

SOUTH AUSTRALIAN BUTTERFLIES

Data Sheet

Ogyris barnardi delphis (Tindale) (Barnard's Azure)



Male

Interesting aspects: One of the more drab members of the Ogyrini tribe of Lycaenid butterflies. It belongs to the group of *Ogyris* which associate with small ants, and members of this group have distinctive eggs and early stages that typify the group. *O. barnardi*, along with *O. olane* and *O. oroetes* form the isolated *O. olane* Species Subgroup within this group, as these three butterflies all have clubbed antennae, whereas in all other *Ogyris* butterflies the antennae are not clubbed. *O. barnardi* is very similar in appearance to *O. olane*. The latter flies in temperate, higher rainfall areas, and in South Australia *O. barnardi* generally takes over in distribution where *O. olane* finishes. Like all Lycaenids, the adults are sexually dimorphic in morphology on the wing uppersides. Males have broad, dark indigo-purple coloured areas, whereas the females have much reduced areas of bluish purple.

Adults fly throughout the day. The male butterflies are usually very active during the heat of the day and are swift in flight. Males will sometimes set up a temporary territory on a bare twig or branch near the top of the mistletoe host, where they will sit with wings closed, waiting for newly emerged females to show up for mating. These butterflies become invisible when settled, as like all other *Ogyris* species, they have cryptically marked undersides that make the butterflies indistinguishable from the rough bark of trees and

bushes when they are settled. Sometimes they imitate a blackened dead leaf still attached to the bare twigs. They sometimes jockey with other males for territorial position and frequent territorial battles can occur. Periodically however, they will fly off to investigate other flying butterflies, but do not always return to the same position. They more-often patrol an area by circling a few different trees harbouring the mistletoe hostplant in a given area, then settle for a while before repeating the patrol exercise. The females are slower in flight, and when not feeding on the flowers of the mistletoe, they spend their time either fending off males or searching for places on the mistletoe to lay eggs. Usually no more than about three male butterflies occur on any one tree at any time.

The butterflies are not very timid and can usually be approached with care, especially the females when they are preoccupied with egg laying.

The butterflies actively fly with *Ogyris amaryllis meridionalis*, as larvae of both butterflies feed on the same mistletoe. Males of both species will actively chase females of the opposite species, but no hybrids between the two species have ever been seen.

Life History

Larval food-host: *Amyema quandang* var. *quandang* (grey mistletoe) (Loranthaceae). The larvae eat the flower buds, flowers, leaves and soft stem parts of the mistletoe. The female is known to lay eggs only on *A. quandang* in South Australia, although in captivity the larvae will eat other *Amyema* mistletoes.

Larval attendant ant: The larvae are attended by a few small dark brown and black ants *Crematogaster* species.

Eggs: Small, dark grey to black, hemispherical shape, basally flattened, the top is domed. The sides are coarsely reticulated in a hexagonal pattern that continues to the small pale-coloured depressed micropylar area on the top of the egg. At each reticulation intersection there is a small raised blunt projection. Some eggs may be a washed out grey or white colour. The egg is typical of the eggs for the *O. olane* Species Subgroup. They are usually laid singly, on the leaves, stems and bole of the hostplant, and sometimes on the adjacent host plant. The eggs start to hatch in about 13 days in late spring. There is usually a very large population of tiny parasitoid wasps on the mistletoe and very few eggs survive parasitisation.

Larvae: The first instar is pale greyish yellow, later becoming pale brown or green after eating the young leaves of the hostplant. Long onisciform shape, with scalloped lateral edges. The posterior dorso-lateral organs are not developed. The head is large, smooth, brownish yellow, hidden beneath the body. There are long dark peripheral and dorsal setae, which are longest anteriorly, posteriorly and dorsally. Dorsal setae occur in two pairs, one pair being long and recurved, the other pair being short, recumbent and directed to the rear. Intermediate instars gradually lose the long dorsal setae and gain the posterior dorso-lateral organs, and are onisciform (slater shaped). They are pale brown or green coloured initially, later becoming greenish brown or greyish green.

First and second instar larvae remain exposed on the leaves of the mistletoe where their colour matches the leaves, but by the third instar as they grow larger and more easily recognisable to predators they will begin to hide during the day, and feed at night. The

young larvae initially eat the young tips of the mistletoe, but by about the late third instar they will also eat the older leaves. Older larvae shelter during the day under coarse flaking (but secure) bark near the hostplant, or in borer holes or ant tunnels in the mistletoe or mistletoe host, or in other leaf debris caught up in the mistletoe or near the hostplant. Larvae of *O. barnardi* will also cohabit with the gregarious larvae of the day-flying black and white mistletoe moth (Agaristidae), which usually take up residence in leaf debris within or near the mistletoe. Only small numbers of larvae are normally present on (or near) each mistletoe that is being utilised by the butterflies.

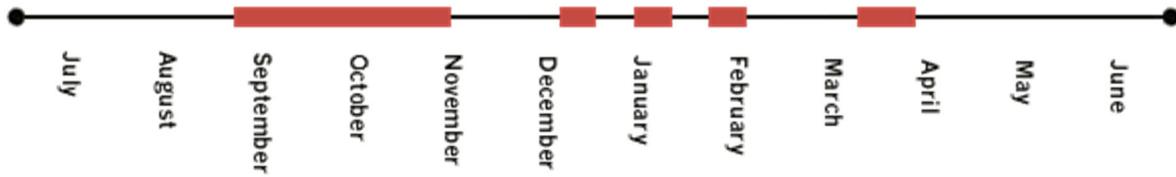
The fifth (final) instar is about 22 mm long, pale greyish green colour, anterior and posterior extremities are dark brown, there are very pale brown dorsal chevron markings and other subdorsal markings, the anal and prothoracic plates are dark brown. Onisciform shaped with a thoracic dorsal furrow, the lateral edges are weakly scalloped, and the anterior and posterior areas are flattened. The body is covered in brown and black coloured, minute secondary setae, which are recumbent, club shaped and rough in appearance, set on a protuberant, angular and ridged base. The secondary setae impart a scabrous appearance to the larvae. The posterior dorso-lateral organs are well developed. The head is small, smooth, yellowish brown, hidden beneath the body.

Pupae: Short cylindrical, rounded anteriorly and posteriorly, about 13-15 mm long, grey coloured soon after pupation, but after a day they turn brown, with a darker dorsal line, and other darker cryptic markings. There is a pair of large, dark brown dorsal spots above the head. The surface of the pupa is without hairs, but bears a reticulated pattern (similar to the eggs) that produces a very fine scabrous surface, and which includes minute specialised secondary setae that are more common around the spiracles. In captivity, the butterflies emerge during the late afternoon. The pupal period is about 13-15 days during mid-summer in captivity.

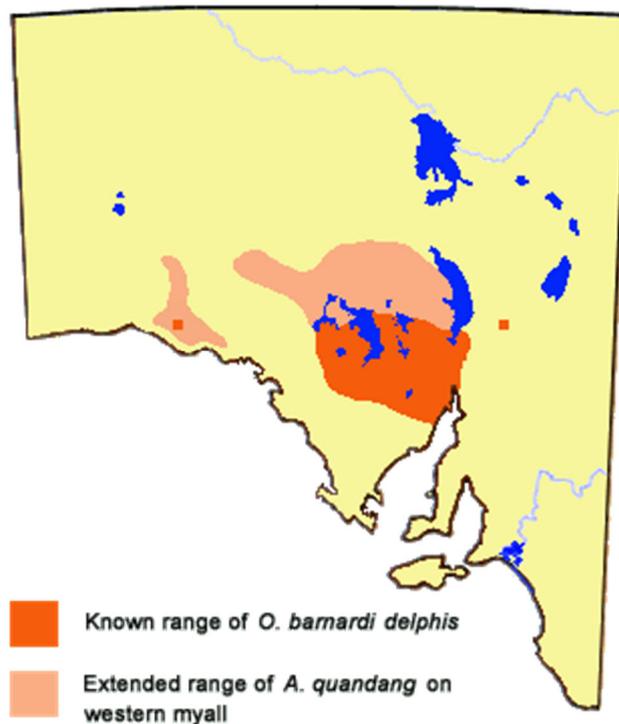
Pupation usually occurs well away from the mistletoe towards the base of the Western Myall host tree where coarse flaking bark and other places to hide are more prevalent. They will also pupate in the leaf debris shelters of the mistletoe moth, although these shelters can also sometimes contain huge spiders. Larvae will pupate gregariously near each other. Pupating larvae surround themselves with a loosely webbed, silken cocoon-like shelter, which presumably affords some protection from larger predators, or from other *O. barnardi* larvae which can cannibalise soft pupating larvae. There is normally space within the silk webbing for the small attendant ants to pass through to attend to the live pupae. Pupae are attached to the silked substrate by anal hooks and a central girdle.

The pupae are known to stridulate, making a series of audible clicks, which are believed used as a means of communicating with the attendant ants. There is usually at least one ant in attendance with a pupa.

Flight period in S.A.: The butterfly is known to fly in spring and autumn, with the main flight during spring, which coincides with the flowering of the mistletoe hostplant that are used for nectaring purposes by the adults. However, in captivity, eggs laid in spring will produce adults in summer. A summer flight in the wild has yet to be witnessed in South Australia, although the nominotypical subspecies that occurs in NSW and Qld flies all year round. In captivity, a brood can be completed in about 12 weeks during late spring-early summer. Larvae can go into a torpid (semi-hibernation) state over winter.



Distribution: In South Australia this butterfly has only been found near its hostplant mistletoe (and its main mistletoe host tree the Western Myall, *Acacia papyrocarpa*), and in some areas nearly every myall tree can harbour mistletoe. This combination myall/mistletoe occurs mainly in northern Eyre Peninsula, the Gawler Ranges, and southern pastoral areas from the Nullarbor Plain and Tarcoola to Roxby Downs. The known range of the butterfly is presently northern Eyre Peninsula, the Far West Coast-east Nullarbor Plain Region, the Gawler Ranges and areas between Port Augusta and Lake Torrens. There is also a record of the butterfly at Wilpena in the Flinders Ranges. The frequency of the butterfly deteriorates at the edges of the myall/mistletoe distribution. The distribution of the butterfly in South Australia is probably more extensive than known, based on the distribution of the myall/mistletoe, especially in the southern pastoral areas. Interestingly, the butterfly has yet to be seen in the north Nullarbor Plain and Tarcoola to Roxby Downs Region. The mistletoe also occurs (less frequently) in northern pastoral areas on other *Acacia* trees such as *A. cambagei*, which grows along watercourses, and it is possible the butterfly may eventually also be found in this habitat. Its mistletoe host also occurs along the east side of the SA border south of Broken Hill, parasitising *Acacia loderi*. However the butterfly has yet to be seen in that area. The local subspecies *delphis* of the butterfly only occurs in South Australia. The nominotypical subspecies of the butterfly occurs in inland northern NSW and southern Qld, in the Brigalow (*Acacia harpophylla*) woodlands.



Habitat: The butterfly has only been found in the Western Myall woodlands that occur in a semi-arid habitat just north of the limits of broad-acre agriculture. The Western Myall grows best in a hot-temperate semi-arid habitat in a plains situation having an annual rainfall of about 150-250 mm. In this situation, the Western Myall can be the dominant tree in the woodland.

Conservation Status in S.A.: The butterfly is usually locally common when in flight, and quite often every Western Myall tree that harbours hostplant mistletoe can have at least one or two butterflies flying around it during the day.

Threats: Not generally under threat except where the habitat is adjacent to farming communities and affected by poison spray drift during crop spraying activities, especially when the poison is applied by aerial means. The *A. quandang* mistletoe is mostly parasite specific to the Western Myall tree, and the latter seems to have adjusted to the affects of the mistletoe (partially symbiotic), and large trees with their mistletoe can be a couple of hundred years old. In fact, in periods of drought the myall can selectively kill off some of the mistletoe growing on the tree allowing the latter to conserve water. Rabbits affect regeneration of Western Myall, and in some areas with a high rabbit density there has been very little regeneration since European settlement. During historic periods of drought the huge piles of leaf litter beneath the Western Myall trees were used to sustain stock (instead of destocking), and this can have an effect on the water mulching retention beneath the trees in the hot summer months, particularly trees in the hot northern areas of their range, which can cause the death of the tree.

Conservation Strategy: None required, except that any spraying activity should be carried out judiciously.

Author: R. GRUND, © copyright 12 May 2002, all rights reserved.
Last update 5 Jan 2014.