

Wanderer

also known as the Monarch



Class:	Insecta
Order:	Lepidoptera
Family:	Nymphalidae
Genus:	<i>Danaus</i>
Species:	<i>plexippus plexippus</i>

Interesting aspects:

The Monarch (or Wanderer) Butterfly was once confined to North, Central and parts of South America. During the nineteenth century however it migrated to western Europe as well as across the Pacific to Australia. It was first reported from Sydney in 1856, and was quite common around Adelaide by 1881. All phases of its lifecycle are poisonous. The larval milkweed food plants contain poisons which the larvae are able to retain in their bodies as protection against predation. This butterfly is probably one of the longest lived of any butterfly, due to its tough wings, durable body, and inedible poisonous properties. The over-wintering generation can live for 8-9 months.



Description

Wingspan: male 93mm male, female 92mm
Upperside: The upperside wings are tawny-orange with black veins on wing margins and white spots.
Underside: wings are similar but with a background colour of pale yellow-brown, black on wing margins with white spots.



Distribution

It occurs mainly in the south and east of Australia, including Kangaroo Island and Tasmania. In South Australia it occurs commonly in the southern settled areas where its introduced food plants are cultivated or have become weeds. It has not been documented as occurring in northern pastoral areas, but as the butterfly is a strong migrant it may appear there occasionally. It used to be extremely common in the Adelaide Hills in the recent past due to large areas of the hillsides being covered with the introduced milkweed (broad-leaved cotton-bush). With weed control the weeds have diminished along with the butterfly. It still maintains a strong presence along the coast of Adelaide.



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Egg, pupa, adult upperside and underside Photos: LFHunt. Caterpillar RHFisher. Right: overwintering in Onkaparinga Gorge. Photo Colin Cock.

Larval foodplants

The larvae of the Monarch feed on a number of introduced foodplants, for example *Araujia sericifera* (cruel plant), *Asclepias curassavica* (red-head cotton-bush), *Gomphocarpus fruticosus* (swan plant), *G. cancellatus* (broad-leaved cotton-bush) and *Orbea variegata* (carrion flower). Around Adelaide, *Gomphocarpus cancellatus* and *G. fruticosus* are the main foodplants. Interestingly, the larvae will not eat the native milkweeds, in particular *Cyanchum* or *Sarcostemma* spp., although they eat the plants belonging to these two genera in the Americas.

Habitat and Ecology

The introduced foodplants occur as weeds in a wide variety of habitats, but survive best in areas with reliable rainfall. The butterfly will not utilise the native milk-sap plants.

Flight period

It is possible to find the butterfly throughout the year in southern settled areas though it is an unusual sighting in winter. During the winter months it tends to stay close to its foodplant growing in sheltered areas.



The butterfly becomes reproductively active during October, and there are continuous broods into Autumn, which can be completed in 5-6 weeks.

Threats

There are no major threats although the foodplants are considered weeds outside of cultivation.

Conservation Strategy

As a migrant or introduced species to Australia the Monarch has no conservation status.



Cotton bush Photo: RHFisher

NOTES on managing the Wanderer (Monarch) Danaus plexippus plexippus caterpillar food plants.

There are three main food plants of the Wanderer Butterfly caterpillars however all have a milky sticky latex sap (common to the Asclepiadaceae family) **which can cause skin irritation to some people.** Wear gloves, but especially wash hands before eating. Do not touch your eyes.

The swan plant or narrow leaved cotton bush (*Gomphocarpus fruticosus*) is sometimes available from garden nurseries. The broad leaved cotton bush or milkweed (*Gomphocarpus cancellatus*) is a roadside weed and a weed of waste lands around Adelaide and surrounds. It is these weedy stands which maintain both the native Lesser Wanderer (*Danaus petilia*) and the naturalized wanderer (Monarch) butterflies that breed around Adelaide. The garden plant, the red milkweed bush (*Asclepias curassavica*) is a more attractive board leaved species having orange-red flowers. Seeds can be bought off eBay. The plant is subject to frost damage. All of the above plants are attacked by sap sucking insects.

Each of these species has the potential to become an environmental weed, but with a few precautions they can be contained where you want them. They are not listed as a declared plant under the NRM Act and it is not illegal to grow them. They germinate readily from seed, so removing the green soft spiny seed pods before they mature will prevent seed from being dispersed. When the pods dry out they shed black seeds attached to cotton-like ‘parachutes’. Learn the appearance of seedlings so that if self-seeding does occur they can be hand weeded. Caterpillars prefer fresh tender shoots and leaves, so if removing old bushes or branches do so carefully with thought for the environment, e.g. wrap and burn.

The caterpillars are voracious feeders and in many situations will control the spread of milk weeds (a form of biological control), because they can completely defoliate plants eating leaves and flowers just leaving bare stems. Your small young ‘nursery plants’ may need netting to protect them from egg laying butterflies until they get larger.

ACKNOWLEDGEMENTS *Danaus plexippus plexippus* fact sheet:

Majority of text, map and flight bar from: ‘*Butterflies of South Australia*’ website by Roger Grund much of which includes biological information by the late Lindsay Hunt.

Notes on handling the caterpillar food plants by Linda Shmith.

Other references and contributors include: Michael Moore; Andrew Lines; Fisher RH 1978 *Butterflies of South Australia*; Braby MF 2004 *The complete field guide to Butterflies of Australia*; Dashorst RM & Jessop JP ‘*Plants of the Adelaide Plains & Hills*’.

Production: Jan Forrest OAM, May 2018.

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For further information or to purchase our book ‘*Attracting Butterflies to your Garden, what to grow and conserve in the Adelaide region*’ or to purchase a ‘*Butterfly Garden*’ DVD contact the Secretary, c/- South Australian Museum, North Terrace, ADELAIDE 5000.

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EMAIL: info@butterflyconservationsa.net.au

Rearing Wanderer Caterpillars

If you have some Wanderer caterpillars, either given to you or hatched from butterfly eggs on your own milkweed plant it is suggested that in order to increase the probability of them reaching the pupa (or chrysalis) stage that you should bring them inside.

You need something like a cage, aquarium, terrarium or large glass vase and a warm, light spot where you can monitor, feed and keep them safe from predators.



Caterpillars, pupa and adult butterflies all need oxygen so ensure only 'netting' covers the top or sides.

A caterpillar cage can be made by purchasing a sturdy plastic crate with a hinged lid. Use a jigsaw to cut a hold in the lid. Remember to leave a strip all around wide enough to fasten aluminium strips to hold fly wire in place with small bolts with nuts. At the back cut another hole, again fasten fly wire with aluminium strips



Photos. Top left: Aquarium..Photo: Linda Shmith.

Above and left: Plastic box cage, top right shows corner of lid. Above, Jar with holes cut for plant. Photos: Jan Forrest.



Photo left :The smaller plastic box cage, there is less room for plant. Photo: Jan Forrest

Below 2nd instar larva feeding. Photo: LF Hunt.

Cut holes in the top of the lid of a jar to put the foodplant stalks into. There are two sizes of these crates 58cm high and 38cm high. Use the smaller size when using broad-leaf cotton bush however the taller crate is better when using the narrow-leaf swan plant as their stalks are longer.

If you receive **eggs** on leaves they will take about 5-7 days to hatch into caterpillars. Sometimes not all the eggs will hatch. The newly emerged caterpillars are tiny - only 2mm long. You may see where they are eating the leaves.



The **caterpillars** will eat, grow and create frass (caterpillar poo). Their frass however is quite dry and does not smell, so place some paper towel in the bottom of the container then just sweep the bottom of the box and replace the paper on the floor.

You will need to feed your caterpillars regularly place a cutting of their food plant either the Narrow-leafed Swan-plant or Broad-leafed Cotton-bush into a small jar of water. Remember to water the plant, to stop the leaves from wilting. When the plant becomes limp or is all eaten, it is time to replace it with fresh leaves. You may need to move the small caterpillars onto another leaf but be very gentle. Cut the leaf they are feeding on or pick them up on a leaf.

Sometimes the caterpillars will just sit on the plant or walls and not do anything. Don't worry, they may be changing their skins into the next 'instar'. Be careful when you open and close the box or cage, as the caterpillars may have crawled around and be on the lid.

Caterpillar deaths. It is possible that not all of your caterpillars will go through their full life cycle. They may just hang limply from the plant or ceiling. That could be because they have been 'parasitized' by a wasp or other

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insect and become food for the young of the wasp. This just nature's way of stopping there being too many butterflies"! If that happens, remove the dead caterpillar and flush it down the toilet.

Pupation. Eventually the caterpillars will be fully grown to about 50mm long (about three weeks from emerging from the egg). The caterpillars will go walk-about, looking for a suitable place to pupate.

Usually this will be on the ceiling of the box or cage. They will hang from the ceiling in a J shape. Eventually they will wiggle and squirm, shed their last caterpillar skin and form a green pupa or chrysalis.



Sometimes the caterpillar will pupate on the plant. If that happens, cut the leaf or stem where the pupa is and stick the leaf to the ceiling with electrical tape. Alternatively pin the leaf or stalk to some curtains making sure there is sufficient room below the pupa for the emerging butterfly to stretch out its wings. If it falls to the floor tie some cotton thread around the 'cremaster' (the 'stem' of the pupa) and tape the thread to the ceiling.



After about two weeks the pupa will darken and you may see the orange and black colours of the wings through the pupal case. The adult butterfly will emerge when the pupal case becomes opaque as the pupa pulls away from the casing.

The adult butterfly. There may be a blurt of liquid onto the walls or floor when it emerges, that's OK, but a bit messy. The butterfly wings will be crumpled up and wet, so it hangs from where it is allowing the wings to stretch out and dry.

Eventually after about an hour or two, it will open and close its wings and may flutter around trying to get out. When that happens open the door ideally that same day ensuring that:

- it is not raining
- it is not too windy
- it is not too late in the day
- preferably onto a bush or flower, then if you wait awhile it will fly off.

You may like to carefully move your finger close and let the butterfly climb onto your finger, you can then shift the butterfly onto a plant and it may sit there for awhile before flying off. If you have put the butterfly on a nectar plant, a daisy, lantana, buddleia or other plants with tiny flowers you may see the butterfly unroll its 'proboscis' from under its head and take a sip of nectar from the flower.

Keep a record. Write down

- what you do
- when the eggs hatch
- how long the caterpillars are
- when the caterpillars pupate
- when the adult butterfly emerges

Then publish your report and send an email to Butterfly Conservation SA at info@butterflyconservationsa.net.au saying what you found out we may be able to publish your report in our newsletter.

In summary:

Glass or plastic container, cover/sides must allow airflow.

Paper towel for caterpillar poo and ease of cleaning

Fresh milkweed or swan plant leaf supply

Warm/light spot (not too hot or they will die)

Caterpillars likely to go 'walkabout' if no lid, netting on top

Release adult butterfly same day

If you need to retain - put some cut orange, watermelon or sugar water as a potential source of food for adults.



Top left pre-pupa, below adult about to emerge from pupal case. Photos: LFHunt. Above right: Adult on broad-leaved cotton-bush, below left young swan plants and right 'swan' seed and pod, below fresh seed pod. Photos: Jan Forrest

ACKNOWLEDGEMENTS Rearing Wanderer caterpillars fact sheet:

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