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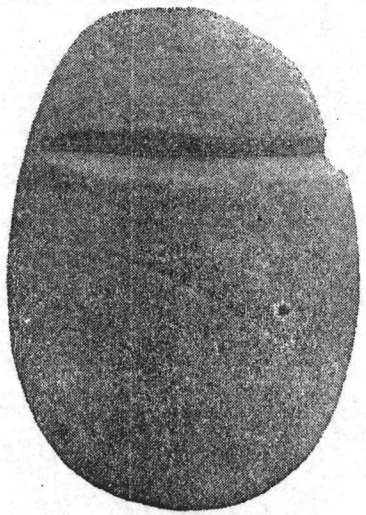
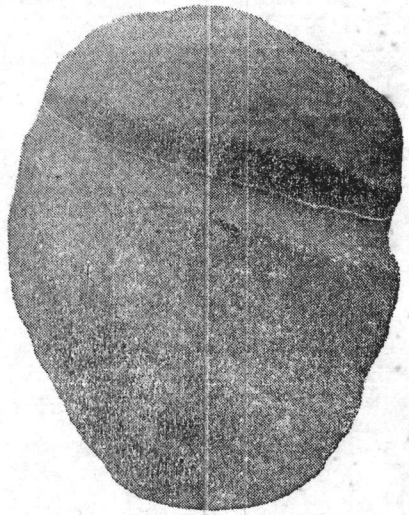
ABORIGINAL GROOVED AXE-HEADS

KEITH KENNEDY
President, Townsville and District Naturalists' Club. Past President, Anthropological Society of N.S.W.





Stone on the left from Cooktown district; that on the right from Townsville Common.

Recently a member of the Townsville and District Naturalists' Club presented me with a grooved form of aboriginal axe-head. It had been given to him by a lady, who supplied the information that it was brought from Cooktown some years ago. A few weeks later another member of the Club gave me a smaller specimen which he found in a shallow depression made by soil getters on the Townsville Common.

Normally the axe-heads made by the Australian aborigines are not grooved, and are wedged into the haft. It is only in certain localities that the grooved kind is found. The reason of the groove is to prevent the head slipping from the hafting, which is formed by bending a strip of split pliable wood around the groove, and binding the ends together for the handle.

Roth (1) mentions grooved axe-heads occurring in North Queensland but does not report them in his Ethnological Studies of North Western Queensland. In New South Wales they are found on the watersheds of the Murray and Darling Rivers, and in Victoria from the western part of that State. A variety with two grooves was collected near Avoca, Victoria, (2) and another from Vilcannia, New South Wales, (3) but this double grooved variety is very rare. The specimen from Cooktown weighs 3 lbs. 3 ozs. Its greatest length is 17 cm. and greatest breadth 12.2 cm. The material it is made of is a greyish igneous rock,

and the whole implement is patinated—a sure sign of age. On one face a flake, 8.4 cm. in length, has been broken off, but so long ago that the scar has also become patinated. The groove, averaging 14 mm. in width and 3 mm. in depth, is located 5.5 cm. from the butt. It almost encircles the head, cutting through the top, but not the lower side, and has been made by the "pecking" process. The cutting edge of the blade is evenly rounded and ground. Superficially this axe-head gives the impression of being made from a water-worn pebble, but a close scrutiny shows that, like the groove, it has been made also by the "pecking" process.

The Townsville specimen weighs 8 ozs., is 9.5 cm. in length, and 7.3 cm. in breadth. Its groove, 3.3 cm. from the butt end, averages 14 mm. in width and 3 mm. in depth, and completely, but obliquely, encircles the head. Like the Cooktown specimen it and its groove have both been made by pecking. One face has been partly broken away, but not enough to damage the ground edge. The stone is very dense and dark, with minute glistening particles, and is probably schistose in character.

Most of the axe-heads found in Australia were made by being first flaked into shape and then smoothed and polished by grinding (rubbing) on sandstone. Sometimes only the cutting edge was ground, and the rest of the implement left in the rough. Often, instead of shaping a stone, a water-worn pebble of suitable dimensions was selected, and ground at one end to make a cutting edge. This grinding process is typical of the Neolithic culture, while flaking only was employed in the older Palaeolithic culture. In the latter process flakes were struck off a piece of siliceous stone and, both the flakes and the parent core having sharp edges, were ready for use, but only certain kinds of stone that would fracture cleanly were suitable for this process.

The pecking process, also Neolithic, requires a different technique to grinding and flaking. Any hard and tough stone can be used, and the shape desired is obtained by striking a numerous succession of short blows with a hammer-stone, causing the part struck to crumble away. By both this and the grinding process the form of the object required can be envisaged in advance, and is therefore under the control of the worker.

The grooved axe is not found on the Pacific Islands, but is distributed over most of North America, where it is also made by the pecking process. Its uneven distribution in Australia where it is often found side by side with the ungrooved form, its absence in the Pacific, and occurrence in North America, is one of the ethnological problems yet to be solved.

REFERENCES.

(1) Roth; North Q'land Enthnography. Bull. 7. Brisbane 1914.
(2) Worsnop; Pre-historic Arts of the Aborigines: p. 109. Adelaide 1907.
(3) Thorpe; Eth. Notes: Rec. Aust. Mus. vol. XVIII: 6. Sydney.

THE NOMENCLATURE OF CALANTHE VERATRIFOLIA R.Br.

By the Rev. H. M. R. RUPP, Northbridge, N.S.W.

In the first volume of his "Orchidaceae," published in 1905, the American orchidologist Oakes Ames rejected Robert Brown's name for this species in favour of **C. furcata** Batem. In Vol. II, published three years later, he abandoned Bateman's name, considering that the plant was identical with **Orchis triplicata** Willem. in Usteri Ann. Bot., vol. 6, St. 18 (1796), 52. Ames had previously expressed this opinion in the Philippine Journal of Science (Bot.) 2 (1907), 326. Thus the plant appears in "Orchidaceae," 11,159, as **Calanthe triplicata** (Willem.) Ames. He gives a number of synonyms, among which is **C. veratrifolia** R. Br.

But in Merrill's "Enumeration of Philippine Plants" (1925), Vol. I, p. 333, the author remarks: "It has been deemed advisable to adopt the name **C. furcata** for the Philippine material, as there is no question as to its identity. As pointed out by J. J. Smith in Merrill, Interp. Rumph. Herb. Amb. (1917), 170, the combination **C. triplicata** Ames is untenable, as **Orchis triplicata** Willem., the name-bringing synonym, is not conspecific. While **C. veratrifolia** R.Br., as to plant and figure described, is probably conspecific with **C. furcata** Batem., it is open to grave doubt, as pointed out by Smith, l.c., whether **Limodorum veratrifolium** Willd. is the same as the plant that Brown figured and described. Should **Limodorum veratrifolium** Willd. be **C. sylvatica** Lindl., as seems probable, the combination **C. veratrifolia** R.Br. would apply to that species."

The question of the correct nomenclature of the plant which we in Australia know as **Calanthe veratrifolia** R.Br., is thus seen to be a complicated and difficult one. I do not know of any later publication on the subject since Merrill's cited above. In Bot. Reg. VII (1821), a note from MSS of R.Br. is published in connection with a figure of **Lissochilus,** in which Brown establishes the genus **Calanthe,** "consisting of **Limodorum veratrifolium** and, judging from Kaempf's figure, **L. striatum** also." In Bot. Reg. IX (1823), two plates (720 A and B) are published of **Calanthe veratrifolia** R.Br., which is identified with Willdenow's **Limodorum veratifolium.** These two fine colour plates unquestionably, in my opinion, represent our Australian plant.

Whether our plant is identical with the Philippine species is another matter. At all events, in view of the uncertainties involved in the question of this nomenclature, I think we shall be well advised in Australia to retain for our plant the long-established and familiar name **C. veratrifolia** R.Br. until it is clearly demonstrated that the rule of priority requires its suppression in favour of some other.

BIRDS OF TOWNSVILLE AND DISTRICT

By H. E. TARR, Melbourne.

In compiling this list of the birds of Townsville and District, I am indebted to Mr. Spencer Hopkins, of Townsville, from whose personal direction I was able to make many observations. Three very interesting observations I made this time up north; the main item being a pair of Little Crows, **Corvus bennetti** at Edge Hill (in the Cairns District) on 30/9/47. The next item was two Greater Frigate Birds, **Fregata minor.** The next was the appearance of flocks of the Torres Strait Pigeon, **Myristicivora spilorrhoa** on the Town Common at Townsville, this being the most southerly record I have made in 15 visits north until three more were noted at Ayr, 16/10/47. A large black bird, which I identified on 4/10/47 as the Red Tailed Black Cockatoo, **Calyptorhynchus banksi** flew from the direction of Magnetic Island and passed over Cape Pellaranda and then over the Town Common. As it passed within 100 yards of me, I am absolutely certain of its identity, but it surely must have lost its way, as like the Little Crow, it is not a seaside dweller. This is not the first seaside record of **C. banksi** as I had daily observations of it flying over Darwin in 1941-2.

In the Town Common at Townsville lies one of the most prolific bird sanctuaries in Australia in respect to both quality and quantity.

The Common Myna, **Acridotheres tristis** is the only introduced bird observed.

The localities from which the following birds have been noted may be listed into five district groups, which are indicated as follows: A. North Ward and Belgian Gardens; B., Armstrong Paddock and Oonoonba Railway; C., Town Common; D., Bayside and adjacent mangrove inlets; E., Magnetic Island; X., Listed at earlier visits.

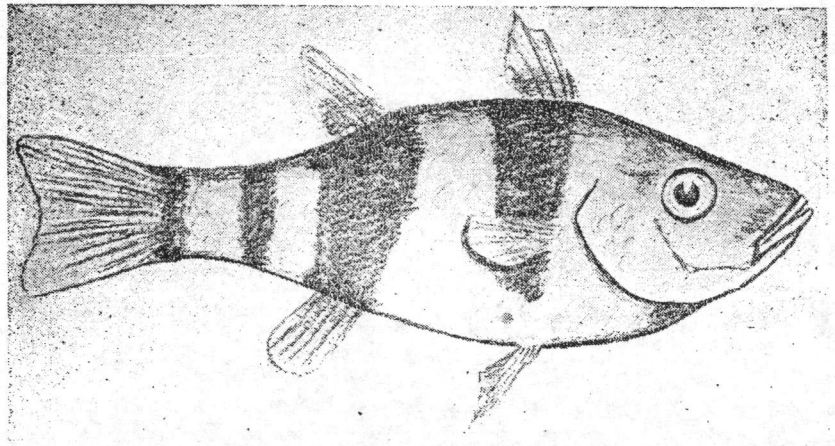
1. Brown Quail, **Synoicus australis.** X. C. 1944.
2. Red Chested Quail, **Turnix pyrrhothorax.** X. B. 1943.
3. Torres Strait Pigeon. **Myristicivora spilorrhoa.** C. Very common, observed in flocks up to 20. My most southern record is Ayr, 16/10/47.
4. Peaceful Dove, **Geopelia placida.** Common, breeding in all districts.

5. Common Bronzewing, **Phaps chalcoptera.** X. B. 1929.
6. Crested Pigeon, **Ocyphaps lophotes.** C. Did not expect to find this here.
7. Dusky Moorhen, **Gallinula tenebrosa.** C. One bird only observed.
8. Eastern Swamphen, **Porphyrio melanotus.** C. In small numbers.
9. Little Grebe, **Podiceps ruficollis,** C. Occasionally.
10. Black Cormorant, **Phalacrocorax carbo.** C. and D. Common.
11. Little Black Cormorant, **Phalacrocorax ater.** C. Occasionally.
12. Pied Cormorant, **Phalacrocorax varius.** B., C. and D. Common.
13. Little Pied Cormorant, **Microcarbo melanoleucus,** C. Occasionally.
14. Brown Gannet, **Sula leucogaster,** D. Only once recorded.
15. Australian Pelican, **Pelecanus conspicillatus,** C. Common.
16. Whiskered Tern, **Chlidonias leucopareia,** C. Occasionally.
17. Gull-billed Tern, **Gelochelidon nilotica,** B. and C. Occasionally.
18. Caspian Tern, **Hydroprogne caspia,** D. Common.
19. Crested Tern, **Sterna bergii,** D. Common.
20. Black-naped Tern, **Sterna sumatrana,** D. Occasional.
21. Bridled Tern, **Sterna anaetheta,** D. Common.
22. Silver Gull, **Larus novae-hollandiae,** D. and E. Common.
23. Sooty Oyster-catcher, **Haematopus unicolor,** E. One record only.
24. Masked Plover, **Lobibyx miles,** B. and C. Very common.
25. Red-capped Dotterel, **Charadrius ruficapillus,** D. Observed nesting.
26. Black-fronted Dotterel, **Charadrius melanops,** B. Odd pairs noted.
27. White-headed Stilt, **Himantopus leucocephalus,** C. One large flock noted.
28. Whimbrel, **Numenius phaeopus,** D. E. Common shore bird.

(To be continued.)

FRESH WATER FISHES OF THE BARRON RIVER.

BRUCE SHIPWAY, Perth, W.A. (Concluded)



KURANDOPOGON BLANCHARDI Whitley

Kurandapogon blanchardi Whitley

Found in the lower reaches of the Barron and Mulgrave Rivers. The body of this perchlet is coloured light green with broad vertical bands of yellowish green. The spinous and soft dorsals are about equal in size and all the fins are carried well extended. It lives amongst dense patches of aquatic plants such as **Elodea** and is a mid-water swimming fish. Information regarding its breeding habits is desired. Owing to its small size, one and a half inches, and its hardiness it should make a good aquarium fish.

Family ELEOTRIDAE.

Carassiops compressus (Ogilby)

Found in the upper and lower reaches of the Barron River. This little gudgeon is noted for its hardiness. It can live in water too foul or stagnant for most others. Its rather drab pale green colour is only relieved by a dark edge on its soft dorsal fin. It is sluggish in habits and prefers to more or less "walk" along the bottom of the streams and water holes in search of food instead of actively swimming. It is often found in dense masses of **Elodea** where it will remain hidden for lengthy periods. It is a valuable destroyer of mosquito larvae but owing to its small appetite cannot cope with a badly mosquito-ridden pool unless it is present in large numbers. Information is desired regarding the breeding habits of this fish but it is probable it may act in the same manner as the **Mogurnda mogurnda adspersus.** Length 4 inches.

Family CYPRINODONTIDAE.

Gambusia affinis holbrookii

(Girard). Mosquito Fish.

The writer has been advised that the above fish has been introduced in the swamps around Cairns. This fish, imported from the Southern States of U.S.A. about 1910, belongs to the viviparous group and drops from 10 to 100 young every four to five weeks. The young reach maturity in about 10 weeks and are able to fend for themselves a few hours after birth. The fish is remarkable mainly in the differences between sexes. The female is about 2½ inches long and usually has a black spot on the body above the anal fin, known as the gravid spot, indicating the presence of the unborn young. The male when mature is about 1½ inches long and is of slimmer build. The anal fin of the male develops into an organ known as the gonopodium. The colour of both male and female is of a pale greenish grey with a faint iridescent blue. The dorsal fin and tail are marked with very small dark spots. Occasionally a fish may be seen with larger black markings, sometimes nearly covering the entire fish. It is a cannibalistic fish, eating its young and that of other fish. It can live in fresh, salt or brackish water. The writer's views on the subject of the introduction of these fish to waters already stocked with indigenous mosquito-eating fish are at variance with the authorities responsible for their release.

THE SCIENTIFIC NAME OF THE DINGO

(By H. Flecker)

Under the above heading, in the Proceedings of the Royal Zoological Society of New South Wales for the year 1946-47, on p. 35, Tom Iredale has shown that according to the usual rules of priority, the name, **Canis antarcticus** Kerr, 1792 must be applied to the dingo. As, however, the dingo is now generally regarded as a variety of the domestic dog, **Canis familiaris** L., the full name should be **Canis familiaris antarcticus** (Kerr), combinatio nova.

NEST BUILDING OF CYRTOSTOMUS FRENATUS

S. E. STEPHENS, President, N.Q. Naturalists' Club.

The yellow-breasted Sunbird, Cyrtostomus frenatus, is a very sociable bird, or perhaps rather one should say has a trusting nature insofar as human beings are concerned. It delights in flitting round a garden extracting nectar from the flowers and catching stray insects. Its nest is frequently built close to human habitation, and favoured sites are under the protection of eaves or on the verandah of a house.

The nest building habits are interesting. Breeding occurs during the summer months—particularly in December and January at Cairns. The breeding pair spend several days inspecting sites. The selection of the site for the nest appears to be a joint undertaking. Some hanging object from which the nest can be suspended is usually sought, and possible spots are carefully inspected from all angles. Both birds repeatedly fly at and hang together on sites under consideration, chattering continuously. The object in this manoeuvre appears to be to test the swing, which would be an important consideration in a pendant nest, and would have some influence on its design. Over a period of several days a site that appears to find favour will be re-inspected between searches for other likely spots. A piece of hanging string or frayed rope is a very frequent choice as it offers a good base for weaving upon. The case of one of the larger species of Bag Moth hanging on a house wall was observed to have been used by one pair during the 1944-1945 season. Occasionally work will be commenced on nest building and the site abandoned after several days work, a possible explanation being that some unfavourable factor, such as too great exposure to wind, has been discovered.

Provided no unforseen hitches occur, building progresses along the following lines:—a large quantity of spider web is brought in and stuck to the foundation over a length of several inches. Pieces of fine dry grass, and threads of bark fibre are worked into and suspended on the webs. Further lengths of spider web and grass are added until the structure is about eighteen inches to two feet long. An area below the centre of the structure is built up in thickness with closely laid pieces of fibre and grass cemented with the spider web. When a sufficient body of material has been accumulated the bird clings to the outside and, with her long bill, pushes the fibres apart to form a hollow with a side entrance. The opening of the centre forms thin patches in the outer walls and these are filled with more fibre. Gradually the hollow is increased in size until it becomes large enough for the bird to squeeze in. She then enters and shuffles violently until the inner walls have spread sufficiently to give ample room. The hollow is next lined with fine fibre composed of dry grass seed stems, pieces of palm fibre, bark fibre, etc. At this stage a projecting hood is built over the nest opening, the fibre lining being extended through the top of the opening to construct it. Concurrently with the internal lining the outer structure is added to and decorated with dead leaves, pieces of paper bark from Melaleuca trees and liberal sprinklings of borer excreta from Acacia trees. The tail which extends below the nesting hollow is added to and decorated plentifully with the same materials held together with spider web. During the decorating process the hood is woven to the outer structure and the ragged ends bound in to make a neat finish and a secure porch roof. The nest is completed with a final lining of downy feathers and soft down from seed pods of Asclepias spp.

Practically all the building work is carried out by the female. The male spends his time in the near vicinity of the female entertaining and encouraging her with song. He makes frequent inspections of the work in company with her, at which times they indulge in animated chattering.

The speed with which the work progresses is indicated by the following time table:—During the week ended 10th January, 1948, inspections were made for a nesting site. The site was selected and building commenced on the 11th; the 12th was wet and very little work was done; on the 15th the centre hollow was opened out; and on the 17th lining of the nest with feathers and Asclepias down was completed.

Dimensions of a typical nest of the Sunbird are:—Overall length 28 inches; from suspension to top of nest bulb 14 inches; nest bulb 6 inches long by 2½ inches side to side and 2¼ inches front to back measurement; tail 8 inches. The nest entrance is 1½ inches high by 1¼ inches wide.

CAIRNS WAR MEMORIAL

Residents of Cairns decided at a public meeting held some time ago that the Memorial should be in the form of a museum. A committee composed of representatives of the local authorities and the prominent public bodies of Cairns is now proceeding with the raising of funds. The Cairns Harbour Board has very generously made available two buildings of the H.M.A.S. Kuranda barracks as temporary Memorial premises so that the Honour Roll may be displayed as soon as it is completed, and to house and display the museum specimens as they are collected. In addition to the Honour Roll which will contain the names of all service men and women it is proposed to provide for memorial plaques to any whose relatives so wish to honour them. The Museum will be a general one to embrace war relics, historical pieces, ethnological, mineral, and the various natural history sections.

As one of the public bodies of Cairns, the North Queensland Naturalists' Club is associated with the movement. The extensive ethnological and natural history collections in the possession of the Club have been transferred to the War Memorial and will form the basis of those particular sections. The herbarium of the Club, which contains many fine sheets from other States as well as a large collection of local flora, will be also incorporated.

Whilst the Memorial will honour the service men and women of the Cairns military district it is anticipated that the museum side of the Memorial will serve as a repository for much valuable material and many interesting specimens from the whole of North Queensland. In this respect its importance extends far beyond the immediate Cairns district and even beyond North Queensland for it is hoped that the institution will become a centre of scientific knowledge concerning North Queensland. To permit the accomplishment of this aim it is necessary that the donors of all material and specimens for the museum should furnish all particulars available regarding their donations. In regard to the ethnological, mineral, and natural history sections, which are the responsibility of the North Queensland Naturalists' Club, notes as to the place and date of finding, details regarding the actual location of the specimen, its relation to surrounding objects, and any other relevant facts, and finally the finder's name, should be forwarded with each specimen.

Specimens with accompanying notes may be sent to the president of the Club (Mr. S. E. Stephens, C/- Dept. of Agriculture, Cairns) or its secretary (Mr. J. Wyer, C/- Harbour Board, Cairns). Botanical speciments may be addressed to Dr. H. Flecker, Abbott St., Cairns.

MAGNETIC ISLAND

Field Day of the Townsville and District Naturalists' Club,

held 16th November, 1947.

By KEITH KENNEDY

The November Field Day of the Townsville and District Naturalists' Club was an excursion to Nellie Bay, Magnetic Island.

Our party landed at Picnic Bay and walked the rocky track to Nellie Bay, which lies in the next valley. Here we made our headquarters for the day.

The bulk of Magnetic Island is covered with "dry forest" and on the Nellie Bay side only at an elevation halfway up Mt. Cook, the highest peak on the island, does one encounter vegetation which requires moist conditions. Mt. Cook reaches a height of 1628 feet and from Nellie Bay can be seen on

its side a patch of darker forest sprinkled with numerous light lines denoting the stems of palms. Some of us decided to make this palm forest our objective, so taking a track which leads into the valley, we walked on until the valley gradually got narrow and ended near a small farm. Cutting across the farm we entered a dry water course and commenced the climb. A few wallabies hopped away and we saw several monitors (goannas). On the bank of the watercourse were seen a number of small holes in the ground which aroused some speculation as to their cause. The mystery was solved by Mr. F. Breuer who observed a large goanna busily digging away evidently searching for grubs or some other form of food. In places grew a few stinging trees (**Laportea moroides**) called by the blacks "gimpie"—some of these we destroyed. Then we saw some Torres Strait pigeons, a bird often found where palms grow. The slope grew steeper and at last we reached the palm forest. The palms were a species of **Archontophoenix** and around their bases grew many ferns, those observed being **Nephrolepis exaltata, Drynaria sparsisora, Dryopteris nymphalis, Davallia denticulata, Pteris tremula, Adiantum hispidulum** and **A. aethiopicum.**

FIELD EXCURSION

18th January, 1948: Miller's Beach. Attendance 26.

Perfect weather favoured the excursion, which was made by twenty-four adult and several junior members. The autumn-tinted foliage of the Milky Mangrove, Excaecaria Agallocha, attracted the attention to a small creek nearby, from which several varieties of water beetles were collected. A number of small fish were noted in the isolated pools in the creek-bed, for the creek had already stopped flowing, although the rain had ceased only a few days before. Insect life was scarce along the banks of the creek, most of it having been flooded out by storm-water.

The male and female flowers of the Milky Mangrove are borne by separate trees, and develop while the trees shed their leaves. The sap of this tree is extremely irritating to the skin and eyes, and it should therefore be handled with caution.

A number of the beautiful Jewel Beetles were collected from the foliage of the young Wattles near the road, and it was there that a small caterpillar was observed carrying about twenty cocoons of some parasitic insect (probably a wasp) in the fur of its back.

Following afternoon tea on the beach at 3.30, the day's collection of specimens was displayed and discussed, and a quick run home through the canefields in the glow of the late afternoon concluded a very pleasant day.—A. P. Watkins.

NORTH QUEENSLAND NATURALISTS' CLUB

Meets at School of Arts, Shields Street, Cairns.

usually on second Tuesday in each month, at 8 p.m.

NEXT MEETING, TUESDAY, 9th MARCH, 1948.

MEETINGS

9th December, 1947: Lecture by H. Pottinger, Member Queensland Entomological Society. "Collecting in Cape York Peninsula."

12th January, 1948: Paper by K. Kennedy, President Townsville and District Naturalists' Club. "Aboriginal Grooved Axe-heads."

10th February: Members' Night. General discussion on exhibits.

NEW MEMBERS ELECTED

9th December: Mrs. E. M. Wham, Severin St., Cairns; Master G. W. Wham, Severin St., Cairns (Junior); Miss A. V. Strelnikoff, 154 Sheridan St., Cairns; Mr. N. Gore, Wasua, Fly River, Papua.

12th January: Mr. C. W. Elliott, Atherton; Mr. T. W. Elliott, Innisfail; Mr. C. J. Baker, 229 Abbott St., Cairns.

10th February: Mr. and Mrs. J. Barkus, Walsh St., Edge Hill; Mr. and Mrs. J. Killoran, Friend St., Edge Hill; Miss V. Beaman, Stratford (Junior).