

# SOUTH AUSTRALIAN BUTTERFLIES

## *Data Sheet*

*Vanessa itea* (Fabricius) (Australian Admiral)



**Interesting aspects:** This butterfly is Australia's representative to the nettle feeding, Red Admiral group of butterflies that occur in the Northern Hemisphere. It possibly had its origin in ancient Gondwanaland, as an evolutionary descendant of the *Antanartia* butterflies of Africa, to which *V. itea* more closely resembles than the Red Admirals. New Zealand also has an endemic representative *Vanessa gonerilla*, which is much closer in appearance to the Red Admiral (*Vanessa atalanta*).

The *Vanessa* group of butterflies have three generic sub-groups, comprising the *Bassaris* Subgroup that include the more primitive *V. itea* and *V. gonerilla*; the *Vanessa* Subgroup that include the Red Admirals (such as *V. atalanta* and *V. indica*), and the *Cynthia* Subgroup containing the Painted Ladies (such as *V. kershawi* and *V. cardui*).

The butterfly is a strong migrant and vagrant, and disperses itself throughout the temperate areas of Australia tracking down its nettle hostplants. It is mostly confined to Australia, but has managed to disperse itself on upwelling, prevailing westerly winds to islands east of Australia, including New Zealand from where in fact this butterfly was first documented by European naturalists.

The butterfly has an interesting habit of resting head downwards with wings open (usually) or closed, on vertical walls of buildings, fences, tree trunks, rock faces etc. It will also slowly open and close its wings in this position, which usually indicates it is aware of your presence. The butterfly has a rapid, darting flight and is easily startled from its resting position. Males will use this position to investigate anything flying in the near vicinity,

dashing off to intercept the intruder, but usually losing interest quickly if it is not a female Admiral to return to the same or nearby position. Males often hilltop, particularly late in the afternoon to await newly emerged females. Butterflies are also attracted to sap flows from certain trees.

Interestingly, in Indonesia there are several kinds of Red Admirals closely related to *V. indica*, and including on Timor a *Vanessa dilecta*. None of these have been recorded from Australia or Papua New Guinea, even though the species' are known to be migratory. In New Zealand it is known that *V. itea* will hybridize with *V. gonerilla* to produce fertile young that are capable of back-crossing with the parent species !

## Life History

**Larval food-host:** Normally plants of the Urticaceae family, *Parietaria australis*, *P. cardiostegia* (mallee smooth-nettle), *P. debilis* (smooth nettle), \**P. judaica* (wall pellitory), \**Soleirolia soleirolii* (baby's tears), *Urtica incisa* (scrub or native stinging nettle), \**U. urens* (stinging nettle). It has been known to utilise \**Arctotheca calendula* (cape weed) (Asteraceae) but this is not a normal host. The larvae eat the leaves and softer green parts of the hostplants, which are mostly annual but will remain perennial if there is sufficient moisture. The butterfly is not known to utilise the tropical species of nettles, but will use the temperate tolerant *Urtica* growing in tropical highlands.

**Eggs:** Initially pale green, small, barrel shaped, the height slightly greater than the width, with 8-9 well developed, wing-like transparent longitudinal ribs that enlarge apically and continue onto the top edge of the egg. Usually laid singly on the hostplant, but sometimes in pairs, and mostly on the uppersides of leaves. Eggs are also sometimes laid on debris adjacent to the hostplant. Larval development within the egg commences immediately after being laid. The egg shell is eaten by the larva after its emergence.

**Larvae:** Initially pale grey, long cylindrical shaped, with long hairs set on raised bases. After eating the green leaves of the hostplant, the larva gradually becomes darker in colour. Larvae of all instars construct leaf shelters on the hostplant in which they hide from predators. The newly hatched larva constructs a shelter by rolling or folding under the edge or tip of the leaf to make a small tubular shelter.

Subsequent instars take on a particular colour form (either dark or pale) and the hairs develop into pointed, branched fleshy spines (scoli), which become progressively larger and better developed with each instar. The leaf shelters also become progressively larger and better developed, and by the third instar the entire leaf is folded into a shelter, or the larva may use two or more leaves.

The final instar is about 32 mm long, cylindrical, covered in regular arrays of large scoli on each segment, typical for the subfamily. There are usually seven scoli on each segment, excepting the first segment which has none, the second and third segments which have four scoli each, while the posterior two segments have only two scoli each. There are numerous secondary setae, consisting of a fine white pointed hair set on a simple raised white base. The final posterior segment is rounded. The head is rounded, dorsally furrowed, smooth, but covered in spinose setae most of which have the lower third developed into a thickened simple base, which differentiates these larvae from those of *V. kershawi* which have head setae set on a short base. There are sublateral hairs along the body. The colour is

variable, either black, grey, grey-green, yellowish-green or brown, with a darker dorsal line, and pale yellow subdorsal and lateral lines. The latter lines may be discontinuous or occur as spots. Pale larvae may be laterally darker, and sometimes there are red lateral markings. The scoli are dark coloured in dark larvae, but pale translucent in pale coloured larvae.

The mature larvae feed openly during the day as well as at night, returning to hide in their loosely formed leaf shelters when finished feeding. The larval duration is about 4-5 weeks during the warmer months, and larvae will develop during the winter months if it is not too cold.

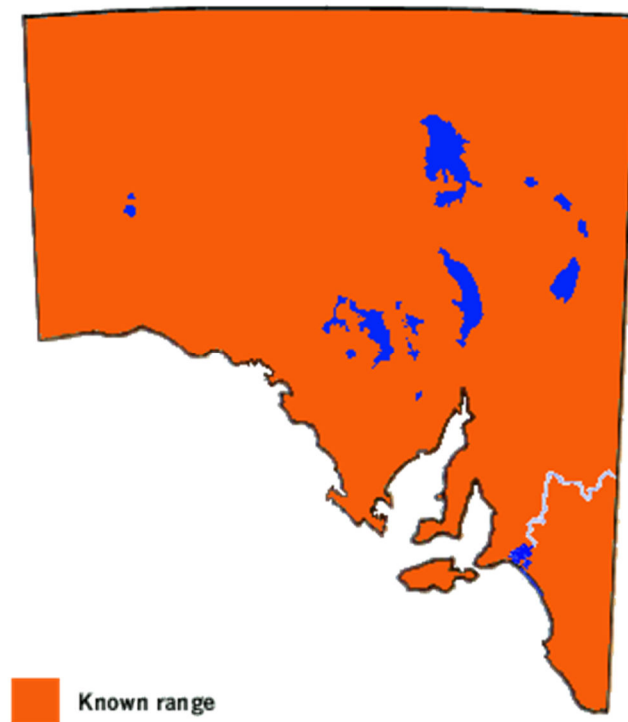
**Pupae:** Narrow elongate, angular, with a roughened surface, about 20 mm long ending in a long posterior cremaster. Wedge shaped anteriorly with a pair of pointed apical horns, a large keeled thoracic dorsal ridge, small dorsal abdominal projections, a series of subdorsal projections, three pairs of large lateral projections along with some small lateral abdominal projections, and a few small paired processes ventrally. The colour of the pupae is variable. Pupation usually occurs off the hostplant on an adjacent object or plant. These pupae usually match the substrate to which they are attached, occurring in cryptic shades of grey, brown, or grey-brown. The shape and colouration of the pupa closely imitates a dead, shrivelled leaf. Those that remain on the hostplant often have a golden lustre although the latter is sometimes indicative of parasitisation by small wasps. There are paired, white, silvery-white or golden dorsal spots of irregular shape and size, on the anterior half of the pupa. It is suspended head downwards by the cremaster.

The pupal duration is about 10-14 days during the warmer months, extending to 25 days or more in winter.

**Flight period in S.A.:** It is possible to find the butterfly in flight throughout the year, but is most common during the warmer months. They often accompany the Australian Painted Lady (*Vanessa kershawi*) during its migrations, tending to arrive in southern areas in early spring. In southern areas adults can hibernate during winter. The butterfly is capable of continuous broods if its hostplants remain in a green condition, and a brood can be completed in about 7 weeks during summer. (In the latter situation, the life of the colony is usually curtailed by a massive build up of parasitoid wasps). It normally overwinters as larvae.



**Distribution:** Due to its migrant tendencies and its dependence on temperate species of nettles, the butterfly can be found throughout sub-tropical and temperate Australia, including Kangaroo Island and Tasmania. The butterfly will not normally tolerate hot, humid tropical conditions, although there is a record of the butterfly being found in Papua New Guinea. It is replaced in adjoining areas of Indonesia and Timor by tropical tolerant *V. indica* derivatives.



**Habitat:** Generally found wherever its hostplants occur, and these are locally common and widespread but which thrive best in moist, temperate areas. The butterfly can exist in hot, arid areas.

**Conservation Status in S.A.:** A nomadic migrant, rarely common, and is usually seen in very low numbers near its hostplants unless in a migratory mode.

**Threats:** No major threats.

**Conservation Strategy:** None required. Will thrive in urban gardens.

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