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NORTH QUEENSLAND NATURALIST CLUB

Founder, Presd. The late Dr. HUGO FLECKER.

OBJECTS - The furtherance of the study of the various branches of Natural History and the preservation of our heritage of indigenous fauna and flora.

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No. 143 144

CONTENTS.

Club Handbook	2
Editorial	2
Nature's Weather Prophets, Vincent M. Reilly	3
The Loner, Mrs. Hayward, Brisbane	3
Sea Eagles on the Reef, Bob Moncrieff, Toowoomba	4
Life History & Parasites of the Moth, Hypsa Alciphron - N. C. Coleman	5
Notaden melanoscaphus- Michael J. Tyler	7
The Bat Hawks - A. L. Rand	8

"Each Author is responsible for the opinions and facts expressed in his or her article".

NATURE'S WEATHER PROPHETS

One wonders, after studying insects and other animals over a period of years, are they better weather prophets than humans are?

It is a well known fact that ants will move their eggs and young to higher levels some days before heavy rains arrive. The old bushman would watch the ants and know when rain is due, and the ants were never wrong. Crocodiles are also known to make their nests and lay their eggs before heavy rain. The crocodile at Mt. St. John Zoo was noted for this and, generally, after the nest-making and the egg-laying, heavy rain fell. Birds also seem to know when rains are due, as their mating and egg-laying and hatching of the young birds coincides with the growth of fresh green grass with its abundance of insects - grasshoppers, caterpillars, worms, etc. - as well as the availability of fresh water.

Another very interesting observation has been made by Mr. Peter Macnochie, the Water Officer of the Cairns City Council.

Speaking to me just after the recent exceptional floods in Freshwater Creek, where the water supply intake is situated, Mr. Maconochie said: "I should have known we were going to have a flood because I saw the tortoises all out on the high ground." On three previous occasions he has observed this evacuation of the tortoises in the Gorge a few days prior to heavy rains and floods in the Freshwater Creek area. In the Gorge, during the floods, huge boulders of tons in weight are washed about like corks and a tortoise would have very little chance of survival. So Nature has given them the power to know when a flood is due, when they will vacate the creek for higher ground till the danger is past.

One wonders how many more of Nature's creatures are endowed with this sixth sense and can successfully foretell the weather.

Vincent M. Reilly.

THE LONER

It is not generally known that, in herds of cattle, as in humans, there is occasionally an anti-social type which appears to spend its life wandering aimlessly, never mixing with the other cattle. I saw an example of this while camping in the Gulf Country in Northern Queensland.

The last glimmer of the setting sun made bright patches here and there on the lake as flights of wild duck settled among the water lilies, noisy flocks of black cockatoos and beautiful grey and pink galahs flew up from the water's edge to roost, or flashed and wheeled in evening flight, and a pair of sombre plain turkeys warily came down to drink.

Several mobs of stock followed the well beaten pads to either side of the lake, some moving slowly, others in a hurry to drink. After a few playful

bouts between the youngsters, all settled down quietly for the night.

Suddenly the peaceful harmony of this beautiful spot was disturbed by a long drawn out bellow in the distance, coming closer and closer. Then over the rise he appeared - a partly grown Polled Angus bullock. There he stood in a tension of anger and scanned the campers, who were between him and the water. Bellowing in defiance, he pawed the soft creamy dust until his glossy black coat took on a greyish hue.

Still bellowing resentfully, he retreated down the slope and followed another pad around the back of the old battery site to the other side of the lake. Then, after quenching his thirst, he approached the resting stock, but not to rest. He wandered aimlessly backwards and forwards amongst them, as though in quest of something. After several minutes he moved along the lake side to the rest of the stock, where he resumed his restless wandering.

The behaviour of the animal was indeed strange, and appeared to have a disturbing effect on the herd.

Then on again, as if following an invisible guide, he moved away from the lake towards a distant line of timber. The urge to roam was ever there, and the mournful bellowing was faintly heard far into the night, as he travelled further and further away over the ridges, unable to find peace, roaming ever onwards.

Mrs. Hayward, Brisbane.

SEA EAGLES ON THE REEF

It is a matter for some concern, amongst naturalists, at any rate, that our Australian eagles have never received the recognition they deserve. Slaughter and abuse are the lot of the noble Wedgetail, and in parts of the Outback a bounty is paid for every one destroyed. The splendid sea eagle of our Queensland coast is better off in this respect; but whoever heard of an Australian who was proud of his eagle, and sincere enough to say so?

The equivalent of our Sea Eagle is the White-headed or Bald Eagle of America the female of which is the same length as the male of our eagle, 38 inches. The Americans have proudly displayed their eagle as a symbol of nationhood, while we have chosen to ignore it.

The Wedgetail and Whistling Eagles are old friends of mine, but the Sea Eagle was only a passing acquaintance until my visit to the far northern reefs.

While we were lying off Cape Bedford one night, watching the light on Three Isles, a reef away to the nor-nor-east, the skipper informed me that there was a sea eagle's nest built midway up the steel structure of the hundred foot light tower. I was anxious to examine the nest, but when we anchored off the cay the following morning, the steel light tower failed to reveal any sign of a nest. We landed in the dinghies, and the first thing I noticed was tyre-tracks in the sand of the cay. I scratched my head as I looked at the tracks, for if anything was out of place on this remote reef of the Barrier it was they. Then I remembered the day in Port Douglas when the lighthouse tender Cape Moreton had anchored off the beach and sent her big "duck" ashore. The same thing had apparently happened here, for those tracks led directly to the foot of the tower. While clearing away undergrowth from the foundations, the maintenance crew had no doubt decided to remove the nest in the tower as well.

A week after this disappointment, I was consoled by finding a nest of my own on Eagle Reef, to the South-west of Lizard Island. It was built on the ground, on a cay which is only a few feet above sea level., composed of hefty sticks and all manner of driftwood, it was a tremendous thing, over seven feet high. Apparently, like the wedgetail, the sea eagle builds on and adds to the old nest every year. There was still fluffy down clinging to the top of the nest, but the fledgling was gone. I am not sure, but I believe the sea eagles rear only one youngster a year. Wedgetails, I know, rear two. I climbed the structure, a miniature tower in itself, and found inside the nest two electric light bulbs, probably discarded by passing vessels, and a rubber ball. Sea Eagles live mainly on fish and refuse cast up by the sea, so I can only conclude that these strange objects had attracted the hunting eagles' attention while floating in the water, and been taken to the nest for closer examination. Why they were allowed to remain in the nest after being proved valueless as food, I cannot explain.

While I was rambling over the mighty granite crags on Lizard Island, I watched a sea eagle wheeling high above me in the darkening sky. The eagle has a peculiar, butterfly-like flight, and is a joy to watch. Night was at hand and the eagle and I shared a great and all-pervading loneliness of land and sea and sky. I wondered if this was the same eagle that had built its nest on Eagle Reef and, if so, why had it chosed such a vulnerable place when the granite heights of Lizard Island were close at hand. The topmost point of Lizard Island is eleven hundred feet above the sea, yet only a few miles away across the water, a nest had been built at sea level.

The only inference I can draw is that Eagle Reef is never visited by man, and the bird has therefore no fear of mankind. Perhaps there is another reason. If so, it is good to know that Nature still has a few secrets left.

Bob Moncrieff, Toowoomba.

LIFE HISTORY & PARASITES OF THE MOTH, HYPSA ALCIPHON

This moth lays its eggs in dome-shaped clusters, 9-12 mm. in diameter and 4 mm. deep, on the under surface of young terminal leaves of the cluster fig (*Ficus racemosa*). The eggs are laid early in the evening and several egg-masses may be laid by one moth. I have counted 60-80 eggs approx. in each group. They are fastened to the leaf and to each other by a sticky substance and covered by scales and fine hairs from the moth's abdomen. They are about 1½ mm. in diameter and of a pale pearly green tint. Hatching takes from 5-7 days and emergence takes place at night.

Caterpillars are about 4 mm. long on hatching, with a large head and slender body. The colour is: head, reddish brown; body, two parallel white stripes on dorsal surface separated by a central black line. There is a longitudinal white stripe on either side of body ventral surface. Thorax, greyish black; abdomen, yellow. These colours are maintained throughout the larval stage of the insect.

Feeding commenced immediately, the larvae feeding outward from the egg cluster and eating only the softer parts of the leaf, leaving it like a skeleton of green gauze. It took the young caterpillars about two days to eat this first leaf, after which they scattered to nearby leaves. They fed mainly at night, sheltering by day between or under leaves.

From the time of emergence to about one third of their larval period, the caterpillars seemed to die of a disease in which they were suspended from the leaf by a strand of silk or stretched immobile on the leaf surface. Many of the survivors were eaten by small bronze cuckoos and varied trillers. Mortality from the disease was about 30% of the insects and from the birds probably 50%-60%.

There are at least four moults in the caterpillar state, with no apparent change in instars but the diminished proportion of the head to body size. Larval period is 18-21 days, by which time the caterpillar has grown to 28-33 mm. in length and 5-6 mm. in diameter. It then prepares to pupate by drawing the edges of a leaf together and binding them with silk. Pre-pupal stage is 1-2 days and the Pupa is naked within the folded leaf.

The adult insect emerges in 12-14 days.

Males and females are similarly coloured: Head, thorax and abdomen, orange (black spot on each shoulder); eyes, brown. Forewings - brown with white veins, central longitudinal white patch on dorsal surface, small oval patch on ventral, surface. Rear wings - dorsal, fore part white, rear brown; ventral, triangular central white patch, remainder brown. The females are about 64 mm. and the males 56 mm. across the wings.

Many of the mature larvae were found to be parasitised by tachinid flies. On examining some of the caterpillars at different stages of growth, I found that the fly laid its eggs on the dorsal area of the thorax and the maggots, on hatching, entered the caterpillar's body near the point of attachment of the egg. Of the caterpillars examined, approximately 60% were parasitised by the fly and had 1-3 maggots in them. The parasitised larvae prepared for pupation in the same manner as a healthy insect by pulling the leaf edges together and binding with silk, but they did not pupate. Examination with the microscope showed the movement of the maggot within its victim, and the movement, shape and transparency of parts of the skin showed the number of maggots present. I have watched through the microscope the twitching of the victim's legs and jaws and the writhings of the still living body in response to the movement of the maggots within, and have seen the large kidney-shaped spiracles on the posterior of the parasite as they were thrust to some break or thin area in the caterpillar's skin through which the maggots evidently drew their air supply. From the time of preparation for pupation, these parasitised larvae lived a maximum of four days. Some were still alive when the maggots ruptured the body wall and emerged to pupate beside the host's remains.

As the maggots emerged and pupated, I placed them in separate jars on cotton wool.

Some of these pupae produced the typical, sombre, grey and black, bristly tachinid flies; but about 50% of those examined produced three species of

chalcid wasp, which were parasites of the fly maggots within the caterpillars. Two of these species have been identified by entomologists of the C.S.I.R.O., Canberra; the third species has not been identified.

N.C. Coleman, Edmonton.

Notaden melanoscaphus, a species of frog new
to the fauna of Queensland.

When Hosmer (1962) described the leptodactylid frog Notaden melanoscaphus the only material available was a single subadult male collected at Borroloola in the Northern Territory. In June 1963 P. Aitken and N.B. Tindale of the South Australian Museum collected five specimens of this species in Queensland. The purpose of this note is to place on record this addition to the Queensland fauna and to briefly supplement the morphological information of the type description.

The specimens were found at Appel Channel, Mornington Island and have been deposited in the South Australian Museum collection where they are catalogued R. 4936. Mornington Island is approximately 200 miles east of the type locality.

The series has a snout to vent length range of 30.8-33.2 mm. with a mean of 31.6 mm. None are sexually mature and the poor condition of their viscera prevents accurate sex determination. In their gross proportions the specimens conform very closely to the type description. Hosmer gave a figure 0.28 for the tibia length to snout to vent length ratio, whilst in the present specimens the range is 0.27-0.29 and the mean 0.284. Similarly the head width to snout to vent length ratio of 0.28 for the type compares with 0.27-0.30 (mean 0.286). From a comparison of these figures with those provided by Hosmer for 10 specimens of bennetti and 46 N. nicholli, it would appear that comparison of these standard characteristics will not provide a means for distinguishing the three members of the genus.

The dorsal pattern of pigmentation is similar in that all specimens bear five large dark blotches, which are rendered conspicuous or inconspicuous by differences in the intensity of the background colouration. Each specimen bears the jet black outer metatarsal tubercles which evidently characterise this species, and provide a ready means of identification.

Although the skin of melanoscaphus lacks the prominent tubercles of bennetti, it is nevertheless clearly well endowed with secretory granules, for the dorsal surface of two specimens is covered with a dense film of congealed, creamy secretions.

Reference

Hosmer, William (1962), a New Leptodactylid Frog of the Genus

Notaden from Northern Australia.

Amer. Mus. Novit. No. 2077, pp. 1-8.

Michael J. Tyler
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September, 18th 1967

A. L. RAND

THE BAT HAWKS

Mr. Boyd's record of "night hawks" catching bats about a water tank in Queensland (N. Queensland Naturalist, No. 143, (July, 1967), Vol. 43, p. 8) reminded Dr. L. J. Brass that when he and I were in South New Guinea, (Oriomo River) just north of Torres Straits, with Archbold Expeditions in January and February, 1934, we glimpsed a bird and heard the sound of its slashing wing beats on a number of occasions in the dusk, a bird we suspected of being the Bat Hawk, Machaerhamphus alcinus, which flies at dusk and by night and catches bats. We never secured a specimen, and the evidence we had was too tenuous to include the species in our scientific reports.

However, the bat hawk is definitely known from New Guinea, having been taken from as far east as the Port Moresby area (Astrolabe Mts. and Laloki River, by Goldie and Alex Morton) and the Kumusi River by Meek. Otherwise, it has a wide distribution westward through the East Indies to Southern Asia, and in Africa, where it lives in both forest and the open woodlands or savannas. The bird is apparently rare throughout its range, as it also seems to be in New Guinea, for I never got a specimen and have only a half dozen New Guinea records from the literature, and strangely, all the records are old. When the New Guinea subspecies, M. a. papuanus Mayr, was described in 1940, it was based on a single specimen collected in 1907.

The bat hawk has not been recorded in Australia. But, the water gap of Torres Straits between New Guinea and Australia is relatively narrow. Some birds have crossed it, ranging from the East Indies to New Guinea and Queensland, like the blue breasted pitta; others reach New Guinea but not Australia, like the hornbill and the tree swift.

Mr. Boyd's record of "night hawks" catching bats is not detailed enough to know whether it was an owl, as the editor suggests, or possibly a bat hawk. Certainly some of the large owls (ninox) of Australia are known to catch bats on the wing and take them to a perch to eat. But, as the question arises, "was it a bat hawk?" The following brief comments on the identification and habits are provided, abstracted from "Handbook of New Guinea Birds" by A.L. Rand and E.T. Gilliard :

Machaerhamphus alcinus Westerman, Bat Hawk.

Length, 17-20 inches, about the size of a peregrine falcon (Falco peregrinus) and somewhat like it in shape and in flight. Colour, plain blackish brown above and below, but with an incomplete white eye ring and a conspicuous white area on throat and breast. A small crest is present on the back of the head, the gape is very wide, bill short, and the upper mandible very compressed and blade-like at the tip. This last is a unique and very distinctive feature.

The bat hawk seems to pass the day perched in some shady tree. In the twilight it begins to hunt, perching on some exposed perch and circling out for its prey, or flying about with much gliding over rivers, where it seizes bats and small birds such as swifts and swallows, in its talons and gulps them down in flight.