legs supply the locomotion and the power to propel the animals forward with startling speed when necessary.

In the water locomotion power is provided by the tail. Neither of the two species of Australian crocodiles uses the tail as a weapon. The feet are laid back against the side of the body and will only leave this position if the animal swerves suddenly or props to avoid forward motion. When diving the position of the front legs may be raised above the position of the shoulders to aid in descent.

The skin on crocodilians is made up of interconnected segments called scales with a flexible segment between each which allows for freedom of movement. In the centre of the scales and lying below the surface are hard bone plates called osteoderms. This is the armour or protection. Estuarine crocodiles do not have these osteoderms in the belly and for this reason the value of their hides is about 30% more than any of the other species. The raised scales on the back play a vital part in increasing heat absorption. Each scale has an enriched blood supply which assists in the transfer of the absorbed heat to other parts of the animals body. The scutes in the tail do not contain osteoderms but increase the surface of the animals tail thereby increasing swimming efficiency.

It is difficult to determine the top speed a crocodile is capable of reaching while swimming on the surface. They are capable of extremely rapid movement and this is evident when a large one is in pursuit of a smaller interloper in territorial disputes.

Fortunately it appears that evolution gave the slightly smaller animals a faster turn of speed, as when everything else is equal they appear to be able to keep ahead of their bigger brothers.

meetings

HOW DANGEROUS ARE LARGE ESTUARINE CROCODILES?

When the question of danger from large estuarine crocodiles is raised, an attempt should be made to put things in perspective.

Large hungry specimens do constitute a very real danger to humans. It has already been stated that they have small brains. Scientists have much to learn about the animals brain capacity. It is almost certainly capable of telling the animals whether or not they can handle a certain sized animal. If they can and are hungry the danger is very real. Crocodiles are survivors capable of living in close proximity to man, often undetected.

Since 1867 there have only been twenty-six confirmed deaths from crocodile attack in the north of Australia. That is twenty-six people, in one hundred and twenty-six years. There are probably one or two more people who have quietly disappeared, that may have been taken, but even adding another dozen that is a very small number of human fatalities when one considers other killers in Australia. For example, in May 1991 Australia recorded the lowest road toll for a single month since records were first kept in the 60s. One hundred and sixty-one people died on our roads. Each year a thousand people die from asthma attack. Drugs and alcohol account for another ten thousand annually.

The annual road toll for Queensland for the last two years was:

1991	395
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1992	416
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The national road toll for Australia for the last two years was:

1991	2112
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1992	1976
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From the above facts it becomes obvious that the incidence of crocodile attack is blown out of all proportion by the media. The truth is box jellyfish kill more people in this country, than all the crocodiles, snakes, spiders, blue-ringed octopus, coneshells and stonefish combined. However box-jellyfish do not rate the same kind of attention, mainly because there are no three metre monsters with razor-sharp teeth.

25.3.93

A Report Of A Three Day Field Trip To The Dry Western Slopes Of
The Atherton Tablelands

Tim Hawkes and Michael O'Brien C/- WildWorld, Cook Hwy, Palm Cove

INTRODUCTION This report gives a brief account of a three day field excursion to the dry western slopes of the Atherton Tablelands. The aim of this trip was to fill a permit issued by the Department of Environment and Heritage to collect a male Pale-headed snake Hoplocephalus bitorquatus on behalf of WildWorld. A general description of the area and its unique herpetofauna have also been highlighted in this survey.

The members of the genus Hoplocephalus (Broad-headed snakes) comprise three distinctly patterned species, all of which share similar morphological characters. The broad, flat head is well suited for entry into confined cavities under exfoliating rock and bark. When provoked, assuming the typical S shaped defensive posture the head also becomes more exaggerated in width as it is flared and upturned around the cheek bulges in an attempt to warn off any threatening animal. Another shared feature is the slight dorso-ventral keel located along the length of the body. Like the common tree snake Dendrelaphis punctulatus which possesses a very acute angled keel, this character assists these snakes in their nocturnal, climbing foraging.

Young are born alive and are quite large, measuring on average a snout to vent length of 20 centimetres at birth. The females mature at greater lengths than the males and remain larger in all three species. The variability in sexual size dimorphism in Australian elapids exhibits a common trend in those genera which do, as opposed to not displaying male to male combat rituals. For example in those genera where the males attain longer lengths, there is a trend for the males to engage in combat bouts. However in the genus Hoplocephalus and another familiar group of snakes, the Death Adders Acanthophis the females outgrow the males and the practice of male combat is not exercised.

The Broad-headed snake Hoplocephalus bungaroides is without a doubt the most attractive of the Hoplocephalus. Its colouring resembles the distinctive black and yellow markings on the Diamond python Morelia spilota spilota which it has been confused with. Its distribution is restricted to the sandstone formations surrounding Sydney and as a consequence its existence in some of the developing marginal areas is under threat. Apart from the ever increasing problem of encroaching urbanisation, the act of illegal bush rock removal from parts of its range for landscaping purposes also destroys the shelter sites these animals occupy.

meetings

Before the turn of the century it was not uncommon to find this species inhabiting the foreshore cliffs of Sydney Harbour and its numerous tributaries. Due to Sydneys rapid growth rate this species has disappeared completely from these areas. If not for the National Parks and water catchment areas surrounding Sydney which still provide refuge areas of habitat, its continual survival would be seriously under threat.

From personal and communicated wild observations on both this species and the Stephens Banded snake Hoplocephalus stephensi it would appear a seasonal migration from one preferred site to another is evident. During the cooler months of the year the exfoliations and crevices which are situated on the exposed tops of rock outcrops are utilised as shelter sites. It is suspected that the preference for these localised retreats are chosen for their thermoregulatory advantages. In the warmer months these species become hard to find, suggesting a migration to deeper crevices and cavities within the outcrop, or into the surrounding woodland (as may be the case with the Stephens Banded snake).

The Pale-headed snake Hoplocephalus bitorquatus occupies the largest distribution in this genus. It inhabits woodland, sclerophyll and rainforest communities where it is often located concealed under exfoliated bark on live and dead trees. In some parts of its range it has been known to shelter under exfoliations on rock outcrops.

As a result of its extensive distribution there appears to be a slight variation in adult body size in this snake. From some 215 museum specimens examined by Professor Rick Shine, those animals from N.S.W. tend to be slightly larger than those from Queensland. In the extreme north of this species range a disjunct population occurs in dry woodland country west of the Atherton Tablelands. These animals appear to be even smaller in body length and have fewer mid-body scale rows (19 v 21).

The occurrence of hybridisation between this species and the closely related Stephens Banded snake H. stephensi have shown up some interestingly patterned individuals from localities where the two species have been known to reside. This variation has been referred to as an unbanded aberrant of the Stephens Banded snake (Gow, 1976) though the result from hybridisation may explain this phenomenon.

An incident where a case of hybridisation resulted in an unsuccessful birth at WildWorld, occurred between a male Stephens Banded snake and a female Pale-headed snake. Fertilisation occurred, though due to the weak condition of the female (from a combination of factors), she died prior to giving birth. Upon dissection of the gravid snake, fully developed neonates displaying varying colour patterns common to both adults were revealed.

In early February WildWorld's application to the Dept. of Environment & Heritage to take from the wild a male Pale-headed snake was granted. A trip was shortly organised for the 9th, 10th and 11th of February

meetings

1993 to survey the Mt.Surprise/Mt.Garnet region. It was the staff's intention to restrict the breeding of this species to animals from the same general vicinity. A female already maintained in the collection at WildWorld was collected from the Mt.Garnet area on 16.7.91.

The area to be investigated encompasses some 200 square kilometres of dry woodland with a grassy understorey. The main geological features consist of granite, basalt and limestone. Those areas amongst these outliers which provide fertile soils and protection from fire still support a relic semi-evergreen vine thicket community, i.e. Forty Mile Scrub, Undara Lava Tubes and Chillagoe/Mungana National Park.

This area is the home to eight endemic species of lizard, all described since 1979. Six of the species are known from only one or two sites and one species, Lerista ameles is represented by a single specimen. Due to the vastness and the lack of field research undertaken within this region there is still scope to locate additional sites for some of these currently restricted species and even the possibility of encountering hitherto undescribed species cannot be overlooked.

On the 9.2.93 in an area of Ironbark dominated woodland approximately 10 km east of Forty Mile Scrub, an adult male Pale-headed snake was discovered coiled under a protruding piece of bark on the trunk of a live Ironbark Eucalypt about 1.5 metres from ground level. This particular patch of woodland showed no signs of any recent fire activity or degradation from cattle. The random lopping of the taller straight-trunked Eucalypts for fence posts was the only disturbance evident within this virtually unspoilt area. The occurrence of five gecko species found utilising the many exfoliating bark sites indicates the near natural state of the habitat, as well as an abundant food source for predatory animals e.g. the Pale-headed snake.

This snake has since been set up in the collection at WildWorld and is still settling in to its new surrounds. With a little luck, we envisage breeding this species in the '93/'94 season which if successful would be the only known attempt to reproduce this northern variant of the Pale-headed snake.

LIST OF SPECIES RESTRICTED TO THE WESTERN SLOPES OF THE
ATHERTON TABLELANDS

Delma mitella (Shea, 1987) A legless lizard known from two localities in sclerophyll forests west of Ravenshoe/Herberton.

Lygisaurus rococo (Ingram and Covacevich, 1988) A small skink restricted to limestone towers around Chillagoe/Mungana. This species may also occur in numerous other limestone areas outside its present known range.

Ctenotus monticola (Storr, 1981) Only known from a single locality. Possibly present in surrounding areas.

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Ctenotus hypatia As above.

Ctenotus zebrilla (Storr, 1981) Located throughout the region, inhabiting rocky hills amongst Eucalypt woodland with grassy understorey.

Lerista ameles (Greer, 1979) Single animal known; found under a granite slab on an outcrop east of Mt. Surprise.

Lerista storri (Greer, McDonald and Lawrie, 1983) Chillagoe area inhabiting loose, sandy soils in woodland and at the base of limestone towers.

Sphenomorphus cracens (Greer, 1985) Common, occurring in sclerophyll forests and rock outcrops. Hides under ground cover.

Two other species of lizard occur predominantly within the region investigated though have been located outside of the region i.e. Anomalopus gowi, Oedura coggeri.

SPECIES ENCOUNTERED

Agamidae

Frill-necked lizard Chlamydosaurus kingii 9.2.93 Adult male perched 2 metres from the ground on a dead Acacia tree east of Forty Mile Scrub. 10.2.93 Adult male positioned on a tree trunk, between Einasleigh and Gulf Developmental Rd. intersection.

Gekkonidae

Steindachners gecko Diplodactylus steindachneri Night of 9.2.93, 2 specimens found crossing the road west of Undara turn off.

Northern Dtella Gehyra dubia Numerous throughout whole region, found amongst a granite outcrop, under bark and crossing roads at night.

Bynoes gecko Heteronotia binoei Common under ground cover throughout the region.

Pelagic gecko Nactus pelagicus found under rotten logs in woodland east of Forty Mile Scrub.

Rough Knob-tailed gecko Neohrurus asper 2 specimens on the night of 10.2.93; one near Conjuboy station turn-off and another west of Forty Mile Scrub.

Northern Velvet gecko Oedura castelnaui Found under bark in a number of woodland habitats between Forty Mile Scrub and Mt. Garnet.

Coggers Velvet gecko Oedura coggeri Found in a rock crevice in Newcastle Range, east of Georgetown.

meetings

Marbled Velvet gecko Oedura marmorata Common under bark between Forty Mile Scrub and Mt.Garnet.

Ocellated Velvet gecko Oedura monilis 9.2.93 found under bark; 8.2.93 active at night foraging on a tree trunk. Forty Mile Scrub.

ZigZag Velvet gecko Oedura rhombifer Common under bark between Forty Mile Scrub and Mt.Garnet. Also found under bark east of Georgetown.

Pygopodidae

Burtons Legless lizard Lialis burtonis 10.3.93 located crossing road at night between Lynd Junction and Forty Mile Scrub.

Scincidae

Jewelled Four-fingered skink Carlia jarnoldae Common around a series of granite outcrops between Mt.Garnet and Forty Mile Scrub.

Carlia munda As above

Carlia mundivensis A couple of skinks found active on a granite outcrop west of Forty Mile Scrub.

Carlia pectoralis One adult found under a basalt slab in Forty Mile Scrub. A couple of sub-adults also active in the same locality 9.2.93.

Snake-eyed skink Cryptoblepharus virgatus Active amongst rock outcrops and on tree trunks throughout region.

Striped skink Ctenotus robustus Active in woodland near a granite outcrop between Mt.Garnet and Forty Mile Scrub.

Copper-tailed skink Ctenotus taeniolatus Found under granite slab on soil west of Forty Mile Scrub 11.2.93.

Fire-tailed skink Morethia taeniopleura Dead specimen found under tin in above mentioned locality.

Proablepharus tenuis Active amongst granite outcrop in above mentioned locality 11.2.93.

Glaphyromorphus cracens Found under a rock on soil in above mentioned locality 11.2.93.

Glaphyromorphus oardalis Active amongst leaf litter at the base of a rock outcrop in Newcastle Range, east of Georgetown.

Bar-sided skink Eulamprus tenuis Found amongst a granite outcrop between Forty Mile Scrub and Mt.Garnet.

meetings

Varanidae

Varanus sp. A road killed animal found between Mt. Garnet and Forty Mile Scrub in woodland 9.2.93. Tentatively named V. pellewensis.

Storrs Monitor Varanus storri Found basking on small outcrops in the Newcastle Range 10.2.93.

Black-headed monitor Varanus tristis Found perched on a live horizontal limb of a Eucalypt, between Einasleigh and Gulf Developmental Rd. intersection 10.2.93.

Boidae

Black-headed python Aspidites melanocephalus Found crossing the road at night between The Lynd and Forty Mile Scrub 10.2.93.

Stimsons python Liasis stimsoni As above.

Carpet python Morelia spilota variegata Crossing Tomoulin Rd. at night on 8.2.93.

Colubridae

Brown Tree snake Boiga irregularis Typical banded form found crossing the road at night between Undara turn-off and Mt. Surprise 10.2.93.

Common Tree snake Dendrelaphis punctulatus Found dead on the road between The Lynd and Forty Mile Scrub 10.2.93.

Elapidae

Collared Whip snake Demansia torquata Found under a granite slab amongst outcrop between Mt. Garnet and Forty Mile Scrub 9.2.93.

Orange-naped snake Furina ornata 2 specimens crossing the road at night; one east and one west of Mt. Surprise 9.2.93.

Pale-headed snake Hooelocephalus bitorquatus Male specimen under bark of Ironbark Eucalypt 9.2.93.

Common Brown snake Psuedonaja textilis Sub-adult crossing the road at night between The Lynd and Forty Mile Scrub 10.2.93.

Carpentaria snake Rhinoplocephalus boschmai Crossing the road at night between Mt. Garnet and Forty Mile Scrub 10.2.93.

Typhlopidae

Blind snake Rhamohotyphlops proximus Found under a log on the ground in a disused ant nest, east of Forty Mile Scrub 9.2.93.

field trips

FIELD TRIPS

A field trip to the WHITFIELD RANGE was held on Saturday 12th of December with a total of nine people attending. The walk began at nightfall at about 7.00 p.m. We split into two groups, one taking the right fork, the other taking the left fork of the Red Arrow circuit track. Both groups met at the start of the Blue Arrow walk and continued to walk along this track to approximately half way before turning back.

SPECIES OBSERVED

Green Tree frog Litoria caerulea. 7.05 p.m.. Emerged from interior of metal railing at entrance of walk. 7.30 p.m. Another specimen found beside track in a bamboo grove.

White-lipped Tree frog L. infraflexata. 7.35 p.m. Adult found perched on a dead horizontal branch beside the track in a bamboo grove.

Dtella Gehyra dubia. 7.20 p.m. Found on the trunk of a tree approximately 6 metres from the ground. The animal was a female containing two well developed eggs.

Pelagic gecko Nactus pelagicus. Found crossing track.

Slaty-grey snake Stegonotus cucullatus. 7.45 p.m. Male individual located active amongst Guinea grass beside track. Portion of its tail was missing.

No further reptiles or amphibians were located along the Blue Arrow walk apart from the introduced Cane Toad Bufo marinus. These were commonly found along both tracks and all appeared emaciated and partly dehydrated as a possible result of the extended dry weather conditions.

On the 20.2.93 another trip was organised to survey the whole length of both the Red and Blue tracks. 7 members attended this walk which commenced at 6.30 p.m. The only reptile sighted was a snake on the return trip along the Red Arrow track which eluded capture and was unable to be identified.

field trips

On the 17.1.93 a field trip was planned to survey the herpetofauna of the Carbine Tablelands rainforest at Mt. Lewis. An entry permit was granted by the Atherton office of the Forestry Service but due to the wet weather we were unable to enter this area. The small group of 5 members decided to go further west to MT. CARBINE where it is generally drier due to its location in a rainshadow on the leeward side of the Carbine Tablelands. A total of 21 species of reptile and 1 frog species were located.

SPECIES OBSERVED

First locality inspected - Granite outcrop located above the Cook Highway near Turtle Cove, on the dry eastern slopes of the McAllister Range.

Coggers Velvet gecko Oedura coggeri. Two adult male individuals found under flat granite slabs.

Striped skink Otenotus spaldingi. Two adult animals found, one under a rock on soil, the other under a rock on rock.

Major skink Egernia frerei. An adult specimen found under a flat rock on soil on the perimeter of the outcrop.

Second locality - Granite outcrop located beside a tributary of the Mary river along East Mary River Rd.

Dtella Gehyra dubia. Two adults found under bark on Eucalypts.

Bynoes gecko Heteronotia binoei. Under granite exfoliation on outcrop.

Four-fingered skink Carlia storri. Both sexes including gravid females were commonly seen foraging amongst ground cover.

Snake-eyed skink Cryptoblepharus virgatus. Found active on rock outcrop.

Major skink Egernia frerei. An adult individual found basking in a clearing between two granite boulders. Retreated into crevice when encountered.

Bar-sided skink Eulamprus tenuis. One individual found in rock crevice, another located in a knothole in a live Eucalypt.

Fire-tailed skink Morethia taeniopleura. Found active on rock outcrop.

Amongst the outcrop two sloughs of the Childrens python Liasis stimsoni were found in two different crevices.

field trips

Third locality - the Orchid Barn, Maryfarms Rd. Numerous sheets of corrugated iron and slabs of slate piled around farm.

Bynoes gecko Heteronotia binoei. Very common under sheets of iron and slate.

Four-fingered skink Carlia storri. Very common amongst ground cover.

Four-fingered skink, possibly Carlia vivax. Found under sheet of corrugated iron. This skink which eluded capture, had pink colouration and a long tail.

Fire-tailed skink Morethia taeniopleura. Revealed under sheet iron on soft soil; escaped into soil.

Childrens python Liasis stimsoni. Two animals were found, one under sheet iron, the other under a slab of slate.

Fourth locality - Sites around the township of Mt. Carbine containing sheet iron were examined. All the species listed below were found under pieces of sheet iron.

Bynoes gecko
Heteronotia binoei

Dtella
Gehyra dubia

Four-fingered skinks
Carlia munda

Carlia prava

Snake-eyed skink
Cryptoblepharus plagiocephalus

Skink
Lygisaurus foliorum

Keelback
Tropidonophis mairii (slough)

Frog
Cyclorana novaehollandiae

Fifth locality - Granite boulder strewn hill west of Mt. Carbine near the Mitchell river.

Bynoes gecko H. binoei. Found under granite rocks.

Four-fingered skinks C. jarnoldae and C. munda were sighted active amongst granite outcrops. Another individual Carlia sp. coloured a bright pink was also witnessed active.

Lygisaurus foliorum were sighted active in leaf litter near the river.

Nightspotting along the road between Mt. Carbine and Mareeba.

Carbine to Mt. Molloy

Keelback Tropidonophis mairii. Found dead on the road.

Common Tree snake Dendrelaphis punctulatus. Found dead on the road.

field trips

Brown Tree snake Boiga irregularis. Found active crossing road. Banded form typical of this area.

Carpet python Morelia spilota variegata. A live 1 metre specimen found on the road.

Molloy to Mareeba

Carpentaria snake Rhinoplocephalus boschmai. Crossing the road at 8.20 p.m.

Keelback T.mairii. Two road killed animals located approximately 1 kilometre apart near Mareeba.

On 24.1.93 another attempt was made to explore the herpetofauna of the Carbine Tablelands, which like our previous effort had to be abandoned due to even heavier rain. However, the eight members who arrived decided to travel again to the MT.CARBINE area where we chose to examine a granite outcrop at the source of a creek.

SPECIES OBSERVED

Saw-shelled tortoise Elseva latisternum. A juvenile specimen found swimming in a pond.

Two-lined dragon Diborhophora australis. Active amongst grassy slopes intermixed with low outcrops: active on granite ridges.

Water dragon Physignathus lesueurii. Active on a rock platform by the rocky creek.

Dtella Gehyra dubia. Numerous animals found under granite exfoliations and in crevices.

Four-fingered skinks Carlia jarnoldae C.munda C.storri. All three species were commonly found active amongst ground litter and vegetation. C.jarnoldae is found higher up on granite outcrops.

Major skink Egernia frerei. 3 animals located. One found in a rock crevice, second under a half fallen tree trunk and the third foraging amongst low outcrops.

Bar-sided skink Eulamorus tenuis. Common in rock crevices, under exfoliations and under bark.

Lygisaurus foliorum. Found under the stump of a Black-boy Xanthorrhoea sp.

Varanus sp. Throughout this locality numerous rock monitors were located within crevices and under exfoliations. It is tentatively identified as the Freckled monitor V.tristis with which it differs in both habit and morphology to the more familiar V.tristis which also

field trips

occurs in the region. Efforts to compare this species with the other variant are planned for later on in the year.

Macleays Water snake Enhydryis polylepsis. A specimen was observed swimming in a small pond of the creek. The animal was secured by the tail but released to prevent damage.

At the township of Mt. Carbine a couple of sites containing sheet iron were inspected and those species found included:

Dtella

Gehyra dubia

Synoos gecko

Heteronotia binoei

Four-fingered skinks

Carlia munda

C.storri

C.vivax

Keelback

Trogonophis mairii

On the return trip to Cairns a Frill-necked lizard was found on the road which had apparently been clipped by a car. Its damages appeared minor. However the animal was obviously in need of attention so it was given to Hartley's Creek Zoo where it has settled in and is feeding well. The only outward sign of injury is the loss of one eye. Found dead on the road between Mt. Molloy and Mareeba were an adult male Childrens python Liasis stimsoni and a Keelback T.mairii.

On the Saturday night of 20.3.93 a nightspotting trip was held to the LAKE MORRIS ROAD with 9 people attending.

SPECIES OBSERVED

Northern Leaf-tailed gecko Phyllurus cornutus. A dead animal was found on the road with a cockroach in its mouth.

Blind Snake Rhamphotylops sp. Tentatively identified as R.proximus, this animal was sighted on the road being pursued by a mouse.

Childrens python Liasis maculosus. Sub-adult animal dead on the road.

Scrub python Morelia amethystina. An adult male specimen was sighted at the edge of the road.

Carpet python Morelia soiolota. Adult specimen active on road.

Small-eyed snake Rhinoplocephalus nigrescens. An adult specimen found dead on the road.

field trips

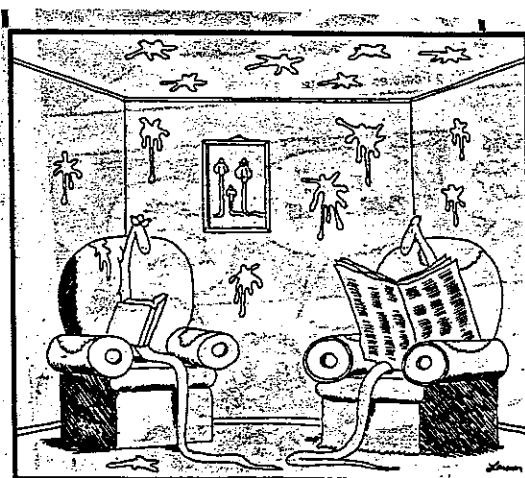
A field trip/social day was held at the BOULDERS near Babinda on 6.3.93 with 9 members and their families attending. Apart from the wet conditions an enjoyable time was had by all. The afternoon was spent swimming and barbecuing, before heading our separate ways to nightspot for reptiles.

Just after dark a small group of interested froggers attempted to search the nearby Boulders creek for any amphibian activity. Amongst a small section of shallow rapids approximately 100 metres upstream from the main swimming hole, four specimens of the Lacey-eyed Tree frog Nyctimystes davi were located perched on the exposed boulder tops positioned in the middle of the creek. All individuals were coloured a uniform tan brown though this species may rarely be patterned with a series of randomly positioned white spots.

This frog, like several other of its kind have suffered a drastic decline in population, which at present still remains unexplained. Some of the more specialized highland torrent frogs have completely disappeared from areas where they were once common as recently as two to three years ago. The highland colonies of the Lacey-eyed Tree frog have also diminished in most of its elevated range, though restricted populations of this species still occur in a number of lowland sites.

As its common name implies the Lacey-eyed Tree frog can be easily identified by its vertically elliptical pupil and its reticulated patterned lower eye-lid.

One other species, the Lesueurs River frog Litoria lesueurii, were commonly observed along a section of the creek immediately downstream of Devils Pool. Unlike the unusual positioning in the former species amongst the rapids, the Lesueurs River frog was commonly encountered along the creek's rocky margins.



The spitting cobras at home

field trips

At Easter a field trip was held to the COOKTOWN area with only two people making the trip. However many interesting species were located and photographed. The first day was spent driving through the Daintree area and nightspotting along the road between the Bloomfield River and the Lions Den. On the second day we looked around the Annan river and Cooktown, spotlighting at night on Black Mountain and also walking around the base of Black Mountain on the third morning before driving up to the sandstone country near Laura.

SPECIES OBSERVED

9.4.93

Brown Tree snake Boiga irregularis. Two specimens were found crossing the road south of the Bloomfield river crossing.

Scrub python Morelia amethystina. A 4 metre specimen was found on the road north of Wujal-Wujal community at 9.00 p.m.

Childrens python Liasis maculosus. An adult specimen found active on the road near Wujal Wujal.

Carpet python Morelia spilota variegata. A old 2 metre animal was seen on the road north of Wujal Wujal.

10.4.93

Annan river near Lions Den turn off.

Two-lined dragon Diporiphora bilineata. 2 sub-adult specimens found active amongst rocks.

Old sheds south of Cooktown in open dry forest.

Childrens python Liasis stimsoni. Found under a sheet of corrugated iron. Sub-adult.

Creek crossing north of Cooktown with monsoon vine forest.

Four-fingered skink Carlia longipes. Female active in leaf litter near top of the bank of the creek at edge of vine forest and more open forest.

Lygisaurus tanneri. Active in leaf litter in dry creek channel.

field trips

Northern Tree snake Dendrelaphis calligaster. A brightly coloured specimen with yellow face and salmon pink belly. This adult specimen was found half way up the bank of the creek in vine forest; it was active on the ground and attempted to escape up a vine. 12.30 p.m.

Black Mountain.

Ring-tailed gecko Cyrtodactylus louisianensis. Two adult specimens were sighted active in the shelter of the large granite boulders which form Black Mountain.

Black Mountain gecko Nactus galgajuga. An adult specimen of this animal was found emerging from beneath an exfoliated rock on a granite boulder. This and the following species are found only here.

Black Mountain skink Carlia scirtesis. One sub-adult specimen was found under an exfoliation on a granite boulder at night.

11.4.93

Black Mountain

Spotted Tree monitor Varanus scalaris. An adult was sighted active on the ground at the base of Black Mountain at 11.30 a.m. Ran up a small Eucalypt.

Dtella Gehyra dubia. Found under bark of dead Acaçia east of Laura.

Split Rock

Jewelled Four-fingered skink Carlia jarnoldae. Females active around sandstone outcrops.

Striped skink Ctenotus quinkan. Numerous adult specimens were sighted around sandstone outcrops near Split Rock.

Black Whip snake Demansia atra. Adult specimen seen active on the road near Laura at 5.30 p.m.

Water python Liasis fuscus. Seen active on the road by a swamp near Lakeland Downs. 8.00 p.m.

Numerous juvenile Green Tree frogs Litoria caerulea were seen along the road virtually all the way back to Cairns.

field trips

COMING FIELD TRIPS

Further field work at Mt. Whitfield is planned for:

Saturday 29th of May (night walk)
Sunday 30th of May (day walk)

We presently have a permit to enter the Mt. Lewis area for the months of May, June and July; further field trips to the Carbine Tableland (Mt. Lewis) are scheduled for:

Sunday 20th June
Sunday 27th June
Sunday 18th July

At the conclusion of our Carbine Tableland survey it is anticipated that we will apply for a permit to enter the Windsor Tablelands to survey the herpetofauna of this area. Field trips are tentatively scheduled for:

Sunday 22nd August
Sunday 12th September
Sunday 17th October

The following field trips are also planned for the remainder of 1993

Mt. Surprise/Tully Falls including the Undara Lava Tubes
Queens Birthday Weekend 12/13/14th of June

Tully Gorge - Sunday 25th July

Granite Gorge near Mareeba - Sunday 1st August

Mt. Bartle Frere - Weekend of 25/26th September

Daintree - Weekend of 27/28th November

Fitzroy Island (Christmas party and field trip)
Weekend of 11/12th December

Further details will become available at meetings or by contacting Tim Hawkes at (070) 553669 or (070) 577756 A/H.

ARTICLES

A Note On The Black-tailed Bar-lipped Skink

Glaphyromorphus nigricaudis

Tim Hawkes, C/- WildWorld, Cook Hwy, Palm Cove, Q. 4879

The genus Glaphyromorphus (formerly species belonging to the genus Sphenomorphus) are a group of glossy, long-bodied skinks which because of their cryptic nature are rarely encountered. All thirteen species are essentially fossorial, inhabiting moist, sheltered environments where they forage amongst dense ground litter, under rocks and logs in moist soil.

The Black-tailed Bar-lipped skink Glaphyromorphus nigricaudis is frequently encountered at WildWorld generally active during the early morning and late afternoon (crepuscular). It is commonly revealed hidden under rock piles, piles of dead vegetation and in amongst dense leaf litter. Mounds of dead vegetation left overnight are quickly occupied by these skinks in their foraging for food.

The climbing ability of these skinks has not been documented, though members of the closely related genus Eulamorus are recognised as accomplished climbers due to their greater limb lengths and equal body to tail lengths.

On the 13.3 and 14.3.93 a specimen of the Black-tailed Bar-lipped skink was observed positioned on top of a 3 metre high block wall as part of the maintenance shed, at 8.30 a.m. At approximately the same time the following day the same skink was noticed on top of the same wall, 3 metres from the previous site. On both occasions, when disturbed it retreated into the hollow interior of the block wall.

The long snake-like body and short legs that are typical of this group of skinks are obvious adaptations to a fossorial life. The practice of climbing is probably not commonly exercised, though this account does display the ability for this better developed limbed member of the genus Glaphyromorphus to climb obstacles.

articles

Discovery And Hatching Of The Eggs Of The Northern Leaf-tailed Gecko
Phyllurus cornutus.

Michael Anthony, P.O.Box 523, Manunda, Qld.4870

The Northern Leaf-tailed gecko Phyllurus cornutus (Ogilby, 1892) is a spectacular inhabitant of our northern rainforests. Cogger, 1992 states that it also occurs in adjacent wet sclerophyll and beech forest, on the trunks of both large trees and small saplings. Ehmann, 1992 states that individuals shelter under peeling bark, in tree holes (especially buttress rot-out holes) and in clefts formed by well established strangler figs. Both Cogger, 1992 and Greer, 1989 mention the fact that this species may forage on the Stinging Tree Laportea gigas with no ill effects. These geckos are often found on rainy nights both near the ground and high up on the trunks of large rainforest trees.

On 7.3.1992 2 large eggs were found in rainforest near Koombooloomba Dam, northern Queensland. While searching for reptiles my attention was drawn to a large dead tree, off which bark had fallen and was lying on the ground amongst the buttress roots on top of leaf litter. As I had encountered reptiles in this situation previously in rainforest (Sphenomorphus sp. at Bloomfield river and Cacochis krefftii at Coffs Harbour, N.S.W.) it was decided to lift some of the bark and sift through the litter, and in doing so discovered 2 oval shaped reptile eggs in the corner of the buttress amongst a mixture of decaying vegetation and sand, below the layer of leaf litter. The eggs were parchment shelled, 28 millimetres long, 18 mm wide across the centre and positioned approximately 30 mm apart. In the action of sifting through the litter at the time of discovery one of the eggs was accidentally moved and rolled. The eggs were removed and kept in a sample of the medium in which they were found, and incubated in a tobacco tin inside a large plastic container. This was checked daily and small amounts of water added when considered necessary.

At midnight on 21.3.92, the eggs were checked and sitting on top of one of the eggs was a hatchling P. cornutus, measuring 47 mm snout to vent, with a total length of 75 mm (head 21 mm, neck to vent 26 mm, tail 28 mm). The egg was slit along its top for about half its length. On 23.3.92 the second P. cornutus was observed halfway emerged from the egg at 2153 hours. Also noted was the slough of the first hatchling. The animals were photographed and kept for a short time before being released at the site of discovery.

This account agrees with that of Ehman, 1992 who describes the eggs as being laid in soil and covered with soil and litter. He also states that this species (at least in southern populations) nests communally with nests of 10 and 14 eggs being found.

References

- Cogger, H.G. 1992. Reptiles and Amnibians of Australia. Reed.
Ehman, H. 1992. Reptiles (in) Encyclopedia of Australian Animals. Series editor R. Strahan. Angus & Robertson.
Greer, A.E. 1989. The Biology and Evolution of Australian Lizards. Surrey Beatty.



FIG.1. Hatchling E.cornutus partly emerged from the egg.

A Simple and Effective Method of Eradicating the Snake Mite
Ophionyssus natricis

Michael O'Brien, C/- Wildworld, Cook Hwy., Palm Cove, 4879.

Anyone who has maintained a collection of snakes in captivity for any length of time will be familiar with the Snake Mite Ophionyssus natricis and the frustration that can result when one attempts to isolate and eradicate this small bloodsucking parasite.

Over the years many techniques have been utilised in this on-going battle. These range from rubbing olive oil over the affected specimen (Gow, 1977) in the hope of suffocating the troublesome arachnids, to the topical application of any number of chemicals such as Neguvon, Dichlorvos, and Drie-Die 67 (Weigel, 1988). While all of these treatments have been used with varying degrees of success they can be detrimental to the host reptile if used incorrectly.

Over the last 10 to 12 months a new product has been trialled at WildWorld in the battle against mites. The product is actually a human hair-lice treatment called Orange Medic. The active constituent is Permethrin 25/75, a chemically synthesised form of the naturally occurring insecticide Pyrethrum. This is in a concentration of 2 grams per litre, and this product is not listed as a poison by the National Health & Medical Research Council (NHMRC).

The treatment of mite infested snakes at WildWorld follows a reasonably set regime.

1/ The snake is removed from its enclosure and soaked in room temperature water for a number of hours to drown as many mites as possible.

2/ The cage furnishings (rocks, logs, gravel etc.) are discarded and the cage is thoroughly scrubbed on all surfaces using a chlorine based disinfectant. The cage is rinsed, excess water is removed and then it is sprayed with a solution of Orange Medic ensuring that all surfaces are wetted. This treatment is repeated after 2 or 3 days.

3/ The snake is restrained and the entire body (not the head) is sprayed with the orange Medic solution. The surfaces of the head are wetted using a cotton bud, careful attention being given to the eyes and the bottom jaw. This procedure is usually repeated 2 to 3 times at 2 day intervals.

4/ During the period of treatment the affected animal is housed in a clean plastic garbage bin. This allows easy isolation of the animal and avoids re-infesting the clean cage if any mites are still alive on the snake.

5/ The snake is presumed to be mite free at this point and is returned to its cage. Careful observation is continued for some weeks to catch any further outbreaks early, should they occur.

If the infested snake is about to slough, treatment should be carried out as usual, and an attempt to anticipate the time the snake will slough should be made. When it is felt that sloughing is imminent the skin should be carefully removed. This will have the positive effect of removing mites and their eggs. It is best to attempt this procedure with two people as this makes it easier to ensure that mites do not re-infest the "clean" or sloughed part of the snake.

The dilution used at Wildworld is approximately 1 part Orange Medic to 6 or 7 parts water, however stronger dilutions of 1:2 have not caused any apparent problems.

Over the trial period a wide range of Elapids, Colubrids and Boids (both adults and juveniles) have been successfully treated using this technique. To date there has been nothing to indicate adverse reaction to the Orange Medic by any animals.

Many thanks are due to Robbie Brady and Tony Gordon, of the Whitsunday Wildlife Park, who first suggested the merits of Orange Medic in relation to Snake Mite control.

Orange Medic is manufactured by:

EMERALD FOREST PTY. LTD.
31 CASEY ST, AITKENVALE
TOWNSVILLE, QLD.
(077) 754188

and is available in selected Soap Shops and Health Food Stores.

REFERENCES:

Gow, G.F. 1976. Snakes of Australia. Angus and Robertson, Australia
Weigel, J.R. 1988. Care of Australian Reptiles in Captivity. Globe Press, Brunswick, 3056. 144 pp.

Sunday Mail 22/11/92

NEW LIZARD FOUND

QUEENSLAND has a new lizard — one distinctly different to any other known vertebrate. But people will have to wait until mid-next year to find out what it is called and what it looks like.

National Parks and Wildlife officer Cameron James discovered the lizard in August near Murgon, 250km north-west of Brisbane.

Mr James had been working on a federally funded survey of unexamined rainforests when

By KAY DIBBEN
he came across the previously unknown lizard in a forestry reserve.

The Queensland Museum is identifying and describing the lizard, which is 15cm long, very spiny and brown with darker patches and stripes.

The Museum's Senior Curator (Vertebrates) Ms Jeanette Covacevich said the discovery of a new vertebrate animal was

a rare occurrence. "In the late 20th Century, in rainforest, which is a relatively well-known habitat, it is a remarkable discovery," she said.

The Museum has returned with National Parks officers to the area where the lizard was discovered to collect more specimens.

It is believed to be confined to one area of semi-evergreen vine thicket near Murgon.

Ms Covacevich said the Museum was gathering data for

the descriptive work and collaborating with Queensland University researchers who were doing the biochemical work.

In July or August next year a special issue of the memoirs of the Queensland Museum, devoted to rainforest research, will be released.

Ms Covacevich said it would contain a description of the new lizard and all the results of Cameron James' survey.

Developing Husbandry Techniques To Breed Pythons In Captivity.

Rav Field, 1 Faraday Street, Wulguru, 4811.

During the past ten years I have successfully bred pythons in captivity and artificially incubated many clutches of eggs. The species, Black Headed pythons Aspidites melanocephalus, Childrens pythons Liasis maculosus, Water pythons L.fuscus, Olive pythons L.olivaceus, Scrub pythons Moralia amethystina, Carpet pythons M.spilota and Green pythons Chondropython viridis have collectively produced 358 eggs of which 285, or 80%, hatched.

Between 1980 and 1984 the hatch rate was 60% i.e. 61 eggs hatching from the 102 laid. From 1985 to 1990 the success rate was 87% i.e. 224 hatchlings from 256 eggs laid. These figures include the failure of 17 out of 18 eggs laid by a Green python. The eggs were laid from a branch in the cage and fell to the floor resulting in almost total failure. Exclusion of this mishap, would increase the hatch rate to 94% i.e. 223 hatching from 238.

I present these records to demonstrate that the husbandry techniques I use are effective over a range of species, effective over a period of time and, I believe, improving as the increases in clutches and hatching percentages indicate.

This technique is based on "Seasonal Conditioning" and the calculated "Timing" of mating introductions.

It is necessary to draw on our knowledge of pythons in the wild to gain and develop techniques to use in captivity. To this end I have tried to piece together typical lifestyles or activity patterns of pythons, based on published literature, common knowledge, the thoughts of fellow herpetologists and my own observations.

In the tropics or at least in the Townsville area, pythons hatch at the start of the wet season, usually in December. Hatching coincides with the "biological rush" of the wet season. This is the time of the year that offers their best chance to survive, there being an abundance of suitable prey such as frogs, lizards, and other small snakes. The warm weather ideally suits nocturnal feeders, pythons in the wild rarely take prey in daylight hours. Since there is no evidence to suggest that pythons have any social or communal interaction before sexual maturity, their existence revolves around finding food, water and shelter and avoiding falling prey to other predators. This lifestyle is affected and determined by the seasons. Pythons feed after they slough and continue feeding until the cooler weather conditions of autumn inhibit their activities. Because they are cold blooded creatures, reliant on external sources of heat for energy, the cold conditions are not conducive to nocturnal hunting or

articles

the digestion of food. Pythons find suitable shelter during winter and remain relatively inactive until the following spring, when the warming weather invites the pythons to resume feeding. This feeding cycle peaks toward the end of summer, declines during autumn and ceases by winter, after which the pattern is repeated, determined by the seasons.

Having established the basic concept on "Seasonal Activity" it was necessary to review information on python's breeding in the wild and in captivity. There is sufficient evidence to suggest the following:

1. Pythons are seasonal breeders.
2. They tend to gather in small groups "Mating Aggregations".
3. Males indulge in ritual and occasionally real combat.
4. Courtship occurs in the form of a crawling, following motion. Performed by both sexes.
5. Males use their spurs in a raking motion to stimulate the female prior to copulation.
6. Cold weather influences or heightens sexual activity.
7. Initial reaction on the introduction of partners usually comes from the female in the form of passing of fluids and occasionally blood.
8. Eggs are laid approximately 12 to 14 weeks after copulation.
9. Prior to laying the female often lays side on or in a belly facing upward position.
10. Pythons slough approximately three weeks before laying eggs.
11. The eggs adhere to each other forming a solid mass when drawn together to form a clutch.
12. The weight of the eggs may equal more than 30% of the body weight of the female.
13. The female incubates her eggs and can control the temperature to an extent by a process called shivering thermogenesis.
14. From records taken from clutches monitored in the wild and in captivity, 30 degrees Celsius may be the optimum incubating temperature.
15. High humidity is essential in egg incubation.
16. Incubation period ranges from 7 to 14 weeks and is temperature and species variable.
17. Pythons exit their eggs by slitting the shell with a specially formed tooth.

In assessing data on breeding and seasonal activity I determined the need to duplicate the influences of the seasons and calculated a long term timetable to follow.

Refer timetable. (TABLE:1)

This timetable forced consideration of many aspects of husbandry including housing, individual specimen conditioning, climate control

and of course the timing of mating introductions, critical to success in breeding.

TEMPERATURE RANGE °CELCIUS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
DAY MAXIMUM	32	32	30	28	26	24	20	24	28	30	30	32
NIGHT MINIMUM	24	24	22	20	18	16	12	16	20	22	22	24

NOTES - THIS IS A TEMPERATURE RANGE SUGGESTED TO MATCH EXTERNAL SEASONAL CONDITIONS. CAGE LAYOUT SHOULD ALLOW THE SNAKES TO EXPOSE THEMSELVES TO OR TO RETREAT FROM THE HEAT SOURCE AS DESIRED. WHEN FEMALES ARE DEVELOPING EGGS THEY TEND TO BRACK CLOSE TO THE HEAT SOURCE FOR LONG PERIODS.

FEEDING	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
JUVENILES	✓	✓	✓	✓	✓				✓	✓	✓	✓
ADULT MALES	✓	✓	✓	✓	✓				✓	✓	✓	✓
ADULT FEMALES NOT PRODUCING EGGS	✓	✓	✓	✓	✓				✓	✓	✓	✓
ADULT FEMALES DEVELOPING & LAYING EGGS BUT NOT INCUBATING	✓	✓	✓	✓	✓				?	?	✓	✓
ADULT FEMALES DEVELOPING, LAYING & INCUBATING	✓	✓	✓	✓	✓							

NOTES - FOOD OFFERED TO FEMALES DEVELOPING EGGS IS RARELY TAKEN. REFUSAL IS A GOOD INDICATION THAT THE FEMALE IS GRAVID. BECAUSE OF LOSS OF BODY CONDITION IN PRODUCING AND INCUBATING EGGS AND THE ACCOMPANYING SHORT TIME TO FEED, FEMALES MAY NOT REACH BREEDING CONDITION THE FOLLOWING YEAR. THEY MAY BREED EVERY SECOND YEAR.

MATING INTRODUCTIONS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
INTRODUCING FEMALE TO MALE							✓	✓				
EGG LAYING									✓		✓	
HATCHING	✓											✓

TABLE: 1

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Eggs hatch in summer coinciding with the wet season; by counting back 10 to 12 weeks (average incubation period) we establish that eggs are laid in October; by counting back 12 to 14 weeks (gestation period) we establish that mating would occur in July, in winter not in spring as much literature indicates. I introduce pythons for mating on the 1st of July each year, and pursue their keeping with that goal in mind.

HOUSING I house my pythons separately in 1200 centimetre x 600 cm x 600 cm wooden frame cages with glass fronts and peg board walls and roof. A light socket is built into the roof of each cage. Clear light bulbs of various wattages provide heat when necessary during the day and 40 watt blue bulbs are used to provide heat when necessary at night. The use of dimmer switches and separate light sockets for clear and blue bulbs permits better climate control. Water is provided in plastic bowls that are difficult to overturn (food bowls for pets). The water is made available all year round.

A foam box, painted brown, is provided as an insulated hide, the box has a removable lid and a relatively small entrance hole. The timber floor is covered by fitting corrugated panels wrapped in unprinted paper. A smooth branch is fitted giving access to the heat source.

Apart from the branch the cage has no natural appeal, it is designed to permit climate control and easy cleaning.

Notes: Pythons kept in large naturally landscaped cages particularly outdoor cages, tend to fare poorly in comparison to those housed in relatively small indoor cages.

CONDITIONING/FEEDING Pythons should be fed nocturnally. Their feeding should be controlled using the seasons as a guide. Commence feeding in spring, gauge the supply to peak by the end of summer, reducing to finish toward the end of Autumn. The volume of food should be controlled to produce specimens neither obese nor underweight; males tend to be slightly slimmer than females.

Notes: I try to avoid stress to the animals by keeping handling to a minimum and by ensuring that their nocturnal activities are not disturbed by blinding artificial light.

CLIMATE CONTROL I try to control photo-period, temperature and humidity to duplicate seasonal conditions. Natural photo-period is best achieved by positioning cages so that the effect of day/night, night/day change is experienced by its inhabitants. It is not necessary for the cages to receive direct sunlight.

In situations where cages cannot receive natural photo-period it is necessary to provide the effect by turning lights on and off at daybreak and sunset respectively using photo-sensitive switches or timers.

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Temperature control, observing the need to provide heat without light, was mentioned in the section on Housing, refer to the timetable for further information.

A lack of humidity can cause dehydration and damage to delicate nasal membranes, resulting in infection and undue stress.

Humidity is difficult to control without the use of a humidifier, but can be increased by using a simple water spray.

Notes: Climate is easy to control in Townsville. I have no experience in keeping pythons under the adverse conditions faced by keepers in cold climates.

MATING INTRODUCTIONS In the wild pythons lead solitary lives without social or communal interaction; for this reason I house them separately. As mentioned earlier I look to introduce my pythons together for mating on the 1st of July each year. The introductions may be delayed or brought forward depending on the timing of sloughing. The female is introduced to the males cage. Usually within a short time the female locates the male and reacts by passing fluids and occasionally a small amount of blood. The male is much slower to react and may show little interest until the overnight drop in temperature prompts courtship and copulation. After 2 to 3 days I remove the female and reintroduce after a week. This process is repeated until interest in mating wanes: this may take from 3 to 8 weeks.

When the initial introduction produces no reaction from either sex I introduce other females or males or both to the same cage. In effect producing an aggregation. This grouping of the pythons usually produces the reaction from the females as previously described, and stirs the males into ritual combat. This combat is best described as a pushing bout involving the raising and lowering of their body in undulating motions. I think to force their opponents down and away. The wrestling sometimes turns to biting which may inflict severe gashes.

EGG LAYING/INCUBATION The incubation period of python eggs is well documented. My practice is to remove the eggs from the female and incubate them artificially. By providing high humidity and an even temperature of 30 degrees Celsius I enjoy a high hatch rate. Because higher percentages of eggs have hatched from clutches grouped together by the female I allow the females to perform this task rather than place the eggs into the incubator individually.

Notes: Occasionally eggs reach full term but do not hatch. One such egg was cut open to reveal a number of slits in the inner wall of the egg. These were not deep enough to allow the python to hatch. After the first few eggs hatch I carefully cut a slit in the remaining eggs to assist hatching.

INITIAL FEEDING New born pythons do not feed until after their first sloughing, about two weeks after birth. It is important to house them separately in small cages, offer suitable sized food at night and

allow the pythons to locate and kill their first meal. Prey not taken within an hour of introduction should be removed and re-offered in a couple of nights. A second failure to feed may warrant a change in the choice of prey.

Notes: Force feeding is the last resort. Every other option should be tried. Many problems associated with failure to feed are caused by unnecessary handling and failure to provide the right conditions.

GENERAL I believe that the breeding of pythons in captivity will become almost automatic as keeping practices include seasonal influences. The protective legislation, that has restricted the taking of reptiles from the wild has proved an unexpected bonus to amateur herpetology in Australia by forcing keepers to take better care of their reptiles leading to breeding in captivity. The legislation has had a similarly positive effect on Zoos and Reptile Parks.

ACKNOWLEDGEMENTS My success in captive breeding is largely due to invaluable assistance from Brian Barnett and Neil Charles. I thank Joe Bradl, Bob Bradl and Peter Krause for sharing their knowledge and expertise. Peter Moran for the loan of Olive pythons, Dr. Rick Shine for assistance in publishing related papers and the Australian Museum for providing a grant from the "Peter Rankin Trust Fund".

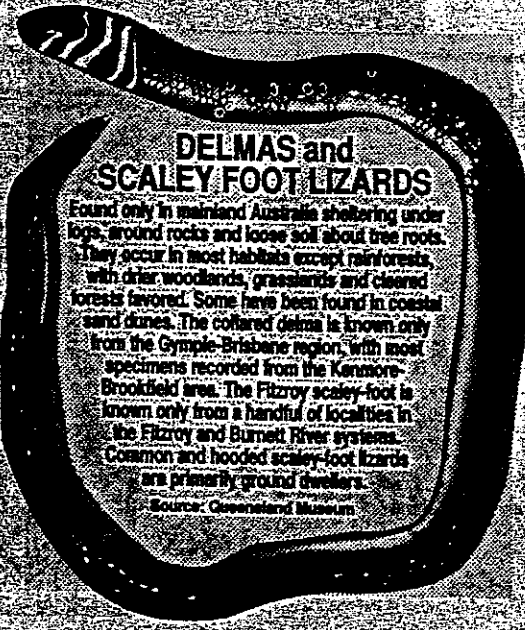
INFOMAIL

LIZARDS WHICH LOOK LIKE SNAKES

As a means of defence, certain animals confuse predators by mimicking other animals which are either dangerous or poisonous.

Certain lizards mimic snakes — the most common are from the pygopodidae family, including the small delmas, common scaly-foot, hooded scaly-foot and fitzroy scaly-foot.

Most of these lizards have such small limbs they are difficult to see. Their color patterns are similar to those of unbanded forms of juvenile brown snakes and also resemble a number of small, dark-headed, venomous snakes. They are distinguished from snakes by five characteristics — a broad, fleshy, unforked tongue; external ear openings; a greater number of head scales; more than one broad ventral scale; and an ability to shed their tails when threatened and grow a shorter, replacement tail.



DELMAS and SCALEY FOOT LIZARDS

Found only in mainland Australia sheltering under logs, around rocks and loose soil about tree roots. They occur in most habitats except rainforests, with drier woodlands, grasslands and cleared forests favored. Some have been found in coastal sand dunes. The colored delma is known only from the Gympie-Brisbane region, with most specimens recorded from the Kenmore-Brookfield area. The Fitzroy scaly-foot is known only from a handful of localities in the Fitzroy and Burnett River systems. Common and hooded scaly-foot lizards are primarily ground dwellers.

Source: Queensland Museum

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Care of Newly Hatched Childrens Pythons Liasis maculosus

Tim Hawkes and Michael O'Brien, C/- Wildworld, Cook Hwy., Palm Cove, 4879.

When rearing any juvenile pythons, it is important to set up each snake in individual containers. This prevents intimidation from more pugnacious cage mates and makes feeding easier to manage. Chinese take-away or self sealing tupperware containers are ideal for caging. Holes drilled into the lid provide ventilation.

Small cardboard boxes, pieces of curved bark or sections of hollow log make perfect retreats to escape any disturbance and to give the snake a sense of security. Gravel, paper towel or newspaper can be used to line the bottom of the container. These sub-strates are easy to replace and makes cleaning simple.

Water should be supplied at all times in small weighted bowls to prevent the occupant from tipping and wetting cage contents. Juvenile snakes are extremely susceptible to extreme heat and exposure for extended periods of time can be fatal. Always make sure that you keep your snake in a well ventilated room.

Feeding: Approximately 10 to 15 days after hatching, the juvenile snakes will shed their first skin. This is the best time to try to feed the hatchlings. Small new born mice left in the container overnight is enough to initiate a first feeding, though if this meal is refused, try every third day. If the snake continues to refuse mice, it may be necessary to try another food source. Skinks and geckos are readily consumed by wild snakes and make good appetisers. Try to avoid using whole lizards as it is unnecessary and they sometimes carry internal parasites which could infect the snake if consumed.

Using lizard tails prevents killing the owner and as they grow back are a renewable source. With a pair of forceps introduce a portion of a skink's or gecko's tail to the snake to taste. If this is taken, slowly follow this with a baby mouse while the mouth is still open swallowing the lizard tail. Eventually, smearing the broken portion of lizard tail over the head of the baby mouse will initiate the snake to feed on scented mice. Over a period of time, unscented mice will be gradually accepted.

If your snake is a regular feeder and refuses a meal, don't be alarmed. This could be due to a number of reasons. When a snake prepares to shed its skin, its eyes will cloud over. In most cases, this will cause a snake to refuse one or two meals. Cold weather may also cause a snake not to eat. Two moderate sized meals a week is

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ample to sustain a healthy snake, though if food sources run low one mouse a week is also satisfactory.

It is important to keep handling to a minimum until the snake becomes a regular and confident feeder. With proper care and regular feeding, these snakes will mature and be ready to reproduce within 3 to 5 years.

For any further information, please contact the authors at Wildworld, (070) 553669.

Observation Of Submerged Feeding By A Captive Water Python

Liasis fuscus

Wayne Lewis, 12 Raglan St. Edmonton

Upon normal feeding of a half grown mouse to my juvenile Water Python Liasis fuscus I observed behaviour that I found quite interesting. Upon introduction of the mouse, the snake struck twice unsuccessfully. It then waited until the mouse was perched on top of the water container, when it again struck and constricted the mouse. As it struck the force pushed the mouse into the water bowl. Once dead the snake ingested the mouse while totally submerged. At no time was any portion of the snake's head above water. Ingestion was unusually rapid, probably due to the extra lubrication afforded by the prey item being wet. This first feeding took place on the 20/5/93 and all subsequent feedings except for one have taken place in this way. In my view this behaviour points to an inherent behavioural trait suited to the snakes natural environment. As this specimen is captive bred other herpetologists may have experienced the same behaviour in their own charges. But this was the first time that I had seen this behaviour.

Goanna alert for campers

Sunday Mail 28/3/93
CAMPERS at Cooloola National Park are not there they've been walking all this Easter will have to watch out for over the place looking for food," Mr large goannas which have been wand- Miley said. "The average large ones- ering into tents searching for food are close to a metre."
Cooloola ranger Damian Miley said "Mr Miley advised campers to keep the goannas had become a problem their food inside secure tents and not because of people feeding them and to leave food around the campsite. attracting them to campsites, and be- To find out which national parks cause of a good breeding season. have space for Easter and school holi- days call the Naturally Queensland "They've been coming into camps when people are there, and when they Centre on 227-8186."

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Reptiles Of The Dry Forest Habitats Of The Mareeba/Mt.Carbine Region.

Michael Anthony, P.O.Box 523, Manunda, Qld. 4870

The Mareeba/Mt.Carbine area consists of dry forest habitats resulting from the varying rainshadow effects of the Kuranda and McAllister Ranges and the Carbine Tablelands. There are numerous areas of granite boulders and outcrops in the area often incorporating rocky creeks and falls, with some swampy areas and riverine habitat. Corridors of dry habitat extend to the coast in some areas and separate patches of rainforest habitat. Also corridors of moist forest may extend along watercourses and gullies through dry forest habitats where species such as the Northern Tree Snake Dendrelaphis calligaster (usually found in rainforest and its edges) may be found in generally dry areas. A few species common to drier habitats inland e.g. the Curl snake Suta suta may be found in this area and extend to the coast along dry corridors. The north-eastern region is in fact a mixture of different faunas; some of the drier inland species; animals found along the east coast of Australia extend north to this area and beyond to the Cooktown area e.g. the Water dragon Physignathus lesueurii; northern Australian "Torresian" fauna e.g. the Black Whip Snake Demansia atra and further north on Cape York the influence of New Guinea fauna e.g. the Green Python Chondrocython viridis. There are also a number of species endemic to this region. The biogeography of Australian reptiles is of course more complex than this; more detailed reading on the subject can be found in the References.

This article is the result of numerous field trips to the area dating back to January, 1983, but mostly concentrated in the last two years, including two CYHS field trips. Thanks are due to Tim Hawkes, Lyall Naylor, Michael O'Brien and Nick Oakes for accompaniment on field work and/or personal observations of species in the area.

Chelidae

Two specimens of the Saw-shelled turtle Elseya latisternum were sighted in pools of a small rocky creek near Mt.Carbine and others of this species have been seen in the Mitchell river. This species also occurs in lakes and creeks in rainforest.

Agamidae

The Frilled lizard Chlamydosaurus kingii is most often seen on the ground in the late dry/early wet season during the "build up" on hot overcast days, particularly after rain. At other times it may be seen on the trunks of trees. There are 2 species of Two-lined dragon found in this area Diporiphora australis and D.bilineata. D.australis is

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found active around large granite outcrops either on grassy slopes or along rocky ridges and may be told apart from the other species by the presence of gular (neck) scapular (above the shoulder) and spiny costauricular (behind the ear) folds of skin. D. bilineata is found in a range of habitats in dry forest and low rock outcrops where it may be seen active or perched on vantage points such as tree stumps or termite mounds, often in the heat of the day. The Water dragon Physignathus lesueurii is an inhabitant of creeks and lakesides both in dry country and in rainforest, particularly at higher altitude. It may be found along both rocky and forest creeks.

Gekkonidae

There are three species of gecko commonly found in this area. Bynoes gecko Heteronotia binoei is found in a range of terrestrial habitats usually under ground debris in open forest and under rocks in low granite outcrops. This species is often the only reptile found in severely degraded habitats. Gravid females with 2 eggs have been found in January. The common arboreal gecko of this area is the Dtella Gehyra dubia most often found under the bark of Eucalypts particularly near watercourses, but also in most forest habitats as well as under rocks and exfoliations on rock outcrops. Another gecko of this area Coppers Velvet gecko Oedura coppersi is more restricted to rock outcrops where it may be found under rocks and exfoliations and in crevices, but may also be found under bark of trees near rock outcrops or on rocky hillsides. It also occurs in dry coastal areas. A specimen of the Ring-tailed gecko Cvrtodactylus louisianensis has been recorded from the area, found crossing the road at night near Mt. Molloy; another was found in a rock crevice. This gecko usually inhabits rock outcrops but there is also a rainforest form. This large, spectacular gecko is known to inhabit houses in the Cooktown area. One individual of the Fat-tailed gecko Diolodactylus conspicillatus is recorded from Mareeba area, another from Mt. Carbine under a piece of canvas. Another gecko recorded from the area is the Northern Velvet gecko Oedura castelnaui, an inhabitant of trees where it may be located under bark. The Zigzag Velvet gecko Oedura rhombifer has been found in dead hollows on trees and under bark near Mt. Carbine.

Pygooodidae

Burtons Legless lizard Lialis burtonis is a commonly seen reptile in the area, usually on the road at night. One animal was found under a rock on a granite outcrop. There are two colour forms (as is the case over much of the animals range) a grey and a reddish brown form; with or without a white stripe along the upper lip extending back past the ear opening. Delma tincta is commonly found in dry woodland near Mareeba.

Scincidae

There are 7, possibly 8 species of Four-fingered or Rainbow skink to be found in this area. One of the most common species, at least in woodland is Carlia storri, which is found in ground litter in forest and around low rock outcrops. It is usually unmarked or with faint dorsolateral and/or midlateral lines, and has two keels on its dorsal (back) scales with a circular to vertically elongate ear opening surrounded by pointed ear lobules. Another common skink found in similar habitats is Carlia munda, identified by its strongly marked white mid lateral line beginning on the upper lip, extending back to above the ear opening and continuing from below the ear to about halfway down the body. This skink has smooth to feebly keeled dorsal scales and a horizontally elongate ear opening with only one or two anterior lobules. Carlia vivax, again found in similar habitat, differs from C.storri by only having one or two ear lobules. Males in breeding colouration may be a bright pink colour. Another small Four-fingered skink found in woodland is believed to be Carlia prava, which is not mentioned in Cogger, 1992, but appears in Wilson and Knowles, 1988 as a subspecies of C.schmeltzii which I have found in the Herberton area. Three species of Four-fingered skink are inhabitants of rocky areas. The most specialised of these is C.mundivensis a large, blotched Carlia which is found only around rocks on rock outcrops. C.rostralis inhabits rock outcrops and their margins and in woodland. In the area around Davies Creek falls adult individuals are commonly found around rocks and litter lower down near the creek. This species is also large with smooth or feebly keeled dorsal scales and pointed ear lobules. Breeding males may be brightly coloured with strong white dorsolateral and midlateral stripes along the front part of the body and a reddish orange flush along the sides. The upper part of the side of the head may be black, the lower part bright yellow. Perhaps the most brightly coloured of these skinks is the Jewelled Rainbow skink C.jarnoldae, the breeding males with white stripes on a black background on the back, the black upper lateral area enclosing a number of blue spots and a red flush on the lower lateral area. These animals have 3 keels on their dorsal scales and a small ear opening with a single lobule. Females have a strong white midlateral stripe on a black background and usually some indication of a dorsolateral stripe: the dorsum is coppery brown. The other species found here is C.fusca another larger species with smooth to feebly keeled scales found in a range of habitats, differing from similar species in lacking a midlateral stripe. Two species of Snake-eyed or Two-lined skinks are known to occur in the area. Cryptoblepharus virgatus has two well defined straight-edged lines on either side of its back whereas in C.pladiocephalus the lines are ragged edged. Both are arboreal skinks usually sighted on the trunks of trees and occasionally under ground litter. C.virgatus has been sighted on rock outcrops. The Striped skink Otanotus robustus is a large, widespread species found in a wide variety of habitats. It has been recorded from a granite outcrop near Mt. Carbine, under a rock on a ridge, under which it had dug a shallow burrow. The Cooper-tailed skink C.taeniolatus is also commonly found under rocks on rock outcrops in this area, also digging a shallow burrow beneath its rock. These animals are found in similar situations along eastern Australia to

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north of Cooktown. The following two species also range along eastern parts of Australia. The Major skink Egernia frerei is a large terrestrial lizard inhabiting protected habitats particularly rocky areas near creeks where it may shelter under rocks, fallen timber or tree roots. It is also found in rainforest and under rocks around rock outcrops. One of the more common species found near rocky or vegetated creeks is the Barred skink Eulamorus tenuis often seen active in the late afternoon particularly around rocks, which hold their heat. These are also found under bark of Eucalypts and Melaleucas and in rock crevices. A small, fossorial species of skink Glaphyromorphus cracens is recorded from the area: it was found in a torpid condition under a rock on a ridge near a creek. These animals are restricted to drier habitats in north-east Queensland. Lygisaurus foliorum is a very small, shiny four fingered skink formerly included in the genus Carlia. These animals are commonly found active in leaf litter and under ground debris often late in the day (6.15 p.m. in one case). The distinctive Fire-tailed skink Morathia taeniopleura may be found in ground litter in woodland and also active on rock outcrops.

Varanidae

A variant of the Freckled monitor Varanus tristis occurs in granite outcrops in this area, as well as those further north to the sandstones in the Laura area. More typical V. tristis also occur in the area - more field work is required to examine the two monitors. The Lace monitor V. varius which occurs in eastern Australia to north of Cooktown is also recorded from the area, an adult specimen was found dead on the road. The Lace monitor Varanus varius is recorded from a specimen found in the stomach of a Black-headed python.

Snakes

Boidae

The Black-headed python Aspidites melanocephalus was once common in the Mt. Carbine area but is now rarely seen, probably due to the large number of animals killed on the roads. It also occurs in dry coastal areas. The Childrens python Liasis stimsoni is the most commonly seen Boid in the area, often seen on roads at night, under ground debris and around rock outcrops. A very similar species L. maculosus also occurs here. The Scrub python Morelia amethystina a species found only on the northeast coast of Queensland is better known as a rainforest inhabitant, however one specimen is recorded from woodland near Mt. Molloy. Commonly seen on roads at night in a variety of habitats is the Carpet python Morelia spilota which ranges across northern, eastern and southern Australia.

Colubridae

The most commonly seen nocturnal snake is the Brown Tree snake Boiga irregularis, which is usually strongly banded in this area, unlike the

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coastal rainforest forms which are brown with indistinct patterning. A specimen was found dead on the road near Mt. Molloy with 4 large birds eggs in its stomach. The diurnal Common Tree snake Dendrelaphis punctulatus also occurs commonly here in both a green and occasionally a blue colour form. Macleaves Water snake Ephedris polylopi is recorded from a creek near Mt. Carbine where it was found hunting a juvenile Saw-shelled turtle E. latisternum in a shallow pond. This snake is entirely aquatic and may be active both by night or day. A specimen of the Slaty-grey snake Stegonotus cucullatus was found on the road at night in woodland between Mt. Molloy and Mt. Carbine. This snake is usually found near watercourses and more commonly in wet forest. The Keelback Tropidonophis mairii is commonly found near watercourses and swamps in the area, usually active in the early evening, sometimes in late afternoon and early morning. This species is variable in colour, usually some shade of green. A specimen at Mt. Carbine was yellow in colour, a specimen from Cooktown was black with a yellow face, and an animal from Mt. Garnet reddish; a specimen found dead on the road near Mareeba had a partly digested frog Litoria nasuta in its stomach.

Elapidae

Northern Death Adders Acanthopsis praelongus have been sighted in the dry rocky hills west of Mt. Carbine active on the road late at night in October. One specimen was tinged with grey, the other reddish brown, about 1 kilometre apart. Another specimen is recorded from near Mt. Molloy. A road killed Papuan Whip snake Demansia papuensis is recorded from between Mt. Molloy and Mt. Carbine. The Black Whip snake Demansia atra is also recorded from near the Mary river. The Collared Whip snake Demansia torquata is common to rock outcrops in the area, found active around outcrops (where it may form winter congregations) and under rocks. The Taipan Oxyuranus scutellatus is known from the area, a specimen being seen basking on Black Mountain road at 11.00 a.m. where it passes through a patch of dry forest; it also occurs in rainforest. The King Brown Psuedochis australis is recorded from a road killed specimen near Mt. Molloy. The Common Brown snake Psuedonaja textilis has been sighted in the Mareeba area. The Carpentaria Whip snake Rhinoclocephalus boschmai is reasonably common to the area, specimens being found under ground debris and active on the roads at night. One individual of the Black-striped snake R. nigrostriatus was found crossing the road near Mt. Molloy on a rainy night and another found under a pile of corrugated iron near the Mary river. Specimens of the Curl Snake Suta suta have been found on the road near Mareeba; this animal is commonly found in dry inland areas of Australia and its range extends to the coast via areas of dry habitat in north-eastern Queensland. A specimen of the Bandy-Bandy Vermicella annulata has also been found in the area, again crossing the road at night near Mt. Carbine.

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Substitution Feeding In A Captive Red-Bellied Black Snake

Pseudechis porphyriacus

Wayne Lewis, 12 Raglan St. Edmonton.

Due to a common problem, lack of pink mice, I decided to try a substitute. I had read of various herpetologists using fish as a substitute so I decided to give it a try. Unfortunately this met with no success at all. Steak strips on the other hand, worked quite well. Upon placing a 50 mm x 15 mm strip in the cage the young snake immediately attempted to swallow it. After several attempts it was successful. One thing I learnt was that this type of food must be given to the reptile inside a clean tupperware type container to alleviate cage substrate adhering to the steak. This could pose problems later on e.g. intestinal problems.

Another problem is that because the steak is very sticky the snake has difficulty in swallowing it. I overcame this by spraying the meal with water from an atomizer while the snake was swallowing it. I also tried this type of food with my juvenile Spotted Python Liasis maculosus. After initial interest the snake refused the steak repeatedly.

I will be using this substitute food in conjunction with vitamin and mineral supplements in the future when mice are unavailable.

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A Report of a Communal Gathering Of Gravid Boyd's Rainforest

Dragons *Hypsilurus boydii*

Tim Hawkes, C/- Wildword, Cook Highway. Palm Cove, 4879.

On the night of the 27/12/92, as part of a reptile survey of the Carbine Tablelands, north of Julatten, north Queensland, a communal gathering of gravid Boyd's Rainforest Dragons *Hypsilurus boydii* were located along a short stretch of the main track on an overcast, wet, cool night. A total of six animals were found around 11.30pm asleep, while spotlighting along the edge of the track. The immediate vegetation is a typical highland notophyll vine forest sited at an elevation of 900 metres. An additional specimen was found the following morning in the same vicinity as the previous animals and another located active on the road at 10.30am approximately 5 kms south of the previous site.

All dragons were located within metres of the roadside verge or nearby roadside clearings. Sampling of the rainforest in the immediate vicinity away from the road revealed no other dragons. Seven of the eight dragons were situated on vertical perches at heights 10 cm to 250 cm from the ground. Perch diameters varied from a 2 cm sapling to a 15 cm tree trunk. The presence of eggs in all individuals was clearly evident from the multiple bulging in the abdomen while perched upright. It was decided to confirm gravidity and sex of each animal by gently palpating the abdomen for eggs and the base of the tail for sexual organs. Snout-vent (S.V.L) and tail lengths (T.L.) were also recorded. It was estimated that the majority of eggs palpated were already in an advanced stage of development due to their large size and hardness. The measurements of the largest and smallest dragons were as follows:

Largest S.V.L. 12 cm, T.L. 33 cm
Smallest S.V.L. 15 cm, T.L. 28 cm.

Diggings or scratchings were searched for, though due to three days of rain, any evidence of any scraped depressions would have been unidentifiable.

Similar observations have been documented for gravid Southern Angler-headed Dragons *Hypsilurus spinipes* where on two separate occasions a total of 8 and 17 animals were located along forestry roads, roadside verges and clearings (Shea, 1991).

As both species rarely bask in sunlight, it is likely that these marginal areas are chosen for thermoregulation, although gravid *Hypsilurus spinipes* may bask for short periods (Manning, in press) to possibly promote ultra-violet absorption and egg development.

articles

Hypsilurus spinipes will also migrate large distances in search of appropriate egg deposition sites (Manning, in press). These observations indicate that Hypsilurus boydii appear to employ the same strategy as the lack of available egg laying sites within the rainforest would necessitate the need to migrate to sun exposed sites along roadside verges and associated clearings necessary for egg incubation. In closed forests these sites are restricted, and it is not unusual for a number of gravid animals to utilise the one site for oviposition (Ehmann 1991), this behaviour being displayed by H. boydii in this account.

Acknowledgements

I would like to extend my gratitude to John Vescio from the Atherton office of the Forestry Commission for his assistance with entry permits to undertake herpetological field work within this area. I would also like to thank Michael Anthony for assistance with these observations and his continued encouragement.

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Snake snacks on family pet

A SCRUB python has been released into the wild after he swallowed a family pet in Lake Placid last week.

Marlin Coast snake catcher Rolf Aebersold said a three-year-old cat was devoured in the backyard of a Barron Gorge Rd home late last week.

He said the distressed owner of the cat wanted the python cut open so her pet could be given a proper burial.

"But of course you couldn't do that," he said.

The Lake Placid woman called Smithfield police after she discovered the 3.5m python had taken her cat.

Mr Aebersold was then called to the house to release the reptile safely into the wild.

"He'll be quite happy for the next fortnight," he said.

The Marlin Coast man has been catching snakes in the area for the past seven years.

During that time he has caught six taipans, 11 death adders, three brown snakes, two black

snakes and about 15 whipsnakes.

However, most household intruders were harmless.

The most common is the brown tree snake followed by the scrub python.

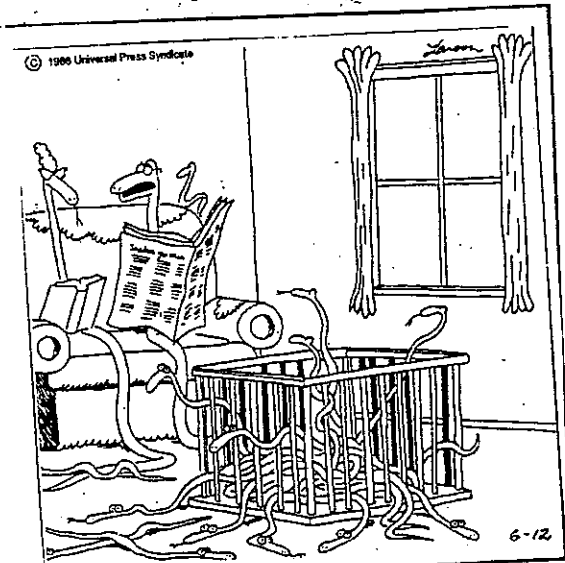
"Most call at the beginning and during summer when snakes become more active," he said.

"For those who want to discourage snakes from visiting, remove logs, loose rocks and sheets of iron around homes and keep grass short.

However, most people were happy to come across a snake in their yards.

"It promises a free rodent disposal service because many snakes eat rats and mice," Mr Aebersold said.

★ Rolf Aebersold is used to returning greedy and inquisitive reptiles to the wild. This scrub python snacked on a Caravonica resident's cherished cat last week. Picture: Alistair Brightman.



"I tell you, a crib is just plain worthless - what we need around here is a good cardboard box."



Earth Watch

With Jon Metcalfe

LAST week I began to consider those amazing creatures, the frogs. I got sidetracked, however, on our most infamous hopping import the cane toad. With that over I can begin again. My thanks to frog lovers Mike Trenary and Tony Blewer for help with the following.

There are about 200 species of frogs in Australia. Some jump, some climb, some burrow and some even glide. These variations are responses to a wide range of conditions. Frogs are found from the deserts of Central Australia to lush rainforests.

A common feature of male frogs is their singing. This signals a good breeding spot. Also, a frog chorus is a great defence mechanism — if one frog stops, all will stop.

Frogs are also good at throwing their voices. Thus, the best method of locating one at night is for two separate people to shine torches to where they think the sound is. Where the beams intersect, that's where the frog is likely to be.

But frogs are disappearing all over the world. In temperate industrialised regions this can be explained because of pollution and poisons. These easily penetrate the permeable skins of frogs causing death or massive mutations.

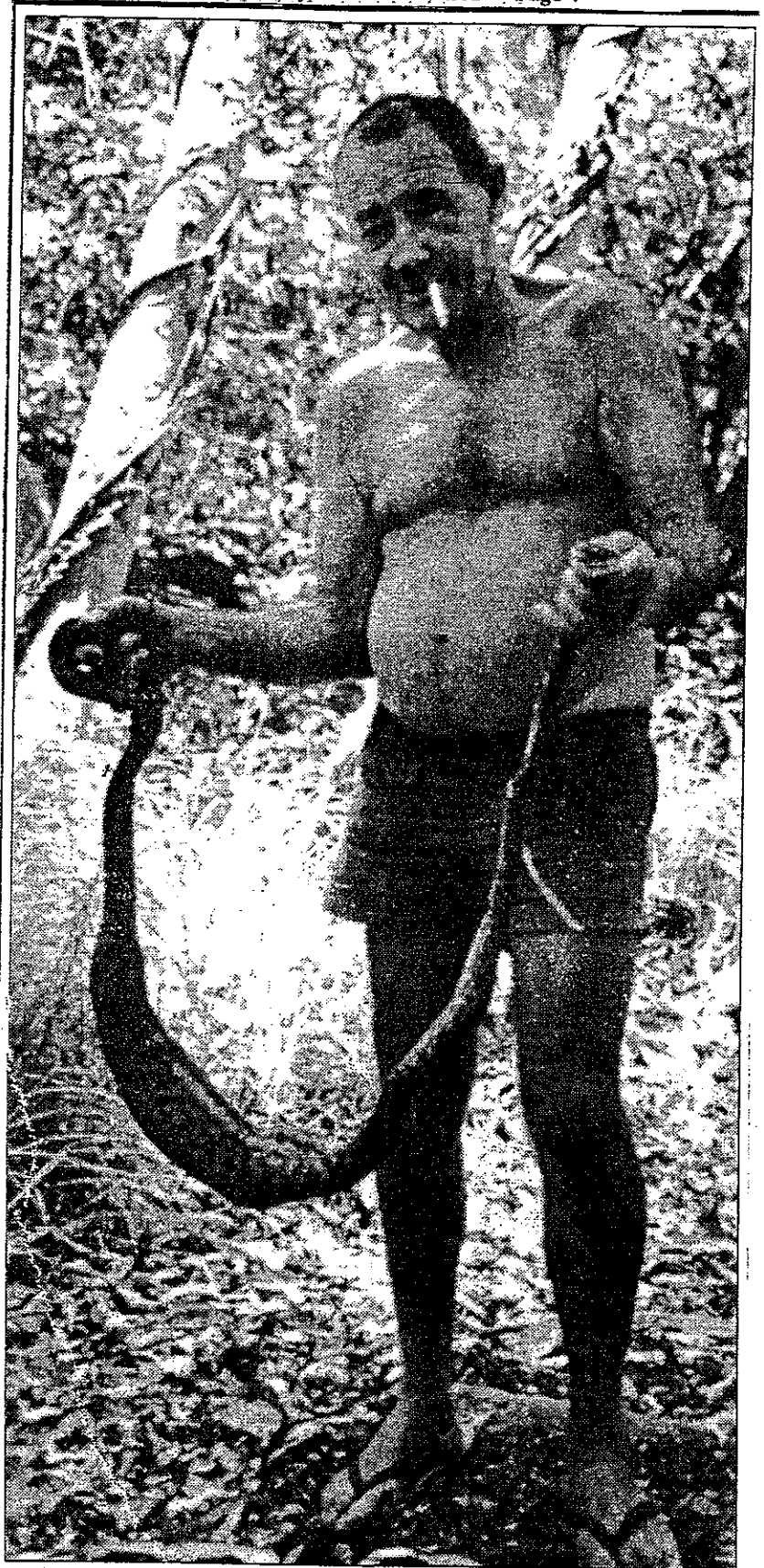
But frogs are also mysteriously disappearing in the world's tropical areas. And in many places, like Queensland, there hasn't been much disturbance to their core habitat.

In the early '80s, a wave of unexplained disappearance started in southern Queensland. It reached Central Queensland and has now spread up across the Tableland to the Daintree. In the wet tropics area alone, five frog species are in drastic decline with another one species no longer able to be located.

The ecological consequences are severe. When the nutrient rich waste material from the forest floor is flushed into streams, frogs and tadpoles feed on this and thus help to retain it on site. Frogs are also the food source of many higher species.

Cairns city is fortunate that one really good spot remains to hear thousands of frogs in action. A huge pond located in the cemetery reserve contains the city's greatest diversity of frogs.

The Parramatta Park Primary School has printed a guide for the identification of seven local frogs. For instance, there's the brown striped frog. Its call is a loud "plonk", which sounds like a hammer hitting a piece of steel. The northern banjo frog calls with a "bonk", like a banjo string being plucked.



Bill snags a sleeping python

THIS python's morning nap was rudely interrupted when it was found curled up under a caravan at the Ellis Beach Caravan Park.

It had just eaten a kitten and settled down to digest its meal. Pythons frequently prey on pets such as puppies and kittens, as well as caged birds left outside.

Caravan park resident Bill Hogan — above — removed the

snake from under the caravan and returned it to the bush to complete digesting its meal.

Pythons should be handled with care. Although not poisonous, they can deliver a nasty bite and experts such as the National Parks and Wildlife Service should be called on in to remove them if necessary. Picture: NIKI HARRISON.



MEMBERSHIP FORM

The intention of the society is to provide a forum for the dissemination of information concerning the conservation and keeping of Herpetofauna in Far North Queensland by;

- holding regular meetings featuring guest speakers on a range of Herpetological subjects
- organising regular field trips
- discussing a set topic (eg. species or genera) with input from members
- publication of a twice yearly journal (ie. Chondro) to keep members in touch with the society's activities and latest developments in the world of Herpetology.

MEMBERSHIP FEES; Includes two editions of "Chondro".

\$20.00 per member

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