

So due to the naming of a moth, the block in a small way has become “immortal”. An image (Fig. 11) showing the shed as viewed from the north side of Fig Tree Creek accompanied the description.

P.S. John tells me he still has the descendants of the Purple-spotted Gudgeons and Rainbow Fish rescued from Fig Tree Creek when the pool was drying up and that “Sara Lee” [derived from its taxonomic name *Litoria caerulea*] the green tree frog, rescued, at the block, from the mouth of a Red-bellied Black Snake, still lives in a terrarium at the Griffith Uni Ecocentre.

Photos Peter Hendry

#### ITEMS OF INTEREST

### **Observations on the life history of the Red-bodied Swallowtail, *Pachliopta polydorus queenslandica* (Rothschild, 1895) – Dennis Bell**

*Pachliopta polydorus* (Linnaeus, 1763) is a butterfly widely distributed in the Australian region from the Moluccas through New Guinea to the Solomon Islands. In Australia it is represented by the subspecies *P. p. queenslandica*, the Red-bodied Swallowtail, which is distributed from the Torres Strait to south of Townsville. The early stages feed on plants in the *Aristolochiaceae* family.

Despite being restricted to tropical regions, the butterflies are quite adaptable and can be successfully maintained in Brisbane. Eggs laid during spring and summer will complete their life cycle in the same season, taking approximately 7 weeks to complete. Eggs laid from late April onwards usually develop at a slower rate and the resulting pupa overwinter to emerge as adults in late August/early September with the onset of warmer weather being the trigger to hatch.

During the summer months the egg (Fig.1) typically takes 6-7 days to hatch, the larva matures in approximately 3 weeks reaching 35-40mm in length. Larva typically have a brown body with red tubercles (Fig.2(a)) for most of their development however, during the final instar, the body of the larva develops a mottled colouration and the red tubercles become paler (Fig.2(b)). The pupa (Fig.3(a), (b)) take approximately 3 weeks to develop into the butterfly (Fig.4(a), (b), (c)). There is usually some spread in larval development and pupal duration times however the majority emerge as adults close to these times. Upon emergence adults do not cling onto the empty pupal case to dry but rather crawl away to find a spot where they can hang upside down and dry their wings. If they cannot reach anything, they will fall to the ground trying and their wings usually do not fill properly.





Fig. 1 Egg; Fig. 2(a) 4<sup>th</sup> instar larva; Fig. 2(b) 5<sup>th</sup> instar larva; Fig. 3(a) Pupa ventral view; Fig. 3(b) Pupa dorsal view; Fig. 4(a) Female; Fig. 4(b) Adult male; Fig. 4(c) Adult undersides



When laying eggs, the females will be seen hopping from plant to plant testing each one if it is satisfactory. Once a suitable plant is found then it becomes a matter of testing which leaf is suitable. The butterfly will then hold onto the leaf, momentarily stop flapping its wings and curl its abdomen up under the leaf to deposit a single egg. Females typically start laying eggs about a week after emergence from the pupa and will then continue laying for about 3 weeks. They can produce a large number of eggs when conditions are good.

Suitable plants I have found eggs/larva on include *Aristolochia acuminata*, *A. macroura* (probably the most preferred food plant in this list), *A. esperenzae*, *A. grandiflora*, *A. indica*, *A. albida*, *Pararistolochia deltantha*, *P. peninsularis*, *P. australopithecurus* and *P. praevenosa*. An egg, and subsequent larva, was once found on *A. meridionalis* subsp. *centralis* however from my observations neither this plant nor *A. thozetii* seem to be attractive for egg laying possibly due to their small size. For *Aristolochia* sp. most of the leaves and soft stems can be used however with *Pararistolochia* sp. only the soft new growth (leaves and stems) is eaten.

The butterfly is very particular when selecting a site on a food plant to deposit an egg. They require:

- a) soft growth
- b) a plant in the shade and
- c) a low growing plant

The females lay either on low growing vines up to about one metre high or growing along the ground or seedlings. A fresh shoot either growing close to the ground or climbing up another plant is the preferred egg laying site. They will not lay eggs high up on vines as present in mature forests. This is similar to the habits of the Clearwing Swallowtail (*Cressida cressida*) which similarly selects plants growing very low to the ground.

*Pachiopta polydorus* has a restricted distribution when compared to either *Cressida cressida* or *Ornithoptera priamus*. Since they adapt well to conditions in Brisbane one would expect them to have a wider natural range than they do. It is most likely that their range is determined by the ready availability of the food plants growing in the desired manner for a large part of the year. With the range of native food plants available this only occurs in tropical areas and more so on Cape York Peninsula. Small plants of *Aristolochia* sp. (e.g. *A. acuminata* and *A. chalmserii*) are probably mainly used as edible growth is available for most of the year whereas *Pararistolochia* sp. only provide seasonal growth. Populations can also be maintained using an exotic species such as *A. macroura* in a garden setting. This plant is highly attractive for the butterfly to lay eggs on and larva readily eat the leaves and stems.

Both male and female butterflies have similar patterning and colouring however the males have slightly narrower forewings. Despite being a strong flier, the adults adapt well to an enclosure where they can live for 6-7 weeks. Most flying activity occurs



during the early morning and late in the afternoon with the butterfly resting the remainder of the time. They are attracted to flowers such as *Durantia repens*, *Pentas lanceolata*, and *Stachytarpheta* sp. and spend a lot of time feeding. At dusk they look for an overnight roosting spot in a protected, shaded area. Interestingly, they seem to identify a favourite location and will use that spot repeatedly.

Raising of larva is easily achieved with *A. acuminata* as both leaves and stems are eaten. *Pachliopta polydorus* larva consume a lot of leaves and can be messy eaters, eating out the centre of leaves. They also like to eat the stems from the ends. Luckily *A. acuminata* is a very large vine which grows vigorously through the summer months and can easily provide sufficient leaves for the larva throughout development.

## FOOD PLANTS

### *Aristolochia macroura*



The exotic *A. macroura* (Fig.5) is a plant which is highly attractive for egg laying. It is a medium sized vine easily grown in a garden setting and once established needs little attention. The plant sends out runners along the ground which will climb up other plants but it can easily be maintained as a low growing plant. Propagation is either by seed or from cuttings which strike readily. It is an unusual plant having leaves with three lobes resembling that of a *Passiflora* sp.

and bizarre large flowers which have an offensive smell presumably to attract flies as pollinators. *Cressida cressida* also readily use the plant, with leaves close to the ground being very attractive for egg laying, and their larva develop well on it.

### *Aristolochia acuminata*



I use the native *A. acuminata* (Fig.6) for feeding the larva as it is a large vine which produces copious amounts of new growth. Also, it is easily grown in cultivation but requires a strong support or tree as it becomes a large vigorous vine which can easily overwhelm shrubs. Propagation is either from cuttings or more commonly from seed. It is best to grow the plant in a position with

excellent drainage as the roots of the mature plants can rot if too much water is





present. Seedlings are readily used by *Cressida cressida* as a food plant and larger plants are also used if the females can find a spot to land and hold on while depositing an egg. It is also a food plant for larva of *Ornithoptera priamus* in Nth. Qld.

The plant is widely distributed throughout S.E. Asia to New Guinea and Australia. Consequently, there are various forms of the species which vary in their vigour and growth habits. I have seen the plant growing in Sabah and Penang with larva of a *Troides* sp. present and also near Lae in Papua New Guinea where the larva of *Ornithoptera priamus* were feeding on it.

Photos Dennis Bell

Ed.: The spelling of the scientific name *Pachliopta polydorus queenslandica* in this article is taken from the checklist in Braby's, The merging of taxonomy and conservation biology: A synthesis of Australian butterfly systematics (Lepidoptera: Hesperioidea and Papilionoidea) for the 21st century. *Zootaxa* .2707.1.1 December 2010.

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## Lacewings – Beneficial Insects – *Bernie Franzmann*

A few years ago, I wrote an article on Australian ladybirds (Franzmann 2016). When we think about insects that are beneficial in the home garden, or in other commercial, agricultural situations, we usually think, firstly, of the ladybirds. There are of course many other groups of beneficials.

Note - this article is not about the beautiful lacewing butterflies of northern Australia.

The lacewings (Order Neuroptera) get their common name by having, well, lacy-looking wings, because of the extensive branching of the wing veins.

Lacewings go through a complete metamorphosis of an egg, larval and pupal stage, before becoming winged adults.

There are 14 families of Neuroptera in Australia, and they are a very diverse group.

The larvae of most of the families are predators of small insects, however, in one family, the Sisyridae, they feed on freshwater sponges.

Perhaps the most commonly-known larval stages are the antlions which construct cone shaped pits in the ground (Fig. 1). They bury themselves down in the bottom of the pits, with just their open jaws protruding. Wandering ants that fall into the pits are devoured by the larvae.

