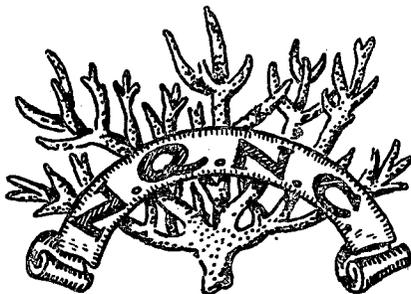


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"Each author is responsible for the opinions and facts expressed in
his or her article".

NORTH QUEENSLAND NATURALISTS' 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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GENERAL MEETING for discussion, lectures, screenings and display of specimens are held on the second Tuesday, 8 p.m., at the Old Kuranda Barracks, Esplanade.

FIELD DAY excursion usually fourth Sunday.

VISITORS are welcome, especially members of Australian and Overseas Clubs and Societies.

Subscriptions (Due September 30) :

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Second Mainland Nesting of the Grey Swiftlet.

A Mr. Ron Moore reported to a member of our Club that whilst wandering around the hills near Edmonton he had come across the nest of a small bird in an abandoned gold mine tunnel on Mt. Peter. Consequently on March 5th a small party from the Club, namely Mr. and Mrs. Corbet and Tom, Miss Taylor, Mr. G. Atkinson and Mr. and Mrs. J. Cassels under the able leadership of Mr. Moore made a trip to Mt. Peter to investigate this matter. Mt. Peter is about 4 miles from Edmonton and the tunnel was about 1000 ft up the hill. The first part of the climb was quite easy but the last few hundred yards were very strenuous, being along a very rocky creek bed littered with fallen trees and stinging trees. The last few yards, from the creek bed to the tunnel were fraught with some danger, as it was high and steep and underfoot were boulders and loose chips obviously thrown from the mine and threatening to send us to the bottom. Soon we were in front of the tunnel, an opening in solid rock. As we entered, our lights disturbed hundreds of bats which dashed and fluttered past us hitting our faces and legs. Soon we were in pitch darkness with water squelching underfoot and dripping down the walls (and our necks). About 100 yards from the entrance we found the nest complete with parent and child. As surmised, it was a Grey Swiftlet (*Collocalia francica*). The parent bird flew away when the lights were directed on to the nest but the young one remained. The nest was a small half saucer of twigs and feathers fixed to the wall with a shiny glutinous substance. The young bird was fully feathered and nearly full grown. Beneath the nest there was a large pile of soft excreta. It is surprising but this was the only nest in the tunnel though I understand they normally nest in colonies. Nowever, in view of the fact that hundreds of Grey Swiftlets can be seen flying over and around the hill, it is quite likely that further exploration of this area, with its old mine shafts and tunnels dotted around, would unearth more of these nests. From Mr. Roy Wheeler's article on "Mainland Nesting of the Grey Swiftlet" in *The Bird Watcher*, Vol. 1 No. 1 March 1959, I gather that this is only the second mainland nesting site found. Flash Photos were taken by Mrs. Corbet but I regret to say that they did not come out.

Three weeks later on March 29th, a Field Day for all members was held at the same place. This time about 16 members were escorted up to the cave, Mr. Bob Hill. As expected, the baby had flown but all were pleased to see the nest which was again photographed, this time successfully. However, though quite a good photo, the very nature of it made it impossible to reprint on any but the best surfaced paper.

Ref. "Mainland Nesting of the Grey Swiftlet". Mr. Roy Wheeler in *The Bird Watcher*. Vol. 1, No. 1, March 1959.

M. L. CASSELS.



PLATYCERIUM GRANDE.

The Staghorn — *Platycerium grande* — is a magnificent ornament in its botanical element, attached to and camouflaging the otherwise barren trunk of a tree.

Differing from the Elkhorn — *Platycerium bifurcatum* — which has at least three varieties or types in its leaf formation, the Staghorn with its fan spread and usually lighter and fresher colouration in appearance, maintains its one aspect and further, the Elkhorn seems to germinate more easily thus spreading to further areas.

Of the sub family Polypodioidae, it is classified as a fern, though the

layman would possibly doubt such from the appearance of its foliage, but when one associates the Staghorn with the fern — *Drynaria quercifolia* — that inhabits the same growing conditions and forms behind its foliage the peat so desired by orchidologists, it becomes more apparent especially when one learns that both are of the same sub family.

In the authors experience as Steward of the Horticulture for some years at the Cairns Show, exhibits of the Staghorn have been very few and not comparable with the specimens seen in Brisbane gardens and at the Oasis, a garden and swimming resort on the outskirts of Brisbane. The display of Staghorns makes a delightful attractive display for visitors and especially horticulturists. These specimens I believe originated in the Tambourine range of mountains.

Perhaps the best known habitat in the Cairns district of the Staghorn is the Davies Creek area, but deforestation is progressively destroying them.

Most catalogues advise watering only behind the leaves, though how rain is able to avoid wetting the front is not explained, but one thing does seem advisable, and that is to allow the dead leaves to fall as cutting them seems to bleed the growth. The vernacular nomenclature implies a likeness to the Stags Antlers.

S.DEAN.



POT POURRI.

An unusual fish was caught by a Cairns Fishing Vessel which on examination proved to be a pure albino Coral Trout. Fortunately someone with an eye to the unusual saw the fish as it was unloaded and now, instead of ending up as fish and chips, the Albino Trout occupies a proud position in the home of our President.



A peculiar Magpies nest was brought in from Mount Mulligan. Instead of the usual sticks and vines, etc., it was made entirely of wire lightly lined with feathers. Draughty but durable.



Has anyone seen a Black Bandicoot? It has been reported from Innisfail and from Tully Falls that they have been sighted in these areas.



HERCULES IN THE SPIDER WORLD.

While collecting insects at dusk one evening I saw a fair sized specimen of the butterfly *Papilio ulysses joesa* (Blue Mountain) resting on an ixora flower. I pressed a butterfly net over it but beyond a weak fluttering of the wings, the insect did not move. On examining it more closely I found that it was being held by the head by a stoutly built yellowish white flower spider. Holding the butterfly by the thorax with a finger and thumb I pulled on its body to test the spiders strength. For so small a creature, this spiders strength was surprising. The spider measured 14mm x 12mm approx with relatively stout legs. The butterfly was about 32mm long with a wing span of 120mm. I suspect the venom of this species of spider acts rapidly on its insect prey for I have noticed it captures hive bees and large flower wasps with little difficulty and the victims are soon quieted.

N. C. COLEMAN.

BOTANY AND DYES.

For many hundreds of years, before the discovery and wide spread use of synthetic coal-tar dyes, the human race used colouring matter of botanical origin in the dyeing of textile fabrics.

The early Britons obtained a blue dye from the WOAD plant (*Isatis tinctoria*) and, according to Roman writers of the period — 2000 years ago, used this to dye clothing material and also to colour their bodies. The dye was present in the leaves of the plant and a fermentation process finally rendered it available in the form of Indigo.

Indigo.

The use of Indigo as a dye has been known for several thousands of years. The cloth wrappings from Egyptian mummies 5000 years old were tested and found to be Indigo dyed.

India was the chief source of supply during the period when the plant from which it was obtained (*Indigofera sumatrana*) was grown on a large scale to supply a large foreign market. At the peak period in India 250,000 acres were under cultivation. A fermentation process was used to obtain the dye from the leaves of the plant. It was also grown to some extent in Java, China, Japan, West Indies and Central America.

The natural dye became an article of commerce in Europe during the 12th Century.

In 1865 work was commenced on the problem of the synthesis of Indigo and in 1879, Baeyer, a German Scientist, succeeded in making it in the laboratory. In 1897 a German firm of dye makers put it on the market as Indigo

Puer.

Eighteen years (1879-97) were spent in making the production on the works scaleable to compete in price with the natural dye. From then on the synthetic dye gained ground and now in the industrialised countries the natural dye is obsolete.

Other Dyes of Botanical Origin.

Fustic (old).

Extracted from the wood of *Morus tinctoria* from Central America, Cuba and Jamaica. It gave yellow shades in wool.

Persian Berries.

Extracted from the dried berries of *Rhamnus tinctoria* or *infectoria*. This came from Asia Minor and gave yellow to orange shades in cotton printing.

Logwood.

Extracted from the wood of *Haemotoxylon campechianum* from Central America, Jamaica and Domingo. It gave black dyeings on wool cotton and silk.

Archil.

From various species of lichens of the *Roccella* and *Lacanora* families. It gave bluish-red shades on wool and silk.

Cutch.

The dried sap of various *Acacia* and *Mimosa* species growing in the East Indies. This gave fast brown shades on cotton.

The above five colouring matters were dyed in conjunction with certain metallic salts, usually salts of iron, aluminium, tin and chromium.

In a survey carried out in India in 1883 on the natural dyes in use at the time, a list was given of

- 16 plants of trees giving red shades.
- 15 plants or trees giving yellow shades.
- 2 plants giving blue shades.
- 20 plants giving brown, black or green shades.

Various parts of the plant or trees were used, such as bark, leaves, wood, seeds fruits, flowers or roots.

The two following dyes are not of botanical origin.

Tyrian Purple.

This famous dye of ancient times was obtained from certain molluscs. The chief species being *Murex brandaris* and *Murex trunculuc*. Its use was reserved for Royalty and high officials of the Church. It is believed to have been used on the island of Crete as early as 1500 B.C.

In the arly part of the 20th century, research work showed this dye to be closely related, chemically, to Indigo — a plant dye originally.

Cochineal.

A dye used largely in earlier times and was obtained from the dried bodies of the female cochineal insect — *Coccus cacti*. It gave scarlet shades on wool and silk, using salt of tin and aluminium.

F. T. WADE.



AN APOLOGY.

In the North Queensland Naturalist, 29, No. 126, 4 (Dec. 1960) the present author described *OBERONIA ATTENUATA* DOCK, as a new species and stated that this plant was first noted by L. W. Archer, B. M. Borger and the author in January 1960. It has now been found that this is an error, Mr. Jack Wilkie of Babinda having collected the plant at Babinda in May 1956 and the author offers sincerest apologies to Mr. Wilkie for being responsible for this error being published. He would also like to offer Mr. Wilkie the heartiest congratulations on his finding yet a further new species.

During a period of illness in May 1956, whilst resident in N.S.W. I received from Mr. Wilkie a package of orchids, included in which was a specimen of what the sender referred to as *O. titania* Lindl. It was quite apparent that this plant was not *O. mulleriana* Schltr. and since at that time only 2 species of *Oberonia* were known to occur in Australia, it was simply assumed, not caring to use a high powered magnifying glass (which is necessary when studying the minute flowers of this genus) whilst feeling so indisposed, that it was Lindleys species. Recently, whilst studying some specimens of the genus, I had occasion to refer to some herbarium specimens and the attenuated leaves of Mr. Wilkie's specimen stimulated my curiosity and some flowers were softened out and were found to be quite indisputably the new species *O. attenuata* Dock.

A. W. DOCKRILL.

Colony Formation and some notes on the habits of the Green Tree Ant, (*Ecophylla smaragdina*).

In late January 1961, I captured seven green ant queens resting on leaves on cultivated and native trees and placed them in numbered jars for life history and colony formation studies. Four had shed their wings at the time of capture and the other three shed their wings a few days later. The wingless ants had laid eggs before being collected and the others laid within one week later. The number of eggs in these seven cases varied from 19 to 27.

The queens were left on the leaves on which they had been resting and the stems of the leaves were pushed into damp sand in the jars to keep the leaves firm and fresh and to maintain a humid atmosphere. Eggs hatched in from 5 — 8 days.

The queens were very aggressive, moving quickly to attack any object or finger approaching the eggs or larvae. The queens were observed to feed the larvae by regurgitating fluid, the larvae being held by the head by the mothers mandibles. To test the maternal instinct of the queens I removed two of them from their eggs and substituted one for the other. They settled down without any fuss and brooded over the eggs as though they were their own. Later I made a similar exchange with queens with young larvae and after touching the larvae with their antennae for a few minutes they settled down to feeding the larvae. In all cases when the first hatched larvae were four or five days old, the queens used them to spin a rough shelter over themselves and their progeny. The larvae was grasped by the middle and moved from one side of the leaf to the other. The resultant shelter was flimsy and irregular but strong enough to put a noticeable tension on the sides of the leaf.

Crushed insects, live scale insects and aphids were placed in the jars to note if the queens would feed while brooding and rearing the young ants. Being absent at work by day, I placed the food in the jars on my return home. In no case did I notice the queen feeding herself before the emergence of mature workers. The queens fed the first newly emerged workers by regurgitating fluid as in the case of the larvae, but later I observed reciprocal feeding between workers and queens, the workers feeding on the crushed insects, etc., and then regurgitating to feed the queens.

Though the queens did not feed before the birth of the first workers, they drank readily from cottonwool soaked in water and the workers were drinking frequently a few days after emerging.

When the pupa were formed no signs of a cocoon could be detected under the low power of the microscope. The small amount of larval silk used by the queens in constructing their shelter could scarcely have exhausted the larval silk supply in the young ant which in the pupal stage were entirely naked. The instinct of cocoon formation may have lapsed owing to the long usage of the larval silk for nest building by the adult workers. The fact that the queens readily made use of the larvae in the construction of a shelter points to the possibility of the peculiar nest forming habits of the green ants being first initiated by the mothers and then acquired by the workers by association or inheritance of instinct.

I have observed more than two hundred new colonies over the past four

years — most of which were formed in the rainy season. My observations show that less than 30% of these had a duration of more than six months.

I have opened many other young colonies and colonies in various stages of development and of these more than 20% were without queens. Some unknown factor is causing a high mortality in the queens of this ant in the area examined by me. This mortality seems to be greater in the young colonies than in the older nests.

The larval silk is put to uses other than nest building by these industrious and pugnacious insects. In common with many others of their family, they construct shelters over colonies of aphids and scale insects which provide them with an excretion which they consume very readily. To shelter their livestock the ants will draw two or more leaves together and fasten them with the larval silk. Larger leaves holding aphid or scale colonies may be bent on themselves, which, considering the springiness of some leaves is no small effort for these ants. Small colonies of wooly aphids and scales sheltering in clefts in the fruits of custard apple are also covered with silk. The larvae used in the construction of these shelters are transported during night-time and early and late in the day or during very overcast days, probably to avoid injury to the larvae by exposure to direct sunlight.

N. C. COLEMAN.



A Survey of the Avifauna of the Atherton Shire.

Considerable collecting for museum and private collections by early birdmen, including such well known figures as Kendall Broadbent, who collected the type specimen of the Golden Bower Bird (*Prionodura newtonia*) at the head of the Tully River in 1832, and many years later in 1908 Sharp brothers working for Southern Museums, and Syd Jackson employed by H. L. White of Belltrees, Scone, N.S.W., staged a close and bitter race to secure the type eggs and nests of *Prionodura* and the remarkable Toothbill Bower Bird (*Scenopoeetes dentirostris*). To the dismay of Jackson the race went to Sharp brothers. In the intervening years previous to the second world war, little was heard from ornithologists in this rich region. While engaged on military service on the Tablelands during the years 1943 to 1945, P. A. Bourke and the late H. F. Austin jointly compiled a list of species observed covering an area of 12000 sq. miles from Mount Molloy in the North to Mount Garnet in the South and including the regions of Bartle Frere and Bellenden Kerr in the East. A total of approximately 200 species were recorded, this being a very valuable contribution to ornithology and this list with brief comments on each species was published in the *Emu* Vol. 47.

In 1955 I commenced to record a list of species found within the boundaries of the Atherton Shire, an area of approximately 352 sq. miles. This area, very small in comparison to the area covered by Bourke and Austin, has surprisingly a similar range of habitats. Where Bourke and Austin could not return to many promising and interesting areas, I have been able to visit each habitat many times and at different seasons. This has been the means of locating many rare and interesting species, especially the nomadic and migrating types. Each habitat has contributed its quota. Tinaroo Dam and adjoining areas have considerably added to the species count mainly by water-

frequenting birds, including several of the overseas migratory waders. These extremely interesting species are mainly spring and summer visitors and a suitable habitat has been established by the releasing of ponded water for Irrigation and other projects. At the end of the year 1960 a total of 253 species has been recorded for the Atherton Shire, and no doubt considerable additions will be made in the future years. Ten (10) species listed by Bourke and Austin have yet to be located and no doubt more new species will eventually visit the dam areas. Two species which previously were resident in certain Open Forest habitats, the Emu (*Dromanus novae-hollandiae*) and the Great Bower Bird (*Chlamydera nuchalis*) have now moved to more inland areas and are not included in the Atherton Shire list. In 1959 John Warham, a visiting English naturalist, accompanied by his wife, spent six months in Atherton localities and were very successful in locating nests for detailed study, several rare species being under observation at one time. It was with regret they left Atherton to continue the journey around the continent of Australia, hoping to return some time in the future. From time to time visiting Ornithologists have been amazed by the variety and abundance of our native birds, and all stress the need for full protection and the preservation of habitats so that in the future citizens may enjoy the pleasure of roaming the bushlands and seeing and hearing the native birds in their natural surroundings.

Ref. "The Diaries of Syd Jackson." A. H. Chisholm. "The Avifauna of the Atherton Tableland" P. A. Bourke and A. F. Austin.

J. BRAVERY.



EDITORIAL.

Junior members in Cairns are reminded that those wishing to enter for the Flecker Memorial Medallion must soon get their essays written as Show time is nearly with us. Remember — personal observations only — no notes from Naturalist books are required. Your spelling, punctuation and writing are not taken into account, purely and simply the subject matter. We hope that more members of the Club will enter for this competition this year.

Painting of the Herbarium and painting and rearranging of the Library is now nearing completion. When it is all straight again, a list of books will be published and sent to members on request. On application to the Librarian, any of these books may be borrowed and we hope that Country members particularly will take advantage of this added amenity.

We are still sending Stone Fish down to Ascot Vale as and when they are brought in to us. Five more are still wanted by the Laboratories.

We regret to announce the death of one of our Club members, Mr. F. R. Morris, on April 10th. Our sympathy goes out to his relatives in their sad loss.

We have been able to have a Field Day each month this year. Venues have been Machans Beach, Hartleys Creek, Browns Bay, Mt. Peter, and Tinaroo Creek Road. The Mt. Peter trip was a very successful one. Whilst in the tunnel viewing the Swiftlets nest two of the junior members captured three small bats and they were taken down to the main party for identi-

fication. We think two were Eastern Horseshoe Bats and one the Eastern Broad Nose Bat. After examination they were released. Other finds of interest during this outing (which was attended by about 40 members and friends) were a green tree snake and a lovely specimen of a scorpion. The mineralogists were all very interested in some large blocks of white marble that had been cut from the surrounding hills.

Bad weather marred the Browns Bay trip and stopped many from attending.

At Machans Beach, Hartleys Creek and Tinaroo Creek Road many interesting birds were seen and botanical specimens collected. Insects were also on the collectors lists and many species of ants were collected from Tinaroo Creek Road by a visiting naturalist, Mr. Weatherall.

PLEASE, more material is urgently needed from members for our Journal. Full length articles or Pot Pourri items will be welcomed.

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