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Founder, Presd. The late Dr. HUGO FLECKER.

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

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Club Officers - September 30, 1966 to September 30, 1967

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## **CLUB HANDBOOKS**

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## **EDITORIAL**

We are happy to report that a home has been found for the Flecker Herbarium. Not a specious one admittedly, but it has taken away the worry of where it was to be housed when we vacated our present premises. It would appear that this will be in the near future.

Mr. V. Winkel, Curator of Parks and Gardens of Cairns, is very interested in the Herbarium and at his instigation, the Club wrote and asked the Cairns City Council for permission to use a small building originally built for this purpose, in the Council Gardens at Edge Hill. Mr. Winkel also put in his request to the Council and permission has been granted. However, some repairs, renovations and additions will probably be necessary and it is proposed, with the consent of the members, to use the money collected for the Building Fund to this end. Any money left over after these have been completed will be used for the running of the Herbarium.

We would remind all members and readers that at any time this Herbarium is open for inspection and study purposes by interested people when they visit Cairns. All they need to do is to get in touch with the President, Mr. A. J. Cassels or Curator, Dr. L. Brass at Box 991, Cairns.

### **Donations to Herbarium Building Fund — Continued.**

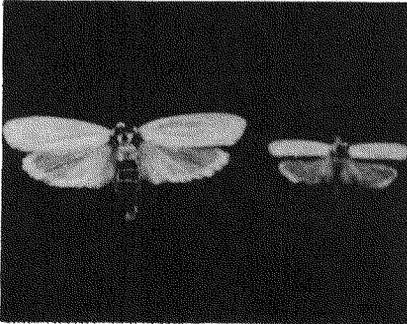
Mr. V. Reilly, Mr. J. Crowhurst, Mr. R. Taylor, Mr. and Mrs. Lovett, Mr. S. Dean, Mr. P. Colman, Miss Taylor. — Total \$246.84.

We congratulate Mr. A. Dockrill on his appointment to the Lae Herbarium.

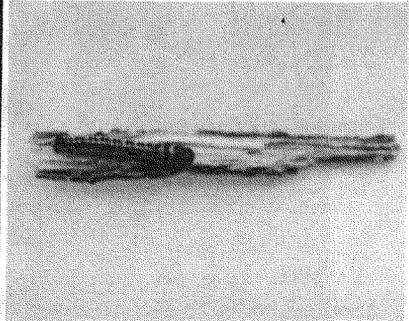
# INSECTS ATTACKING GREVILLEA spp. IN THE MAREEBA AREA

By K. H. HALFPAPP — Box 60, Mareeba.

During the past year observations were made on insects attacking *Grevillea* spp. in the Mareeba area. The insects listed have not been observed on all the *Grevillea* spp. common to this area. Each insect species is listed with its known hosts.



*Xylorycta homoleura* Low, Xyloryctidae (female and male moth).



Larvae of *Xylorycta homocleura* found mining *Gr. mimosoides*.

*Xylorycta homoleura* Low family.

## Xyloryctidae

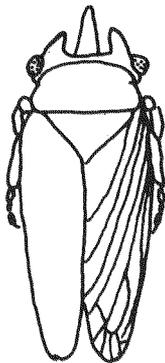
Larvae of the above species mine the stems and branches of *G. pteridifolia* and *G. mimosoides* emerging at night and dragging the leaves to the entrance for food. The adult moths are white of medium size with broad wings with medium scale fringes. Male moths are smaller than the females and can be distinguished by a light brown stripe on the posterior margin of the fore wings. These moths are generally retiring in habit though attracted to light.

The larvae are light green in general body colour with dark sclerotised plates over the body surface. The head capsule is particularly dark and heavily sclerotised.

The entrance to the larval mine is protected from the outside environment by a large chamber composed of silken threads covered on the external surface by frass pellets.

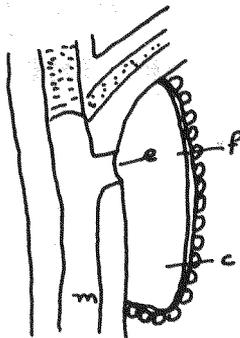
Pupation occurs in the larvae shelters, the pupal case remaining after emergence of the adult.

Moths being observed in this study emerged in October.



*Cornutipoides tricornis* Evans.

*Cornutipoides tricornis*



c chamber  
f frass  
e entrance to mine  
m mine

Entrance to mine at *Xylorycta homoleura* mining *G. mimoisides*.

Another insect found in great abundance on many *Grevillea* spp. is *Cornutipoides tricornis* Evans family Eury melidae.

Both adults and nymphs of this species are found on the tender young stems and shoots. They are active creatures when disturbed having the habit of moving quickly round the stem so as to keep the trunk between them and the intruder. Only occasionally do they take flight.

They are dark brown in general body colour with ochrous patches on the tegmen, legs pale or dark brown. Ventral surface of the abdomen pale brown. The head bears three horns, the frons being produced into an upward turned horn slightly paler than the downward and inward projecting horns on the vertex closely associated with eyes.

These insects produce a honey dew which attracts the following species of ants. *Iridomyrmex rufoniger* Lowne, a small black species with a strong tapinoma odour. *Iridomyrmex detectus* Sm the mound ant. This is about 8 mm long purplish brown in colour with a red head, strong tapinoma odour and bites savagely. *Iridomyrmex* sp. specific name not known, a pale brown ant the same size as *I. rufoniger* and *Leptomymex* sp. slender ants which carry the gaster turned up over the back of the thorax. Head and thorax red, abdomen purplish brown. Length 7-8 mm.

The presence of *C. tricornis* is often betrayed by the large number of ants farming the honey dew. At no time during this study were these leaf hoppers observed without attendant ants. Attempts to rear the leaf hoppers without the ants failed.



*Iridomyrmex rufoniger*, formidae attending *C. tricornis*  
on *Gr. pteridifolia*.

Quite often where *C. tricornis* are found in great abundance on *Grevillae* spp., a black sooty mould growing on the excess honey dew secreted covers the leaves and stem.

To date *C. tricornis* has been found breeding on the following *Grevillea* spp. in Mareeba. *G. pteridifolia*, *G. parallela*, *G. mimosoides* and *G. glauca*.

Another leaf hopper of the family Membracidae occurs on the tender shoots of *G. pteridifolia*. This insect has a strongly developed pronotum which is produced backwards over the body to conceal the scutellum. Pronotum dark brown, tegmen hyaline, legs brown closely pressed to the body. Ventral surface of abdomen dark brown. Genus and species unknown.

These are active insects occurring singularly as distinct from *C. tricornis*.

## EDGE HILL QUARRY

The rocks of the Edge Hill Quarry are sedimentary and apparently are some of the oldest rocks in the Cairns area.

Radio activity tests of rocks acquired from a wide survey of all Australian land surfaces indicate that there are no rocks on the Eastern part of the Continent that are of greater age than four hundred million years, save the various bodies of rocks represented in the Mount Isa and Broken Hill series. This puts a time limit of that age or less on the Edge Hill Quarry rocks. The finding of a trilobite in those rocks appears to confirm the findings of the radio activity tests, placing them in either the Late Cambrian or early Ordovician geologic eras.

Fossils that can be identified definitely are commonly used by geologists as time-markers in rocks and this has given rise to the whole study of Palaeontology, which amounts to the recognition, classification and placing in their proper age groups those fossils which are more plentiful and easily recognised in given land areas. It is found that throughout the world fossils of a given geologic era are very closely similar, even to being identical in character. Hence a trilobite that occurs in rocks in North Queensland can be accepted as being of the same age as that same kind of trilobite found in England or in America. This finding has greatly simplified the task of the geologist in placing fossil-bearing rocks in their proper ages.

At times a well-known fossil is found in rocks but is very scarce in those rocks in which it is found. This does give rise to technical problems at times but mostly it is found that some simple explanation offers. The scarcity of trilobites in the Edge Hill Quarry is a problem that seems fairly easily answered.

Trilobites were not deep-sea organisms. They preferred what are called the Littoral, or long-shore waters; shallows, tidal reaches. For this reason they are usually found associated with the coarser sediments such as sands and gravels. They did occur where there were boulders and pebbles but these do not seem to have the same protective action toward buried organisms that finer-grained sediments have.

Even the fine-grained sediments are to be graded in a comparative sense. Sands are common along the littoral. They are found in the greatest deeps of the sea but not as a usual thing. Out in those areas the great percentage of the sea-floor sediments is of ooze, a fine-grained sediment that is composed chiefly of silt, the finest of rock dust and detritus that is carried by water. Winter floods carry the rough, unsorted assembly of sediments down the rivers to the sea but, once there, the great body of sea water has a sorting effect and the coarser sediments are deposited at once, the sands and gravels further out. The silts are drifted for many miles out to sea, sometimes being caught in ocean currents and carried to the great deeps. After suspension in the sea for many days they reach the sea floor and form fine-grained sedimentary beds such as those of which the Edge Hill Quarry is composed. It is understandable that any dead organisms that the waters carried along with the sediments are deposited on the sea floor a very long time before the silts sink down there, hence their great scarcity in the fine-grained, deep-water sedimentary beds. Hence the scarcity of fossils at Edge Hill.

In the quarry mentioned the beds are standing up on end. This is a feature common in many of the more ancient rocks and is due to earth movement, the up-raising of mountains, the shearing of great fault movements and the tearing apart of rock formations due to volcanic upheaval.

In Cairns area there has been a vast amount of earth-movement and changes of geologic formation are frequent and what one might term drastic within comparatively small areas. The rock series can, however, be roughly classed into four main movements.

First geologic structures in the area were the sedimentary rocks, of late Cambrian to early Ordovician age. These were thrown into twisted and broken contours by the intrusion of the dark rocks, ferro-magnesian that grade from basalts through a diorite-Andesite complex to Gabbros, according to their average crystal sizes. These rocks were rich in iron, the green, ferrous state predominating, also in lime, magnesia and soda, together with many of the trace elements necessary to plant growth. These rocks decompose to form the rich soils so noticeable in the areas surrounding Cairns.

Following the dark rocks came light-coloured rocks of a granitic complex. These threw both the sedimentary rocks and the dark rocks into a tumbled confusion, crushing them into disorderly masses in which schists and basic gneisses are common. Included in these are rocks of a dark colour that are, further south, given the rough classification of Brisbane Schists.

The granitic complex extruded many heated solutions that passed along the shear and shattered zones of the dark rocks and sedimentary masses. These are visible as quartz veins in many places on the faces of dark rock exposures. These veins in some cases contained gold, wolfram and other valuable materials. Passage of these substances is found to be roughly on a temperature basis, so that the cooler solutions flow further away from their genitive origin, cooling as they go. For this reason the gold and wolfram, both of which emanate at high temperatures, are found commonly to have moved furthest away from the granitic mass that first brought them in. Wolfram usually is deposited as a mineral at a temperature of fifteen to twenty degrees centigrade. Tin, on the other hand, and accompanying tourmaline, tantalite and muscovite, are commonly deposited at a temperature of five hundred degrees centigrade or near it. Hence the rich tin veins are found in the granitic complex rather than removed from it.

The big granite domes found around the North Queensland region are the commonest locations of vein tin and it is from these that the alluvial tin has been removed by erosion and concentrated in the beds of nearby streams and rivers. Hot tin-bearing solutions rise to the tops of the granite domes while they are at great depths in the ground, commonly called Plutonic Depths, and as the great earth-movements grow quiet that first gave rise to the formation of granite domes, the whole system of mineralisation comes to a standstill, leaving the various minor systems of mineralisation undergoing no further change.

The dark rock material that first broke up the Edge Hill sediments has intruded them in various places and these intrusions are still visible in situ though the series has been stood on end, dark rocks and all. They form a very useful key to the age-succession revealed in the quarry.

Following all the previous rock depositions and formations, of course, came the violent upheavals of the volcanoes, of which there are many right along the eastern seaboard of Australia save for the Blue Mountains region of sedimentary rocks. In the areas embracing all the heavy-rainfall regions of Cairns, Mackay and Cooktown, the volcanic movements occurred in the dark rocks most commonly. This has resulted in a lot of the volcanic material retaining the rich, fertile nature of the diorite complex from which volcanic explosions removed it.

## HECTOR, THE SPIDER

Hector, the spider used to spin every night about 7, in the open kitchen window. Each morning the web was gone — he must have had Arab blood in him! We threw him bits of meat about "O" size. First he sat in the middle of his web, gathered up the strands with his feet and shook the whole web quite violently to see if the "intruder" would fall off. Then he would go down and get them. Once I threw a bit of match wood to see what he would do. He went to it and not only got it free of the web but he held it out in space a little before letting it go — I presume to stop it catching again lower down! We learnt that the radiating lines of the web we could gently stroke with a finger tip and not stick to them, but the others were very sticky and could not be played with. We were sad when, one night, a storm swept our pet away.

LORNA HARRISON, Brisbane.

## "THE LOSS OF A TREE"

"As I passed by I looked and saw what YOU had done. You had cut it a foot above the ground. All around lay the chunks of its white flesh, spattered from the axe. It fell so easily. It did not fight back at all. Its pride and majesty were so easily humbled, flung at your feet, a wreckage of broken branches and mangled leaves. Did you see the long shudder before its fall, I wonder? Did you hear the sigh of the leaves, the wrenching cry as it strained, then crashed before you?

"It exists no longer. But all around it, in the earth and in the air, war has been declared against you. The air for your breathing is less sweet than before. The birds have forsaken you, leaving the insect pests and rodents to their work of destruction. The wind will batter you more harshly. The rain will belt the earth more piteously, its fall unbroken by that leafy screen. The unanchored soil will be stolen away by the rivulets of wasted water. — That tree did not fight back, but its friends will fight for it. And long after the needless felling of the tree has been forgotten, their revenge will continue. . . ."

—Lines from an unknown author, contributed by courtesy of the Queensland "Save the Trees Campaign" to the Queensland Forest Service Pamphlet No. 4, "Valuable Queensland Timbers".

"He that planteth a tree is the servant of God; he provideth a kindness for many generations, and faces that he hath not seen shall bless him".

— HENRY VAN DYKE.

## THE BOWER BIRD

Chasing the elusive metal up at Wenlock on the Batavia River in 1940, I camped in a bark humpy built by prospectors a few years previously. As usual, pawpaw trees had been planted, and when I arrived there the tree was loaded with fruit. Near this tree a very large anvil had been set on a large stump — it must have been left there in old bullock wagon times. Here I sharpened my picks and steel, and the two kerosene tins of water for tempering meant 8 gallons of water for the pawpaws every time.

Two Bower birds built a nest close to my hut, and they also had a large bower in a nice sheltered spot. Every working day the bower birds visited my claim at lunch time. Of course I had a pawpaw for my dessert whenever I could, and I always left fruit on the skin for the birds. They were very careful and each time one set off for the nest, it carried three pieces of fruit from the point of the beak back to the throat. I know that, early in breeding, this pair did have three chicks, but I never thought to take a peep when they were taking the three pieces away from my dinner at the claim.

STAN BOYD, Cooktown.