

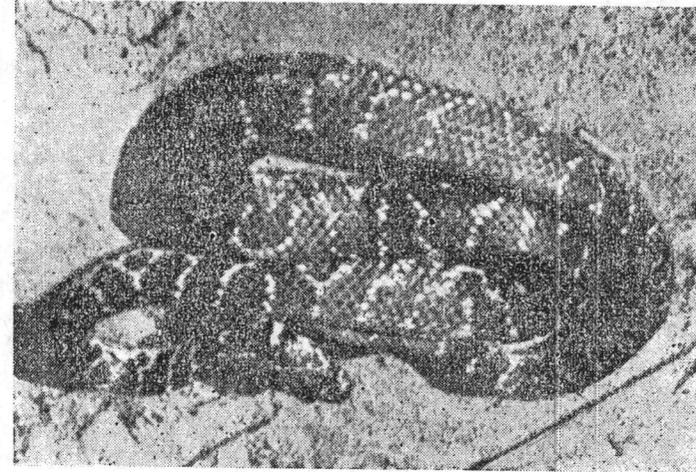
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The Broad Headed Snake.
Hoplocephalus Bungaroides (Boie)

Marine Coral Spider

Desis crosslandi Pocock

By ALFRED A. READ, Cairns, President North Queensland Naturalists' Club

If there is anything which could hold a promise of greater interest to an amateur naturalist than a new stretch of inland bush country or a fresh region along the tropical coastal belt, perhaps it is to find oneself on a coral island with fourteen days of unrestricted joy ahead during a season of perfect tides and where one can wander over the exposed coral reef for from five to eight hours each day. Such a prospect presented itself to me on the morning of 13th July, 1947.

With my wife and son, Hugh, I arrived at our island, Low Island by launch from Port Douglas at about 9.30 a.m. and before midday had our camp nicely fixed and snugged down, partaken of a light luncheon and set out on the ebbing tide with our collecting buckets, small specimen bottles, reef hooks (for lifting rocks), and some sandwiches and fruit in our pockets.

My main interest was the crus-

tacean life which abounds everywhere on the reefs from the little chaps smaller than a pea to the big mud crab, *Scilla serrata* as large as a soup plate.

Before leaving Cairns, I had mentioned to Dr. H. Flecker my intention to make this trip, and he requested me to keep a look out for a marine spider, which he reported he had found hundreds of yards from the shore which had emerged from broken fragments of coral and had clambered up, dry (!!!) over his clothing, during a previous trip when he visited the locality at a particularly low tide a year earlier.

I was interested, but felt rather sceptical about a spider which could live out on the reef and under water, but politeness forbade me expressing such a feeling, but had it been anyone else except the doctor who might mention it, I may not have thought any more about the mat-

ter, but my curiosity kept mounting all the time.

Our first and second days on the reef were mainly taken up in general exploration and the collection of specimens which we could bring back to camp for further study in the evenings.

It was on the third day that we decided to keep a really serious lookout for this spider, for by that time we felt we could get down to more specialised observations. Young Hugh saw the first one; he gave a call but by the time I had reached him, the little chap had darted into a crevice in the coral. Not long afterward, my wife, who was looking for shells by turning over various old debris with her reef hook, happened to turn over a complete old dead horseshoe clam (*Hippopus hippopus*), and as the two halves fell apart, there we saw an adult spider and a whole host of small ones of two distinct sizes. During the next few moments of hustle and bustle, I managed to secure the adult and smaller ones of two different sizes into test tubes. Needless to say, my scepticism had completely vanished.

Through keeping more or less a look out for them, we saw quite a number during the remainder of our stay and in all I managed to capture five adults to bring back. Subsequently we learnt that it belonged to the genus *Desis*, and had been determined as *Desis crosslandi*. Dr. Yonge's expedition in 1931 to Low Island had found some specimens, and six species are known in Australia. It appears to have been originally discovered in Zanzibar in 1903. They are found in other places along the Eastern Australian coast, and I have since found them at Double Island as well as at Green Island.

Although unknown to us, the little arachnid was not new, it was quite interesting making further observations. On one occasion, during a very low tide, I had noticed several spiders on a certain part of the reef, which was not uncovered again for five days, and immediately it was I hastened to look around to ascertain if they were still there, and sure enough they were! It was perhaps foolish of me, for where I had found them in the

first place they would be submerged for days, perhaps weeks at a time, but still one must put this down to my amateurish doubts, for wanting to confirm these facts. On another occasion when the tide came in during the afternoon and the water was very calm, I obtained permission to take the island dinghy to row over the island patch to see if any of the spiders were running over the surface, but there was no sign of any.

They build a fine tough little web, for they belong to the family of funnel-webbed spiders, in the usual manner of these arachnids. Not, I feel sure for snaring food, for since that time I have watched them and, one little chap in particular, darting in and out of the rocks in a very lively manner pounced on a small mantis shrimp, *Squilla nefadia*, which was at least half an inch longer than itself and disappeared with it into a hole in the rock.

One of the specimens which I kept in a test tube which I had half filled with sea water and into which I also placed a piece of dead coral, was still alive eight weeks afterwards. At the top of the tube immediately beneath the cork, in which a small V shaped window had been cut to allow for the entry of air, it built a web, and thinking to help with its food supply, I inserted several fruit flies which I had caught, placing one in the V shaped opening of the cork and pushing it so that it slightly protruded into the tube. Later I noticed the spider approach the fly, appearing to examine it, and to my surprise pushed it back out of the opening altogether. Next, I pushed another fly right into the test tube, when it fell on to and rolled off the web into the water below. The spider never attempted to bother about the fly after this. On this occasion I was interested to note that the web seemed to have not the slightest semblance of stickiness about it, for the fly simply rolled off it with ease. Another point of interest was that they always appeared singly, although I have seen as many as five spiders on the one large "nigger head" and all very active and busy, not seeming to waste one moment of the dry spell between the tides.

Taking things as a whole, although we were not discovering anything new to science, these little spiders were new to us, and even now we look back to

our stay on Low Island with the pleasurable feeling of having added another little story of knowledge of the creatures of the Great Barrier Reef.

Notes from Mt. St. John Sanctuary

By NANCY HOPKINS, Townsville.

The crocodiles at Mt. St. John are building a nest. This, in Mr. Robinson's experience, always portends early rain. Nowhere will it be more welcome than at the Sanctuary, as the big lagoons have shrunk to mere waterholes, which, however, still harbour thousands of ducks.

Long after the rarer waders and waterfowl have left the Common with the dwindling of its lagoons, they will be found on the lakes of Mt. St. John, which are perhaps most interesting during the winter months when the bird life becomes more concentrated. A few species are not seen elsewhere in the district. This year I noticed especially the Coot (*Fulica atra*) — not to be confused with the Eastern Swamp-hen or "Bald Coot" (*Porphyrio melanotus*) a commoner and more showy bird. I have not seen the Coot on the Common. In other years there have been a few at the Sanctuary, this year they were there in hundreds. The Black-tailed Native-hen (*Tribonyx ventralis*) was a new find, but I have no doubt that many rail-like birds escape observation.

The White-quilled Pigmy-goose (*Nettapus coromandelianus*), was still present, during the winter, also, I think, the Green Pigmy-goose (*N. pulchellus*), which was more difficult to identify far out in the lake. Both species were on the Common during the summer rains, but had moved on by the end of January (1951), possibly because they were subject to disturbances.

Mr. Robinson tells me that during the duck-shooting season flocks of Pink-eared Ducks or Widgeon (*Malacorynchus membranaceus*), fly in to the Sanctuary, evidently coming from the Cromarty district. As they keep to the middle of the lake they are not easily seen. Old hands say that these ducks and the Pigmy-geese were much more plentiful in the past.

On the other hand, the Glossy

Ibis (*Plegadis falcinellus*), a rare bird here a few years ago, has increased, and this year there was a flock of about one hundred on the Common until July, and many at Mt. St. John at a much later period. The lovely little Lotus-bird (*Irediparra gallinacea*), which has reached large numbers in recent years and has been breeding in every swamp, gradually disappeared as the swamps dried, migrating, Mr. Robinson believes, to permanent water in the basalt country. Whereas the Glossy Ibis is a nomad, the Lotus-bird stays with us when the seasons permit, and this is the first time for years that it has been entirely absent.

All of the birds already mentioned have now departed, as also have the Black Swan (*Chenopsis atrata*), and the Pied Goose, (*Anseranas semipalmata*). Both of these breed at Mt. St. John. I counted nearly a hundred swans on the big lake one day in July, but the geese, as usual, were there in thousands. The geese feed on Panicum grass which has been specially planted for them around the lagoons.

The pelicans were missing today, the cormorants and waders were but a remnant of the old flocks, and I noticed no Black Ducks — the lagoons swarmed with young black ducks in June — but the Whistling Ducks still gather round the pools in thousands. "Many thousands" was the only estimate I could reach. They appeared to be all of the one species, the Plumed Tree-duck (*Dendrocygna eytoni*). The Whistling Tree-duck (*D. arcuata*), is never as numerous as the Plumed, and I doubt whether it ever forms part of the big flocks which muster on the banks of the lagoons, being usually scattered through the swamps in small groups. While *D. arcuata* is darker and more vividly colored than *D. eytoni*, and less conspicuously plumed, a simpler means of identification is the colour of the

legs, which are black in the former and red in the latter. One or two "black-legs" were flying about the pools in the zoo to-day. Only one Grey Teal (*Querquedula gibberifrons*), showed itself, but some distance away a tiny army of Maned Geese or Wood-ducks (*Chenonetta jubata*), marched over the plain.

Among the ducks at the water's edge were small numbers of spoonbills, ibis, stilts and cormorants. A small flock of swamp-hens roamed here and there, and were going to roost in the bamboos as I left. Even in its present dry condition the Sanctuary is alive with interest, for it is still an oasis, and a safe haven for all types of bird.

In a patch of reeds in the Zoo portion, a small unidentified bird played hide-and-seek with me, reminding me that it was here that I saw and heard for the only time that lovely songster, the Australian Reed-warbler (*Aerocephalus australis*), a migrant and probably only a passing visitor.

Another rare visitor which I have seen only at Mt. St. John, is the Red-kneed Dotterel (*Erythrogonys cinctus*), a bird not often seen in coastal areas. There were two, and I recall that they were chasing the Black-fronted Dotterels (*Charadrius melanops*), from their rightful territory along the margin of what is now the big crocodile pool. To-day the latter were in unchallenged possession, foraging calmly a few feet from a crocodile snout.

Further up the bank there is a pile of grass, which the crocodiles have pulled and stacked in

readiness for nest-making. In a wire-covered enclosure some distance away are last year's baby crocodiles, eight months old and about sixteen inches long. Six remain out of a clutch of nearly forty which hatched out late in April. That is probably much higher than the natural rate of survival. To begin with they were protected at birth from the old male crocodile, who at the first sound of hatching took up his position beside the blockaded nest in expectation of a meal. Elsewhere there is one young crocodile, rather less than three feet long, which is a survivor from the previous year's clutch, not necessarily the sole survivor, as many are sent away.

Not far away, the Brush Turkeys (*Alectura lathamii*), have built a mound which almost fills their enclosure. It has been there for months at least, but I do not know whether any eggs have been laid. As the mound appears to contain more earth than vegetable matter, they probably would not hatch in any case.

Normally all water from the zoo is pumped from the lagoons, but after eleven months drought this is not considered up to standard, and drinking water for the zoo animals is now being carted. How cheering then is the crocodile prophecy. Very soon, we hope, the lagoons will be full again, and an endless joy to bird-lovers.

N.B. This was written on 6th January. The rain fell heavily from the 15th January onward and thus the drought was broken as prophesied.

Book Review

26. TRAVELS IN NORTH QUEENSLAND, by Jean Devanny, 251 pp., 25 full page illustrations, Jarrolds Publisher (London) Ltd. The authoress divides the book into two parts. Part I deals exclusively with the Great Barrier Reef as she has experienced it at Green Island and Low and Woody Islands. She is very much interested in the fauna in particular and describes with much detail all the various items, and has taken some trouble to ascertain the identities of the objects

which she describes. The difficulties under which photographers, particularly cinematographers, contend are set out, and the most interesting features and creatures described in their natural surroundings. She has a humour and entertaining style all her own, and the reader cannot help finding much of exceptional interest. Most of the objects can be readily identified from her descriptions, and the biological names included do not detract from its value and interest. Numerous fine photo-

graphs add greatly to the value of the book. The second part of the book deals mostly with the inland, the west and the Gulf country, describing the pastoral

country and industries. However, she is not as competent at dealing with the natural history of this area as she is with the Great Barrier Reef.

North Queensland Naturalists' Club 1950-1951 Annual Report

By ALFRED A. READ, President.

I have much pleasure in presenting this nineteenth annual report of the North Queensland Naturalists' Club for the year 1950-51.

At the beginning of our year, we all had very grave misgivings over the health of the Club's founder, Dr. H. Flecker, and for a time those misgivings verged almost to despair, but I am sure we all feel that we have a lot to be thankful for that he has been spared to be with us on the occasion of the 1951 annual meeting.

Throughout the doctor's illness, the club missed one of its quarterly publications, that was for the Christmas or December, issue 1950. I found it necessary to edit the March issue myself and then Dr. Flecker felt well enough to carry on. Since then that part of the club's activity has been handled by him as usual.

As regards the ordinary business of the club, we started the year with a full complement of officers and although we were very sorry to lose two very active members in the persons of Messrs H. Burns and J. Toogood, others stepped forward to record the good will and harmonious feelings which have existed with the committee through the year.

We started the social side of our activities with a Christmas party, not with the idea of just a convivial evening but with two main objects in view, one as a thanksgiving for the improvement in health of Dr. Flecker and the other to do honour in some small way to our Honorary Secretary, Mr. J. Wyer. For eighteen months these two gentlemen carried on without stint in their efforts to make the Club as widely known as it is to-day and we felt that we all really appreciated what they had done. Even at the inception of the idea and throughout the correspondence stage, the response was really wonderful.

There were well over seventy attended from Cairns and the surrounding district together with financial help and goodwill messages from every state in Australia, truly a gratifying achievement.

Our field outings have not been as anticipated, there being only three in number, one to Brown Bay, one to Wright's Creek and one to Davies' Creek, which were all well attended and although there were several private excursions, these are not the same. We are still troubled with a paucity of transport which has been our main drawback.

The monthly meetings have been held regularly and some very varied and interesting talks were delivered, Mr. Cliff. Cantrell gave us a talk on Astronomy; Dr. H. Flecker on "The Wannakai" (Finger Cherry); Mr. A. Read on "Biological Nomenclature"; Dr. Flecker on "Mollusca"; Mr. George Wilson on "Scientific Aspects of the Sugar Industry" and Mr. D. R. Peiniger on "Bird Habits".

During the year, the Club instituted an annual competition to be competed for through the medium of the Cairns Show Society at their Annual Show to be known as the H. Flecker Natural History Medallion and will carry a cash prize of two guineas and a suitably inscribed medallion. This is open to all young people up to the age of twenty years. The subject matter is left to the individual choice of the entrant and must cover some phase of natural history. The award will be given to the candidate who gives the best evidence of observation or original research and is not based upon literary merit. The judges, appointed by the club, will have the right to make no award should the entries fail to reach the required standard. The article from the successful candidate will be published in the

North Queensland Naturalist. Not many entries were received for this, the first year of the competition, but I am pleased to state that it was won by one of our junior members, John McLoughlin.

Other functions of the club during the year were the usual classifications and determinations besides requests for specimens for exhibition purposes. Thus the R.S.S.A.I.L.A. at Gladstone requested a live crocodile and bottled specimen of taipan which were supplied after some trouble. The Cairns Branch of the R.S.S.A.I.L.A. requested a small natural history display at their Edge Hill carnival which we were pleased to supply.

Special Air Freight parcels of named plants were sent to Broken Hill and Adelaide for special display there.

The preliminary work in con-

nection with our own Wild Nature show which is to take place in the "Remington Hall" on the Show Grounds during the festivities of the "Back to Cairns" week, which will be the first week in October, is well in hand and we have had promises of help from other States in Australia in the form of specimens of local flora and fauna from their respective states.

This, then is my report on the activities of the club during the past year in which I have been in office and I feel sure that whoever carries on in my place during the coming year will have the same whole-hearted support from the officers and members as has been extended to me and I would like to take this opportunity of again thanking all concerned for making my term as pleasant as it has been.

The Broad-Headed Snake

Hoplocephalus bungaroides (Boie)

Also known as the Fierce Snake, and the Night Snake

By WILLIAM HOSMER, Jun.

RANGE. Eastern Australia only. Recorded as far south as Helensburg on the south coast of New South Wales, and northward to the Lamington National Park in Southern Queensland. Although no reports are to hand, the author believes that specimens may occur further north than the Lamington Plateau. The Broad-Headed Snake is a coastal species, and is most common east of the coastal ranges. It appears to be fairly common in the rocky districts south of Sydney, several specimens having been collected at Waterfall and Helensburg. Others have been taken at Lawson and Wentworth Falls in the Blue Mountain Range west of Sydney. One specimen was collected at Tenterfield in the northern portion of New South Wales in 1950.

RECOGNITION CHARACTERS. Head very flattened, and considerably wider than the neck; body thickness moderate; tail round and moderately tapered. This snake may be confused with the Diamond Snake of New South Wales, *Morelia spilotes*, but may be distinguished by the presence of large regular head plates which are absent in the Diamond

Snake. The eye pupil is circular.

COLOUR. Usually black above with linear markings of yellow forming crossbars. On the sides of the body these yellow markings may be chevron-shaped, or they may take the shape of hour-glass outlines, whilst in others the pattern may be broken up giving the effect of yellow spots and blotches. The head is black above splashed with yellow, whilst below, the head and neck is yellowish. The ventral plates are greyish in colour with a spot of yellow at each end. The last costal row of scales are yellow edged with black. These usually lose their brilliance posteriorly and may fade out completely. The tail may, or may not have spots of yellow on the dorsal aspect.

SCALATION. Scale rows 26, 21, 15, occasionally 27, 21, 15, these being smooth. Ventrals range from 206 to 221, strongly angulate, and notched at each end. Subcaudals range from 40 to 56, average 48, all single. The anal is entire. Frontal one and a half times longer than broad; the nasal may or may not be divided. Supralabials 6, infralabials 6. The third and fourth supralabials enter the eye. The second and third infra-

labials touch the anterior sublingual and the third infralabial just touches the posterior sublinguals, whilst the fourth infralabial is in complete contact. The vertebral scale row is the same size as the costal, except that in some specimens the vertebrae may be enlarged a little anterior to the base of the tail.

SIZE AND DIMENSIONS. Grows to about 5 feet in length, averaging four feet or less. The dimensions of a young adult female are as follows:

Total length — 29 inches.

Length of tail — 3½ inches.

Diameter of body — ¾ inch.

Width of head — 5/8 inch.

Length of head — ¾ inch.

HABITS AND HABITAT. The Broad-headed Snakes are particularly partial to rocky localities, where they hide during daylight among the crevices and fissures, emerging in the evening shadows in search of food and water. Young specimens usually prefer shelter beneath flat stones and broken pieces of rock which lie on bare rock surfaces. Their diet consists of lizards, chiefly nocturnal species but they may also take mice and birds. As indicated by the ventrals, these snakes are semi-arboreal, and in captivity they appreciate a branch or several twigs on which they travel with all the grace and experience of a green tree snake or python. Large specimens probably ascend trees at nighttime in search of birds. The broad-heads are usually very hardy in captivity taking food regularly and indeed too regularly if given the opportunity. Of the six specimens in the writer's collection, two had to be put on strict rationing to break down their gluttonous tendencies for expert experience had taught that some snakes act more like hogs, surely an unhealthy habit. On the other hand, one specimen recently captured measured only 17 inches in length and had not been observed taking food and had to be forced fed by introducing a small skink into its mouth, which it devoured without delay. Twenty minutes later a crying noise in the cage indicated that a gecko was in trouble. Lifting a slab of rock which had been placed there to protect the snakes from the sun, the writer discovered the same snake engaged in a further feed. The

gecko, whose head was easily twice as wide as that of the snake was quite dead, but the snake took no chances and waited patiently for a further ten minutes, after which it began the process of devouring. Anyone who has never seen a snake eating would have been amazed if he could have watched this feast. Working each jaw separately, the snake moved the gecko from the position previously held, and worked up towards the head, this coming in line with the snake's jaws. Part one of this process having been completed, the rest follows relatively easily. In like manner, each jaw operating alternatively, the head was quickly engulfed within the snake's very elastic mouth, and drawing in the gecko's stout body, the head was forced into the neck stretching the skin so that the scales appeared to be greatly separated. Once in the neck, the snake can help draw the prey down by forming an S shape just below the head, and with the aid of muscles the prey makes its way down the body to be received by the stomach. The bulge in the body of this little snake took four days to disappear.

The Broad-Headed Snake is bold and fearless when captured and attempts to strike repeatedly at its captor. It still exhibits aggressive tendencies long after most other snakes would have become tame. When angry, it draws the head back, and moves its jaws in a chewing motion, showing the large bulges on either side of the temporal area indicating the location of the venom glands. Observing the "chewing" in anger, the writer thinks this to be a nervous reaction when the snake is tense and "at the ready" for the lunge forward. Unlike most other snakes, it likes to retain its hold for some considerable time, giving it a chance to inject a large amount of venom.

VENOM. In the past, writers have paid little or no attention to the virulence of the venom. This may be due to several reasons:

1. The species is by no means common, that is, not so common as the majority of large venomous snakes.

2. It is chiefly nocturnal in habit, restricting its wanderings to unpopulated areas, where it

very rarely comes into contact with man, being unlike the death adder, tiger, black and brown snakes which frequently invade the vicinity of dwellings in search of rodents.

3. As far as the writer is aware, there have been no reports of fatalities from this snake, but several persons known to him have been bitten by small specimens, some of which were very painful. Judging by the effects sustained, large specimens could inflict bites which might easily be serious and dangerous to man.

In a series of experiments carried out the writer found that lizards are more quickly subdued by an injection of venom from the Broad-Headed Snake than from the same quantity of venom taken from the Copperhead Snake *Denisonia superba*. The Copperhead is rated deadly to man, and no doubt injects much more venom at a bite than does the Broad-Headed Snake. Investigations are being carried out on the venoms of this and other species of snakes. Treat the snake with great caution, and attend to bites in the manner prescribed for dangerous snakes.

GLOSSARY OF TECHNICAL TERMS, referring to scales of snakes and lizards. **ANAL**. Of or

pertaining to the anus; the scale covering the anus at the base of the tail.

ANTERIOR. Situated near or toward the head.

COSTALS. Rows of scales between the ventrals and the vertebral or medium dorsal scales.

FRONTAL. Large plate on the head, shield like.

INFRALABIALS. Scales on the lower lip.

NASAL. Scale which is pierced by the nostril.

POSTERIOR. Situated near or toward the hinder end of the body.

SUBCAUDALS. Scales on the ventral surface of the tail.

SUPRALABIALS. Scales on the upper lip.

SUBLINGUALS. Chin scales, situated between infralabials.

VENTRALS. Belly scales, or series of scutes on the belly.

VERTEBRAL. Row of scales down the middle of the back.

APPEAL

The writer will be very pleased to identify and return any snake sent to him, and would be most grateful for any information regarding the localities of snakes, many of which are rare, in some cases there being only one specimen.

North Queensland Naturalists' Club

Meets at School of Arts, Lake Street, Cairns, usually on second Tuesday in each month at 8 p.m.

MEETINGS: 11th Dec., 1951, Plans for itinerary arranged for 18 visiting naturalists from Sydney and Melbourne under leadership of Mrs. P. Messmer explained. Club participating in outing to the Boulders at Babinda, on Sunday, 27th July, next.

3rd Jan., 1952. Decided to seek co-operation of Royal Zoological Society in drawing up code of safety for handling dangerous snakes, and to seek legislation prohibiting the keeping of snakes in captivity without a special licence.

Exhibits were (a) Skulls of venomous and non-venomous snakes. (b) Photographs of rare ground orchid taken by Mr. Lionel Law, *Eulophia carrii*, cultivated in Cairns. (c) Skull of dugong. (d) Hairball from bullock's stomach. (e) Marine Spider, *Desis crosslandi*. (f) Beak of hawk's bill turtle, *Charetta imbricata*.

12th February, 1952. Exhibits: (a) Angler Fish, *Antennarius siriatatus*, (c) Bat *Nyctimene norfolkensis*, Orange sucking moth, *Op-hideres*.

NEW MEMBERS ELECTED. 11th December, 1951. G. D. Henry, Tully; 8th January, Miss Eileen Mary Wall, 108 Abbott St., Cairns.