

The Food Plants of the Birdwing Larvae

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Plants belonging to Aristolochiaceae are the food for several groups of Papilionidae, including the birdwing butterflies, and they occur worldwide in the Americas, Europe, Africa, Asia, Australia, New Guinea and the Solomon Islands.

For example, in Europe the larvae of *Zerynthia polyxena* (Denis & Schiffermüller) feed on *Aristolochia clematitis* Linnaeus while in the tropical Americas, India, Asia and Africa, Aristolochiaceae are food plants for a range of other papilionid butterflies.



Photo: D. Sands

Aristolochia clematitis



Photo: D. Sands

Above - Larva of *O. priamus poseidon* feeding on *Aristolochia acuminata*.

Right - Larva of *O. priamus urvillianus* (Guérin - Menéville), from New Ireland - a blue birdwing.

Matsuka (2001) recently discussed and figured many food plants of the birdwings. The larvae of birdwings in Australia, Papua New Guinea and the Solomon Islands feed on either *Aristolochia* spp. or *Paristolochia* spp. These are rainforest vines and mainly evergreen but in northern Australia at least two species, *Aristolochia acuminata* Lamarck (previously *A. tagala* Chamisso (Bossert, 1997)) and *A. chalmersii* O.C. Schmidt are often deciduous vines in dry open forest, where they may be seasonally utilised as food plants by the butterflies.

In Australia, about 20 species of Aristolochiaceae serve as food plants for larvae of the butterflies *Cressida cressida* (Fabricius), *Atrophaneura polydorus* (Linnaeus), *O. euphorion* (Gray), *O. richmondia* (Gray) and the subspecies of *Ornithoptera priamus* (Linnaeus: *O. priamus poseidon* (Doubleday)), *O. priamus pronomus* (Gray) and *O. priamus macalpinei* Moulds.



Photo: D. Sands

Several new Aristolochiaceae from Australia and Papua New Guinea (PNG) were described by Parsons (1996), including *P. alexandriana* Parsons and *P. meridionaliana* ssp. *popondetensis* Parsons, from the Oro Province of PNG. These two vines were said to be the food plants of *O. alexandrae*, whereas previously *Pararistolochia dieisiana* (O.C. Schmidt) M.J. Parsons, was thought to be the food plant of this butterfly (Straatman and Inoue 1984). *P. dieisiana* was said by Parsons (1996) to be known only from the East Sepik Province of PNG, outside of the butterfly's range.

Recent discussion as to the validity of *P. alexandriana* and *P. meridionaliana* as species distinct from *P. dieisiana*, has resulted from the variation in leaf and flower morphology observed in examples from the Oro Province. Hybridisation between *P. alexandriana* and *P. meridionaliana* ssp. *popondetensis* (C. Mercer pers. comm.) is apparently frequent (Parsons 1996). Unfortunately a neotype for *P. dieisiana* was not designated to replace the lost holotype, a move that would have helped to resolve this complex of species and the valid identification of *P. dieisiana*. Until the taxonomic status of *P. dieisiana* is resolved it is proposed to retain this name for the principal food plant of *O. alexandrae*.



Photo: D. Sands



Photo: D. Sands

Top – mature stem of *Pararistolochia dieisiana*.
 Left - the seed pod of *P. dieisiana*.
 Top right - the flower of *P. dieisiana*.
 Right – leaves of *P. dieisiana*



Photo: D. Sands



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Distinguishing the genera *Aristolochia* and *Pararistolochia*

A major distinction between the genera *Aristolochia* and *Pararistolochia* relates to the seed pods. *Aristolochia* spp. have dehiscent seed pods. The pods open at maturity on the vine and the seeds are then dispersed by wind. The seed pods of *Pararistolochia* spp. ripen on the vine and fall to the ground before opening. They generally do not open until mechanically fractured (i.e. by ground birds such as brush turkeys scratching them).



Aristolochia acuminata is found from southern China, throughout most of Southeast Asia, Papua New Guinea, the Solomon Islands and in northern Queensland. It is a common food plant for several papilionid butterflies and is cultivated in gardens. It is a typical *Aristolochia* with dehiscent seed pods.

Far left: clumps of *A. acuminata* in a New Britain village
Left: Flower of *A. acuminata*. Above and above right: dry and green seed pods of *A. acuminata*



Photo: D. Sands

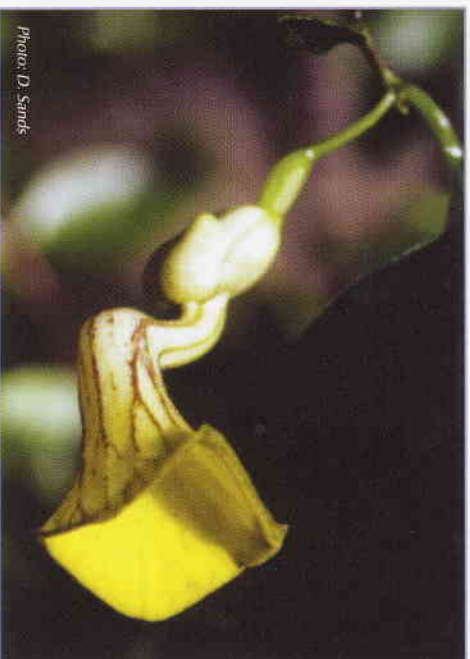


Photo: D. Sands

Far left: Mt Warning in northern New South Wales

Left: Flower of yellow *P. laheyana*

Parastolochia laheyana (F.M. Bailey) M.J. Parsons, is the high country larval food plant for *O. richmondia*. It occurs on the Queensland-New South Wales Border ranges surrounding Mount Warning. The pale pink colour form is found at Springbrook, Binna Burra, O'Reilly's, the Tweed Ranges, Mt Nardi and on the higher slopes of Mt Warning. A distinctive yellow form is believed to occur only in a small area of the

Border Ranges just north of Kyogle. It flowers from March to May and the seed pods slowly ripen to a yellowish-green before falling to the ground.



Photo: D. Sands



Photo: D. Sands

Left: Seed pod of *P. laheyana*

Far left: flower of pink *P. laheyana*

References

- Bosser, J. 1997. Identité de *Aristolochia acuminata* Lam. et de *A. tagala* Cham. (Aristolochiaceae). *Adansonia* (series 3) 19 (1): 169 – 170.
- Matsuka, H. 2001. *Natural History of Birdwing Butterflies*. Matsuka Shuppan, Tokyo, Japan. 368 pp.
- Parsons, M.J. 1996. New species of *Aristolochia* and *Parastolochia* (Aristolochiaceae) from Australia and New Guinea. *Botanical Journal of the Linnean Society*, 120: 199-238.
- Peckel, P.G. 1984. *Flora of the Bismarck Archipelago for Naturalists*. Office of Forests, Division of Botany, Lae, Papua New Guinea.
- Stratman, R. and Inoue, 1984. Identified hostplants of *Ornithoptera* species. *Tyo to Ga* 34: 124-126.