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# THE NORTH QUEENSLAND NATURALIST



**CAIRNS**

**Journal of  
NORTH QUEENSLAND NATURALIST CLUB**

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

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## 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 Sunday prior to meeting.

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

**LIBRARY** open each Club Night and by arrangement with Librarian.

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City and Suburban Members, £1/5/-.

Country Members, 15/-.

Junior Members, 5/-.

## ... SOUTHERN VOYAGE ...

Apart from the fall in temperature, which was now well below freezing point, the first real indication of our proximity to the great Antarctic Continent, was the presence of scattered ice floes.

These small floes, heavily eroded, were the remnants of the huge ice sheet which covered the sea during the previous winter and spring and were now rapidly ablating in the summer sun as they drifted northwards. Each year this field of winter sea-ice, up to six feet in thickness and stretching for about 400 miles from the shore, breaks up under the influence of the summer weather, the wind and tide, to form in some cases large areas of scattered floes and in other cases vast fields of compressed pack ice. The floes which drift northwards ablate away but much of the pack becomes refrozen into the sea-ice of the following winter.

At first this vast expanse of ice flecked ocean, cold and silent, appeared devoid of all life but as we ploughed further southwards, small groups of Adelie Penguins were seen, their black plumage standing out clearly against the snow covered platforms of floating ice. Only those close to the ship, their curiosity overcome by fear, dived into the sea, while those a hundred or more yards away stood their ground, even when our bow wave sent their floating islands bobbing up and down.

Ocasionaly a seal was seen basking on a floe, and awakened by our approach would gaze incredulously at the red monster gliding past and then with a mighty heave, dive for the safety of the ocean.

We had seen our first berg at Latitude 55.9 degrees south, wallowing in the heavy swell and sending great plumes of spray high into the air. These were small bergs at first, compared to the monsters, several miles in length, which we encountered further south, making it necessary to change course frequently in order to avoid them.

Sometimes we sailed quite close to one, it's ponderous blue and white bulk gleaming in the weak sunlight, silent and menacing.

As they drift northwards into warmer and rougher water the bergs ablate and disintegrate fairly rapidly and seldom do they endanger shipping as they do in the northern hemisphere where ocean currents carry them southwards into the busy trade routes. Here we were deliberately penetrating their domain where an efficient radar, careful navigation and an ever watchful eye were required twenty four hours a day to ensure our safety.

A spectacular sight indeed is a huge berg, miles in length and hundreds of feet high, ploughing through the pack ice and shattering it to fragments, powered by the unseen force of an ocean current against it's under-water bulk.

As the bergs became more numerous and the ice pack thicker, the Captain, from his eyrie on the foremast, guided the ship through the clear water "leads", changing course often and sometimes going astern to charge forward again with increased power when the "leads" closed in.

Ice floes twenty and thirty feet across were pushed aside, their blue-white edges red stained from the ship's paint work, while many of the smaller ones rolled completely over exposing their honeycombed bases of rotten ice, tinted a salmon pink from algae.

As with geographical features on land, ice bergs have several distinctive forms and are typed according to their shapes. The commonest type is the Tabular berg, others noted falling into the classification of Valley or Drydock, Pinnacled, Arched and Domed.

Truely, nature's ice sculpture was beautiful to behold.

Also the various distinctive forms of sea-ice were noted. Rafted Ice, where one floe had been pushed upwards to partly overlap another, Flat, Hummocky and Pancake Ice, Frazil where the water was thick with tiny ice crystals, Brash which consisted of thickly packed broken pieces and Rotten Ice which was dark and water saturated.

In accordance with the scientific purpose of our mission, the presence of all marine and bird life was noted and special logs were kept for this purpose.

With the assistance of many amateur bird watchers our ornithologist was kept busy identifying and recording the sightings of each species.

Albatrosses were our constant companions, one or two Wandering Albatrosses remaining in the vicinity of the ship until we were well into the pack ice.

The Albatross family (Diomedea) includes some of the largest flying birds, the Wandering and Royal both having wing spans of about twelve feet with a recorded maximum of seventeen feet.

Although each individual species is not easily recognised by the amateur, the family in general is characterised by their long narrow wings, black backs and tails, large hooked beaks and their gliding method of flight. Of the thirteen known species, nine plus four sub-species inhabit the Southern Ocean.

In the cold world of sea ice and berg we saw many snow petrels the first sighting being made at 61.0 degrees south. This beautiful snow white bird about the size of a pigeon which it closely resembles was the subject of a detailed study during the nesting season at Mawson Base.

Skuas, merciless predators of the southern waters were fairly numerous.

Other species of petrel which comprise a very large family of sea birds include the Giant Petrel which is the size of an Albatross and the tiny Storm Petrel which is smaller than a swallow. Many-hundreds of these fast flying tiny birds were seen.

Of the several species of penguin which inhabit the Antarctic and sub-Antarctic regions the Adelies were the only ones noted during the southern voyage. These cheeky, comical little fellows in keeping with the attitude of other kinds of wild life, have little fear of man which renders them excellent subjects for close study.

Although their progress on land is somewhat slow and rather ungainly, their swimming prowess is truly remarkable. When "hove to" in some open water close to the mainland we witnessed a display of "Porpoising" by thousands of these birds. As the name suggests this consists of breaking water in a series of dives executed at high speed and with thousands of birds in close formation engaged in this sport, the water is whipped up as though by a large school of fish. Seen from the deck of the ship in clear water the Adelies underwater "flight" is almost too fast for the eye to follow.

A school of six porpoises was seen at 55.0 degrees south but it was not until we had reached a point 61 degrees 42 minutes south and 99 degrees 22 minutes east that our first whale sightings were made. Three whales of an unidentified species were seen at a distance of a mile or so and from this point onwards, whale sightings were an almost everyday occurrence.

Blue whales, characterised by their single vapour plume when "blowing" were possibly the commonest of the larger species and the smaller Sei Whales with their characteristic tall, shark like dorsal fin were often seen. They were possibly in the vicinity of twenty five feet in length, not a great deal larger than the shark finned Killers which were seen right alongside the ship in schools of half a dozen or so when we were anchored in calm off-shore water.

Unlike the plankton-eating Blue and Humpback whales the predatory Killers prey on the larger forms of life including their own cousins, the larger whales which they viciously attack in order to obtain the choicest morsel, the tongue. Seals and penguins are also main items of the Killer's menu.

A killer whale in order to catch a seal will dislodge it from an ice floe and they have been known to break through a large sheet of sea-ice to capture a basking seal which they can see through the translucent ice above. Men have had narrow escapes when attacked in this manner.

Our voyage of fourteen days across the storm tossed Southern Ocean, the "roughest ocean in the World" and through the icy berg strewn Antarctic seas, brought us to the gleaming ice cliffs of the Antarctic Continent near the Russian Base of Mirny where we landed.

G. MASLEN.

## SIPHONOPHORES

## PART 2 OF A SERIES

(Part 1 of this series, dealing with siphonophores in general, and *Physalia* in particular, appeared in *The North Queensland Naturalist*, Vol. 30, No. 131.)

All Siphonophora are colonial, and characteristically show an admixture of medusoid and polypoid members (zooids), some of which are greatly modified to serve specific functions. Broadly speaking, zooids of medusoid origin are concerned with locomotion and reproduction, while polypoidal derivatives protect the colony and attend to the capture and ingestion of food. For each type of colony, the basic pattern of organisation remains unchanged from generation to generation — in other words, each colony functions as an entity, and reproduces as a distinctive and recognisable formation.

Another characteristic of siphonophores is that they are adapted to move within their watery environment. Those belonging to the suborder Calycophora rely entirely on "swimming bells" (nectophores) for propulsion. The remainder, grouped as the suborder Physophoridae, have some form of apical float, which provides buoyancy.

The Physophoridae are divisible into three groups:—

1. Physonectae (e.g. *Agalma*, *Nectalia*), which have a small closed buoyancy chamber, usually augmented by swimming bells.
2. Rhizophysaliae, having a large hollow float and no swimming bells (*Physalia*, illustrated in Part 1 of this series, is representative of this group), and
3. Chondrophorae, in which the air chambers are modified into flattened discs, and stiffened by chitinous material (e.g. *Porpita* and *Velella*).

## VELELLA.

*Velella* (sometimes called "Purple Sail" or "By the Wind Sailor") is common in warm seas, and like *Physalia*, may form dense fleets in mid-ocean, or be stranded in thousands by onshore winds. The name means "little sail", referring to the most obvious and distinctive feature of this siphonophore, illustrated in Figure 1. The curved flexible sail forms an effective aerodynamic surface, exerting a propulsive force along the length of the float. I have observed *Velella* sailing at over two knots in a barely perceptible breeze. As the marginal tentacles are capable of co-ordinated movement, and must exert considerable underwater resistance, the colony may have some degree of control over its rate of progress, and its course relative to the wind. In addition, the free margin of the sail appears to contain muscle fibres, and the contraction of these could alter the curvature, and therefore the efficiency, of the sail.

All exposed surfaces of *Velella* are water-repellant, quickly shedding spray and splash. This ability, together with the broad beam, and the pliability of the skirting membrane, makes *Velella* a very dry and seaworthy little ship.

On the underside of the disc, at its mid-point, is a large polypoidal zooid, the only member of the colony exclusively devoted to the ingestion of food. The large mouth of this central gastrozooid (Figure 2, A) opens freely into a distensible tube, running lengthwise beneath the dark central mass ("liver"). Around this T-shaped structure, the main "mouth" and "stomach" of the colony, is arrayed a series of secondary gastrozooids (Figure 2, C), provided with functional mouths, and sizable cavities; but these also give rise, near their bases, to clumps of reproductive members (Figure 2, G), and for this reason these polypoidal derivatives are usually referred to as gonozooids. Towards the periphery, the gonozooids show smaller cavities and greater length (Figure 2, F), and the mouth openings decrease in size. The free ends of all these polyps bear clumps of nematocysts, and the longer polyps near the periphery are probably mainly protective in function.

Figure 1

1 CM

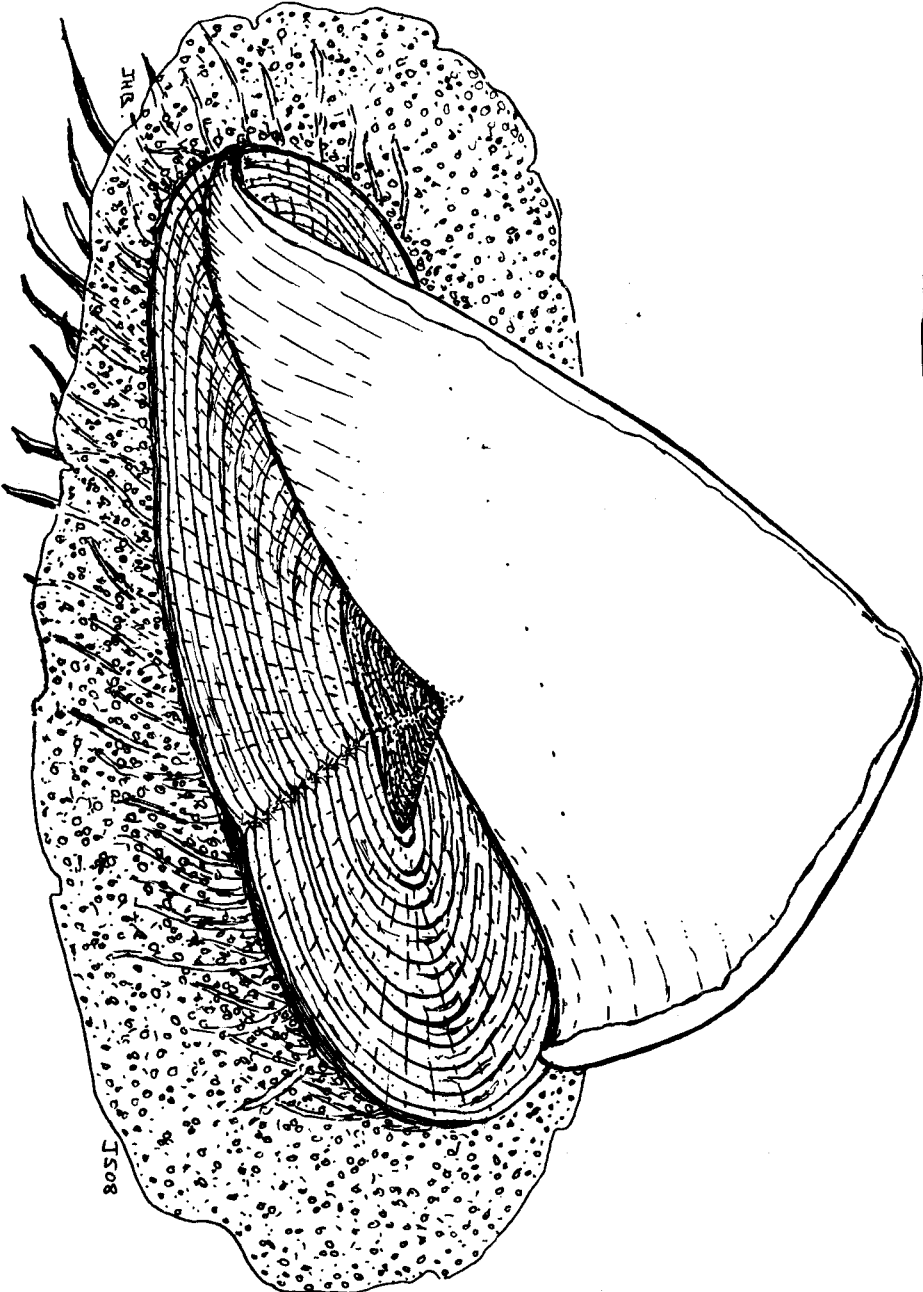
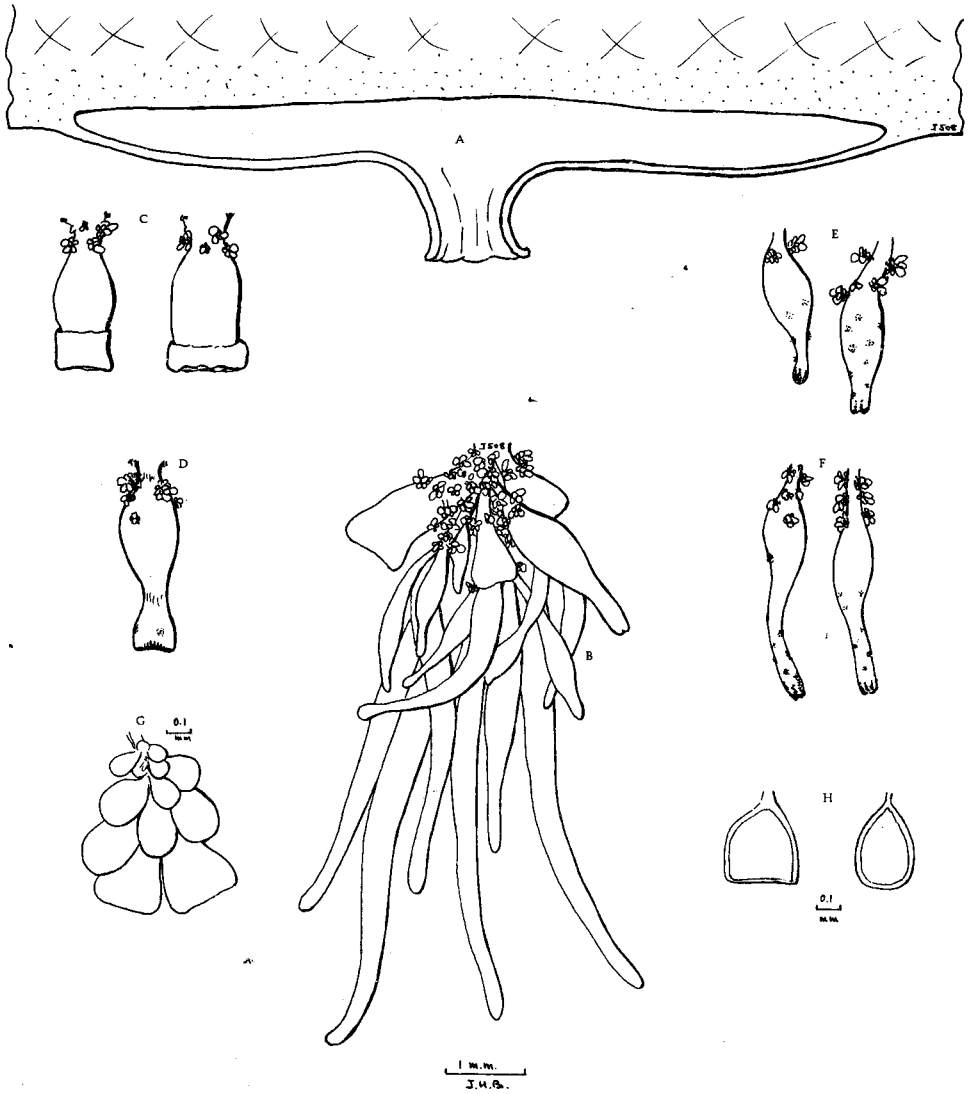


Figure 2



Further out again, where the stiffened disc gives origin to the skirting membrane, is a pallisade of long tapering finger-like processes (Figure 2, B), forming a complete circle around the feeding and reproductive members. These are the tentaculozooids—a further specialisation of the polypoidal form, showing no mouth, and only a narrow cavity, but heavily armed with nematocysts. Although usually regarded as defensive elements, these tentaculozooids play an important role in the trapping of food. At rest, in calm water, *Velella* spreads its tentaculozooids like the spokes of a wheel, periodically sweeping them downward and inward towards the gastrozooids.

Like many other siphonophores, *Velella* is sensitive to rough handling and chemical irritation. The usual response is a casting off of tentaculozooids.

Despite the vast number of nematocysts located on the undersurface of the disc, this siphonophore can be handled with impunity. When closely observed, *Velella* is an object of great beauty. The grace of the translucent sail, the deep purple of the central zone, the iridescent silver of the concentric rings, and the finely patterned greenish skirt, will impress the most phlegmatic observer.

Specimens appear on local beaches at intervals throughout the year, but are most numerous during summer months, after easterly or north-easterly winds. At such times *Velella* is often accompanied by the two other common floating siphonophores, *Physalia* and *Porpita*.

Note to collectors: All *Velella* collected by me in the Cairns area have conformed with the configuration shown in Figure 1. However, a beautiful illustration in Dakin's "Australian Seashores" (1952) shows a reversed arrangement of the disc and sail. Mirror-image forms of *Physalia* (see Siphonophores, Part 1) occur in this area, and the same may be true for *Velella*.

J. H. BARNES.

#### LEGENDS.

Fig. 1. *Velella* from life (Specimen J508, collected at Bells' Beach on 7. VII. 1960).

Fig. 2. Zooids of *Velella*, from the specimen shown in Figure 1, after formalin preservation

- A. Longitudinal section through the central gastrozooid, showing the large mouth and the fore-and-aft extension of the cavity (coelenteron), of this major feeding polyp.
- B. Zooids on a strip torn radially from the under surface of the disc, illustrating progressive modification in shape and length of polyps at increasing distances from the centre.
- C. Typical zooids from the central zone, beneath the "liver". The functional mouths and dilated cavities would qualify these polyps as gastrozooids, but because they give rise to reproductive elements (gonophores) they are classified as gonozooids.
- D, E, F. Gonozooids, representing the changing forms seen between central and peripheral zones. In the intermediate zone the polyps are longer, and have smaller mouth openings. Further out, the gonozooids are considerably lengthened, and are probably mainly protective in function (i.e. the outer zooids are approaching the category of dactylozooids). The outermost members, seen as greatly elongated structures in B, are frank dactylozooids, having neither mouth nor gonophores; because of their tentacle-like form and function, they are referred to as tentaculozooids.
- G. A cluster of gonophores, considerably magnified.
- H. Gonophores maturing towards the medusoid form. When fully developed, the gonophores of the Chondrophorae are freed as minute medusae.



## WADERS OF CAIRNS ESPLANADE

BY JACK WHEELER.

The purpose of this paper is to record and indicate the wealth of wader observations that can be carried out with extreme ease along the foreshore or esplanade at Cairns.

During brief visits to Cairns in 1952, 1953, 1954, 1957 and 1961, daily counts were made by two observers, Roy Wheeler (WRW) and Jack Wheeler (JRW), along 1½ miles of the Cairns esplanade, extending northwards from the city proper to the belt of mangroves beyond the Cairns Hospital.

Space does not permit a full detailed listing of daily counts, but the accompanying chart lists the best total on any one day during a period, and the larger totals are of course the nearest possible approximate numbers.

Some wader migrants winter in Australia (non breeding birds) but by the breeding plumage noticed on many of the birds along Cairns foreshore, it is apparent that September and October are probably the best months for observing.

The tidal flats along the Cairns esplanade consist of reasonably deep mud with scouring channels, and the best observing was carried out when the incoming tide was between half and three quarters flood.

Birds listed are as follows :—

- Arenaria-interpres.** (Turnstone). Seasonal migrant. Not regularly observed. Best total 12 birds September 15th, 1952.
- Lobibyx-miles.** (Masked Plover). Local species. Frequents more inland waters. Common on foreshore during dry season of 1961.
- Pluvialis-squatarola.** (Grey Plover). Rare migrant. Observed once only September 12th, 1954. L. Amiet lists three for Cairns.
- Pluvialis-dominica.** (Pacific Golden Plover). Regular migrant. Usually observed in small parties.
- Charadrius-mongolus.** (Mongolian Sand Dotterel). Regular migrant. Usually in small flocks.
- Charadrius-alexandrinus.** (Red-capped Dotterel). Local species. Favours Coastal areas but does occur at times well inland.
- Charadrius-melanops.** (Black-fronted Dotterel). Resident species. Favours inland waters but dry periods will drive them coastwards.
- Himantopus-leucocephalus.** (White-headed Stilt). Indigenous species. Favours inland waters but very nomadic during dry seasons, as in 1961.
- Numenius-madagascariensis.** (Eastern Curlew). Seasonal migrant. Small numbers noted and not as plentiful up north as the Whimbrel.
- Numenius-phaeopus.** (Whimbrel). Seasonal migrant. Always present. Largest flock was 125 on evening of September 6th, 1961, and just prior to dusk moved seawards in a south easterly direction.
- Numenius-minutus.** (Little Whimbrel). A rare migrant. 2 birds noted close inshore September 4th, 1961. Slightly larger than Greenshank. L. Amiet recorded 2 birds on foreshore November 1st, 1954. Few sightings only for Northern Queensland.
- Limosa-limosa.** (Black-tailed Godwit). Never very common. Seasonal migrant and can be easily overlooked when associating with Bar-tailed Godwits.
- Limosa-lapponica.** (Bar-tailed Godwit). Common seasonal migrant and noted during all visits.
- Heteroscelus-brevipes.** (Grey-tailed (Asiatic) Tattler). Seasonal migrant and was seen on most visits. In eclipse plumage it very closely resembles the Wandering Tattler which is a rare visitor.
- Actitis-hypoleucos.** (Common Sandpiper). A rare visitor to Cairns. Sighted once September 6th, 1961, close inshore near mangroves, north of Hospital. L. Amiet has sightings for Cairns.
- Tringa-nebularia.** (Greenshank). Regular visitor in small numbers. Does not appear to be as common as down south.

- Tringa cinerea*. (Terek Sandpiper). Regular migrant. Small numbers only.  
*Calidris ferruginea*. (Curlew Sandpiper). Seasonal migrant. Not seen on all visits. More common in southern Australia.  
*Calidris ruficollis*. (Red-necked (Little) Stint). Common migrant and regularly observed.  
*Calidris accuminata*. (Sharp-tailed Sandpiper). Common migrant and was regularly observed.  
*Calidris canutus*. (Lesser Knot). Seasonal migrant. Not regularly observed. Best flock of 23 birds near Hospital September 9th, 1961. L. Amiet has recorded sightings at Cairns.  
*Calidris tenuirostris*. (Greater Knot). Rare migrant. 3 birds near Hospital September 8th, 1961. Size and plumage most distinctive. L. Amiet has sightings for Cairns.  
*Limicola falcinellus*. (Broad-billed Sandpiper). Probably the rarest of waders to visit Cairns. 3 birds noted September 30th, 1954, and 1 bird October 4th, 1957. L. Amiet also has a single sighting of this specie for Cairns. Reference of other waders listed by other observers for Cairns district —

- |                             |  |                                   |
|-----------------------------|--|-----------------------------------|
| Oriental Dotterel.          | }                                      | L. Amiet, "Emu", Vol 57, Page 236 |
| Large Sand Dotterel.        |  |                                   |
| Marsh Sandpiper.            |  |                                   |
| Southern Stone Curlew.      |  |                                   |
| Beach Stone Curlew.         |  |                                   |
| Double-banded Dotterel..... | J. Liddy, Aust. Bird Watcher, Part. 3. |                                   |

ACKNOWLEDGEMENT —

World Bird Lists published by Bird Observers Club of Victoria, and Personal Observations and Notes provided by Roy Wheeler.

Observer.	WRW	JRW	WRW	WRW	JRW	JRW
	DATES.					
	1952 Sept. 8-15th	1953 Sept. 13-16th	1954 Sept. 8 to Oct. 2	1957 Oct. 2-6th	1961 Aug. 11th	1961 Sept. 3-9th
SPECIES.						
Turnstone	12		8	11		2
Masked Plover			5	4		15
Grey Plover			1	1		
Pacific Golden Plover	12	5	40	20		12
Mongolian Sand Dotterel	50	50	72	50		12
Red-capped Dotterel	20	18	10	1		5
Black-fronted Dotterel	4					8
White-headed Stilt				12	6	13
Eastern Curlew	10	5	14	20	1	8
Whimbrel	30	26	27	6		125
Little Whimbrel						2
Black-tailed Godwit	1	3		8		10
Bar-tailed Godwit	50	32	30	60	8	25
Grey-tailed Tattler	2	2	16	20		45
Common Sandpiper						1
Greenshank	2		14	2		8
Terek Sandpiper	1	4	16	4		8
Curlew Sandpiper	4		6	40		50
Red-necked (Little) Stint	50	300	110	400		200
Sharp-tailed Sandpiper	300	500	40	200	50	250
Lesser Knot	1			1		23
Greater Knot						3
Broad Billed Sandpiper			3	1		

## EDITORIAL

It has been decided to revise the Orchid Check List as the present one is very much out of date. Mr. Alick Dockrill is now undertaking this arduous work and we hope to have it published in the next two or three months. It will probably cost quite a bit more than the old one but I am sure those buying it will find the money well spent.

Field Days have not been attended very well. This is a great pity as a good Field Day enables the members to help each other, discuss their interests, meet Country Members and take an interest in fields other than their own. The Field days are being held on the Sunday preceding the meeting and the venue and date are always published in the Cairns Post under the report of the meeting. It is hoped that more Town and Country members will take part in future.

Juniors — the Show is nearly upon us and that is the time for the Flecker Memorial Medallion Essays competition. Most years this has been very poorly patronised and I hope that this year all juniors will try and have a go. The competition is open to all juniors under 20 years of age and they need not be members of the Naturalists Club. This year two more prizes are being offered, so come along Juniors and send your entries in.

A parcel of sundews was sent to Meerut College, Meerut, India to enable a student to complete her studies. We are also endeavouring to collect Finger Cherries to send down to Defence Standard Laboratories in Victoria for research work.



## OBITUARY

### Mr. Berkley Hamilton Cook.

The North Queensland Naturalists Club, with other organisations, was very unfortunate in losing a member of such high calibre as Berkley Cook, who passed away at Cairns on Anzac Day.

Berkley had been a member of the Club for many years and was always willing to assist at all times in any way possible. He did a magnificent job over the years, catching and milking taipans and sending the venom to the Commonwealth Serum Laboratories where it was manufactured into anti-venene. The lives of many people bitten by taipans have been saved by this anti-venene.

He was always available at any hour of the day or night to go and catch snakes found in houses or gardens and to help Doctors and the hospital with the identification of snakes in case of snake bite.

His familiar face will be missed from the various Shows and Rodeos in the North where he was always willing to exhibit his "Snakes Alive" Show for the benefit of the Q.A.T.B.

Not only the North Queensland Naturalists Club will be the poorer in losing such a competent member as Berkley; but he will be missed by the community as a whole.

He was a returned Air Force member, having attained the rank of Flight Lieutenant.

To his sorrowing widow and relatives we extend our deepest sympathy in their sad loss and feel that although he has departed, his spirit and good work will live on.

Vincent Reilly, President.



**WANTED! WANTED! WANTED!** "Butterflies of Australia" by Waterhouse and "What Butterfly is That?" also by Waterhouse. Anyone who has either of these two books and wishes to sell please get in touch with Mr. E. Little, 52 Anderson St., Werribee, Victoria.

