



NEWSLETTER: MARCH 2019

Heather Ducat Norfolk Island

Heather visited the Island with her husband a few years ago. The Island is about 8 x 5 kilometres, and has only one town, Burnt Pine. The topography consists of a system of ridges radiating from a central high point, with a plateau about 90 to 100 metres high. The coastline is almost entirely cliffed, with very few beaches. There is one area of coastal lowland, which is where the convict settlement was established. Nepean Island, Phillip Island and Rocky Islets, off the north coast, are included in the Norfolk Group, Norfolk and Phillip Islands being volcanic, part of the Norfolk Ridge that extends from New Zealand to New Caledonia. Volcanic activity ceased about 2.2 million years ago.



North Coast Cliffs.

All Photos by Heather Ducat

During the volcanic period there were 9 or so lava flows, resulting in mostly basalt rock layered with ash deposits. Basalt columns can be seen on the north coast, while pillow lava - resulting from lava flows under the water - are found on the west coast. Nepean Island is not volcanic but composed of calcarenite formed from wind-blown sand.

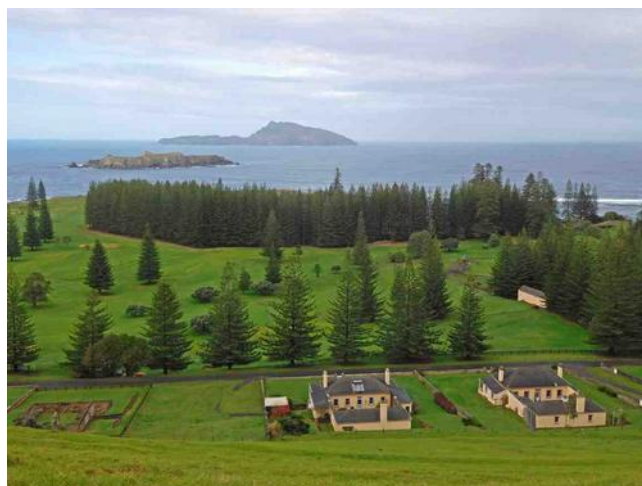


Basalt Columns



Gaol Gate, Kingston

About 18% of the Island is National Park, managed by the Australian Government, with a number of smaller reserves, including a Botanic Gardens, managed by the local government. Before human settlement the vegetation consisted of sub-tropical rainforest. About one-third of the vegetation is of New Zealand origin, with 180 or so native plant species, 43 being endemic. This number compares with 377 introduced plant species. The most famous plant is of course the Norfolk Island Pine (*Araucaria heterophylla*). A strong garlic odour is emitted by a tree called Sharkwood (*Dysoxylum bijugum*). There are a number of endemic ferns, as well as some familiar species such as the Bird's-nest Fern (*Asplenium australasicum*). The Phillip Island hibiscus *Hibiscus insularis* is endemic to that island.



Officers Quarters, Kingston

Norfolk Island has 23 resident bird species, seven being endemic, 12 introduced species and about 60 seasonal visitors. Heather spotted the local Grey Fantail and Golden Whistler, which are distinct from the Australian species, and also the Norfolk Robin, which is similar to our Red-capped Robin.

Human history is known to extend back to about 1100 A.D.; stone tools dating from this period have been found, indicating visits from Polynesians - also indicated by the presence of Polynesian rats and banana plants. James Cook is credited with European discovery in 1774. A convict colony was established in 1788 and lasted until 1814; a second convict colony lasted from 1825 to 1855. Some Pitcairn islanders, descendants of the Bounty mutineers, arrived in 1856. Norfolk Island is 1370 km from Australia, at about the latitude of Coffs Harbour, and 770 km from New Zealand. — **Lee Denis**

In the sea underworld - Mushroom Reef 16th February

Our group, numbering solid nine members (three of group were fully equipped for snorkelling), arrived four hours before low tide. We had nice weather and enough time to explore along the beach and under the cliffs. Finally, when low tide arrived, we started turning the rocks in crystal clear water-pools. We were searching for aquatic wildlife and taking photos of this magical underwater world.

The sheltered areas of sub-tidal soft sediments are home to seagrasses. The intertidal basalt reef is home to algae, restricted to rock pools that occur in low densities. Our group saw and photographed a good number of sea creatures, such as algae, seagrasses and seaweed, gastropods, chitons, starfish and others. Most of them are on the following list, with photographs of some also included.

Although the snorkelers did not manage to see any sea dragons or seahorses, which was their original goal, they were nevertheless very happy with the exotic reef underworld they had observed down there.

Algae / Seagrasses / Seaweed (Family):

- Red bubble algae - Botryocladia browni (Rhodimeniaceae)
- Bull kelp - Durvillaea potatorum (Durvillaeaceae)
- Neptune's necklace - Hormosira banksii (Hormosiraceae)
- Codium pomoides (Codiaceae)
- Caulerpa brownii (Caulerpaceae)
- Padina fraseri (Dictyotaceae)
- Sea lettuce - Ulva (Ulvacaeae)
- Valonia ventricose (Valoniaceae)
- Codium duthiae (Codiaceae)
- Rocky red algae Corallina (Corallinaceae)
- Kelp sea-weed - Ecklonia radiate (Lessoniaceae)



Botryocladia browni



Padina fraseri

Gastropoda (Family):

- Air-breathing limpet - Siphonaria diemenensis (Siphonariidae)
- Ribbon monodonta - Austrocochlea constricta (Trochidae)
- Alaba monile (Litopidae)
- White rock shell - Dicathais orbita (Muricidae)
- Cone snails - Conus (Conidae)
- Tulip snail with eggs – Australaria coronata (Fascioliariidae)
- Elephant snail - Scutus antipodes (Fissurellidae)

- Keyhole limpet – Amblychilepas (Fissurellidae)
- Spotted cominella - Cominella lineolata (Buccinidae)
- Diala suturalis (Dialidae)
- Black nerita - Nerita atramentosa (Neritidae)
- Banded periwinkle - Austrolittorina unifaciata (Littotinidae)
- True limpet - Patelloida alticostata (Lottiidae)



Scutus antipodes

Chitons (Family):

- Ischnochiton cariosus (Ischnochitonidae)
- Ischnochiton versicolor (Ischnochitonidae)
- Chiton glaucus (Chitonidae)

Starfish (Family):

- Seven-armed starfish - Astrostole scabra (Asteridae)
- Meridiastra gunnii (Asterinidae)
- Tosia australis (Goniasteridae)



Meridiastra gunnii

Other:

- Sponges & corals
- Branacle – Chamaesipho tasmanica (Chthamalidae)
- Hermit crab - Paguristes frontalis (Diogenidae)
- Waratah anemone - Actinia tenebrosa (Actiniidae)
- Annelid worm - Salmacina australis (Serpulidae)
- Smooth toadfish - Teractenos glaber (Teraodontidae)

The mushroom shaped basalt reef on Flinders Ocean Beach

was formed from solidified lava during the Eocene epoch of the Tertiary period, around 42 to 47 million years ago.



All photos by Velimir Dragic

These basalt platforms of hardened and petrified lava flows can reach an impressive thickness of 600 metres at Flinders Ocean Beach.

The highlight of the sanctuary geology is a hexagonal basalt column, which forms the bridge between the intertidal region and a sandy ocean beach.

Visible limestone in the cliffs, containing fragile vertebrate fossils, was laid down over the weathered basalt during the Pleistocene epoch.

On the outermost part of the basalt platforms, the force of constant ocean waves has produced numerous rock-pools, with grinding rocks permanently stirring the pool in a circular motion of water. The ocean here paints a dramatic picture of waves breaking on the reefs.— **Velimir Dragic**

Reef Island 15th December

Seven members took part in the excursion to Reef Island, which was our final activity for the year.

Reef Island is a recognised high tide roosting site for wading birds and of utmost importance within Western Port Bay and potentially threatened by disturbance from people walking dogs.

We set out on a falling tide which is perfect for accessing Reef Island as it is cut off from the mainland at the high tide and can be very dangerous for anyone attempting to cross the rocky causeway at high tide. We set off in fine but humid conditions after all the rain of the preceding days.

A fairly long walk is required to gain access to the island and its furthest extremity and it is quite rocky underfoot. Reef Island has been designated as a Site of State Geomorphological Significance because of the origin of the gravelly ridges which join the basalt Reef Island to the shore at low tide which is not clearly understood.

We observed hundreds of Black Swans and Chestnut Teal out on the water and a Swamp Harrier flew overhead which was the only raptor seen on the day.

We observed good numbers of migratory waders along the shoreline and the best bird of the day being the Golden Plovers of which there were 15 amongst the rocks alongside 20 Ruddy Turnstones at the furthest point of the Island. Reef Island is one of the most reliable sites in Western Port Bay in which to see Golden Plovers.

We headed back to the mainland with an ominous storm brewing off French Island and we just made it back to the cars as the storm arrived bringing lightning,thunder and torrential rain. Our proposed Christmas picnic lunch together was therefore spent taking refuge in our cars!

Bird list for Reef Island. Cape Barren Goose(3) Black Swan, Chestnut Teal, Silver Gull, Pacific Gull, Little Pied Cormorant, Pied Cormorant, White-faced Heron(6) Royal Spoonbill(1) Straw-necked Ibis, Australian White Ibis, Swamp Harrier, Eastern Curlew (6) Sharp-tailed Sandpiper, Red-necked Stint, Pied Oystercatcher, Pacific Golden Plover, Masked Lapwing, Caspian Tern, Superb Fairy-wren, Little Grassbird, Skylark, Welcome Swallow, European Goldfinch. —**Bett Mitchell**

Banyan Waterhole 4th February 2019

Only three members made the trip to Banyan Waterhole in Bangholme (opposite the Eastern Treatment Plant). Water levels seemed lower than usual, and bird numbers seemed to be down. The sky was cloudy, but weather was fine and wind was light. There were quite a few Pelicans on the water, together with Swans and a gathering of Chestnut Teal, both White and Straw-necked Ibis, Great, Little and Little Pied Cormorants, and an Egret. After a while a Darter

put in an appearance. A pair of Black Ducks were trailed by seven ducklings.

Across the paddocks there were a few Dusky Woodswallows, some Red-rumped Parrots, White-faced Herons, and the usual Magpies etc. There were a great number of Welcome Swallows and Martins in the air. We identified the latter as Fairy Martins, but in a grainy long-

distance photo I was able to see that there was at least one Tree Martin with them.

bird sightings because the observation deck was completely surrounded by *Phragmites* to three or four metres tall. Not an unpleasant lunch spot though. — **Lee Denis**

For lunch we moved to the Edithvale Wetland, but added no

Black Swan	Australian Pelican	Masked Lapwing	Magpie-Lark	Tree Martin
Pacific Black Duck	White-faced Heron	Spotted Turtle-Dove	Willie Wagtail	Fairy Martin
Chestnut Teal	Great Egret	Crested Pigeon	Dusky Woodswallow	Common Blackbird
Darter	Australian White Ibis	Red-rumped Parrot	Australian Magpie	Common Starling
Little Pied Cormorant	Straw-necked Ibis	Superb Fairy-wren	Little Raven	Common Myna
Little Black Cormorant	Swamp Harrier	Red Wattlebird	Red-browed Finch	
Great Cormorant	Purple Swamphen	Noisy Miner	Welcome Swallow	

Pheromones in Action

While walking to the front of our garden on December 21, I noticed a number of two-toned brown/yellow moths flying around the dwarf callistemon bushes “Little John” that in the past have been invaded by a mass of larvae of the Yellow-spotted *Epicoma* (*Epicoma contristis*) moth. This alerted me to see if these moths were the same ones as I was concerned it might have meant another invasion so I watched them for a while.

For the first time in my life I was watching the well-known feature of moth reproduction where the female releases pheromones and the males pick these up with their extraordinary feathered antennae. In the case of the Yellow-spotted *Epicoma*, both male and females have feathery antennae, with the male’s being slightly larger. Several of the moths, flying with a slightly jerky flight, seemed to have a roughly circular to oval path around the row of their target shrubs. There were at least five moths in flight at any one time and each one that I saw land was a male. Did these moths all just appear from a recent hatching or was it the presence of a female that lured all the available males from around the area to that one spot?

On closer inspection of one of the bushes I saw two moths near the ground and as I moved closer, one fell to the ground in what appeared to be a death play act. It turned out to be a female and she lay there, not moving, with her wings held together over her back. I could pick her up without any response and after laying on my hand for a while she started to move and regained her normal stature, so I placed her atop one of the bushes. Following that there were still several males doing their erratic flight around the area, but I noticed one or two making a smaller and smaller circuit, occasionally swerving very close to the female. This continued until one got within about 30cm of the female and after another couple of quick circuits, landed on the female and immediately commenced mating. This was 10.05am. There was a slight breeze blowing at the time.

Sometime shortly after this (10.08am), a second male

narrowed in on the female and attempted to mate with her, but was clearly too late and after a brief attempt to disrupt the pair, it flew away. There were still males flying around in search of females at least an hour later, but I saw no other females. This was perhaps not surprising, as once mating commenced, they were hard to see as they virtually remained in the same place, joined and not moving.

Being interested in the complete life-cycle of these insects, and previously having raised adult moths from pupae found on these same bushes, I was hopeful of seeing what the eggs looked like. The pair remained together for the rest of the day. Why some moth species remain joined for such long periods I do not know. However, overnight they became separated at some stage because in the morning there was a raft of egg mass laid in the container I had placed them in for observation. The female had lost considerable size in her abdomen, clearly from expressing the egg mass. A second, smaller egg mass was laid on the second night. I now wonder how long it may take for these eggs to hatch. At that stage, I had no way of telling how many eggs have been laid.

On January 15, I first noticed that there were lines across the container which held the egg masses and on closer inspection I realised that the eggs had hatched. All the tiny first instar larvae were crawling across the sides and lid of the container in a procession action. Each tiny larva (about 1.7mm long) was head to tail with those in front and behind. There were several lines across the container and I counted them all to a total of 439 larvae. As they were all alive and well I assume they must have just hatched in the last day or two making it about three weeks between laying and hatching in the warmth of summer. If my patience and time to attend them allows, I will try and monitor the various instars as they grow. The newly hatched larvae are pale yellow with a black head while the last instar larvae are all black so it will be interesting to follow the colour change if I can.

It is fascinating to watch and learn about some of these common insects that use our gardens.

Rog Standen
Mt Eliza
January 2019



Female 'playing dead' All photos by Rog Standen



Female with first egg sac



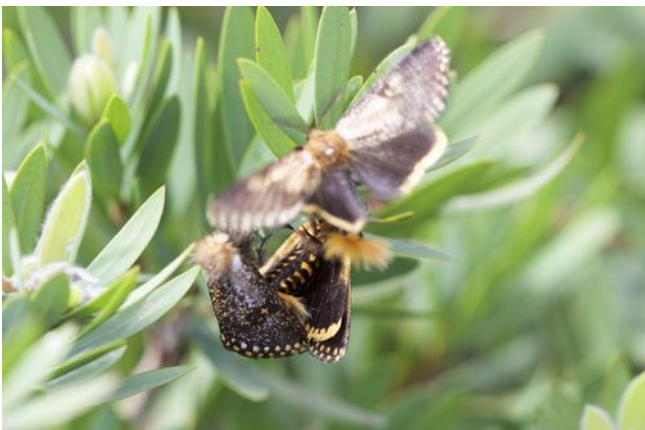
Male



Mating pair with female on the left



Pupa



Mating pair with second male arriving too late



Larvae (first instar)



Larvae (late instar)

Peninsula Field Naturalists Club Inc

Meetings are held on the second Wednesday of each month with a field trip the following Saturday. Further information and current Programme of Activities can be found at our website.

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