

# Larval Host Plants of the Butterflies under Papilionidae Family of the Western Ghats, India

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**Abstract:** Butterflies are flying jewels of nature. They are very diverse and has a great role the ecosystem maintenance. Butterflies are widely used as model insects in various studies related to evolution, ethology, insect - plant interactions and distribution (Settele & Kühn, 2009; Rayalu et al., 2013). Butterflies are among the most studied group of insects in relation to the selection of larval food plants and egg laying patterns and behavior. In relation to the larval food plant selection, considerable amount of database is available on the butterflies and their behavior. These studies have been carried out in almost all geographic regions of the world. (Wilkund, 1984; Kelly & Debinski, 1998; Settele et al., 2009; Curtis et al., 2015; Nitin et al., 2018; Robinson et al., 2001; Rayalu et al., 2013, Hill et al., 2018).

Butterflies are one of the most interesting and fascinating insect groups. Butterflies widely appreciated for their aesthetic value are important as ecological indicators [1]. One fifth of the world's total butterflies are available in India. The butterflies are selective in their choice of flowers and plants they visit. Butterflies and their caterpillars are dependent on specific host plants for foliage, nectar and pollen as their food. Selection of food plants for the immature stages by the adult females is a well-known fact in butterflies and other group of insects. Thus, butterfly diversity indirectly reflects overall plant diversity, especially that of herbs and shrubs, in the given area.

**Keywords:** Ecosystem, Model insects, Larval Food Plant, Egg laying.

## I. INTRODUCTION

This study reveals that some of the host plants play a vital role in attracting butterflies and increasing the diversity of butterflies. The present investigation has been carried out to enumerate the butterfly diversity greatly depends on the availability of host plants. The Western Ghats is a prominent, globally recognized biodiversity hotspot (Myers et al. 2000; Gunawardene et al. 2007).

The distribution and abundance of insect herbivores is influenced by the abundance of host plants (Knops et al. 1999). Larval host plants form an important aspect in a butterfly's lifecycle since caterpillars are usually herbivorous and often depend directly on a narrow set of plants that are acceptable to them based on nutritional and other chemical requirements. It is thus essential to meticulously document larval host plants of butterflies for conservation purposes or ecological studies, e.g., life history evolution and plant-insect interactions (Bach 1981; Faeth et al. 1981; Knops et al. 1999; Abdala-Roberts et al. 2015).

## II. RESULT

### FAMILY PAPILIONIDAE :

#### Subfamily Papilioninae

#### Tribe Leptocircini :

1. *Graphium agamemnon menides* (Fruhstorfer, 1904) — Dakhan Tailed Jay : *Annona glabra* (V.C. Balakrishnan pers. obs. 2017), *Annona muricata* (Wynter-Blyth 1957; Kunte 2000), *Annona squamosa* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Artabotrys hexapetalus* (Wynter-Blyth 1957; Kunte 2000), *Desmos chinensis* (Robinson et al. 2010), *Goniothalamus cardiopetalus* (Kunte 2006), *Guateria* (Robinson et al. 2010), *Milusa* (Robinson et al. 2010), *Milusa tomentosa* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Mitrephora heyneana* (Kunte 2006), *Polyalthia cerasoides* (Wynter-Blyth 1957; Kunte 2000), *Polyalthia longifolia* (Wynter-Blyth 1957; Kunte 2000;

Robinson et al. 2010), *Uvaria narum* (Nair 2005b) (Annonaceae). *Cinnamomum* (Wynter-Blyth 1957; Kunte 2000) (Lauraceae). Magnoliaceae (Robinson et al. 2010), *Magnolia* (Robinson et al. 2010), *Magnolia champaca* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Magnoliaceae). *Annona discolor* (Wynter-Blyth 1957; Kunte 2000) (Annonaceae).

**2. *Graphium antphates naira* (Moore, [1903]) — Sahyadri Five-bar Swordtail :** *Desmos chinensis* (Robinson et al. 2010), *Milium* (Wynter-Blyth 1957; Kunte 2000) (Annonaceae). *Magnolia doltsopa* (Wynter-Blyth 1957; Kunte 2000) (Magnoliaceae). An alternative name, *Graphium antphates alcibiades* (Fabricius, 1787).

**3. *Graphium doson eleius* (Fruhstorfer, 1907) — Dakhan Common Jay :** Annonaceae (Robinson et al. 2010), *Annona muricata* (V.C. Balakrishnan pers. obs. 2017), *Polyalthia* (Robinson et al. 2010), *Polyalthia longifolia* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Annonaceae). *Hunteria zeylanica* (Wynter-Blyth 1957; Kunte 2000) (Apocynaceae). *Cinnamomum* (Robinson et al. 2010), *Cinnamomum macrocarpum* (V.C. Balakrishnan pers. obs. 2017), *Cinnamomum malabratrum* (V.C. Balakrishnan pers. obs. 2017) (Lauraceae). *Magnolia grandiflora* (Wynter-Blyth 1957; Kunte 2000), *Magnolia liliifera* (Wynter-Blyth 1957; Kunte 2000), *Magnolia oblonga* (Robinson et al. 2010), *Trachelospermum asiaticum* (Wynter-Blyth 1957; Kunte 2000) (Magnoliaceae).

**4. *Graphium nomius nomius* (Esper, 1799) — Indian Spot Swordtail :** *Milium tomentosum* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Milium velutnum* (Wynter-Blyth 1957; Kunte 2000), *Polyalthia longifolia* (Robinson et al. 2010) (Annonaceae).

**5. *Graphium teredon* (C. & R. Felder, 1865) — Narrow-banded Bluebottle :** *Alseodaphne* (Robinson et al. 2010), *Alseodaphne owdenii* (Robinson et al. 2010), *Alseodaphne semecarpifolia* (Wynter-Blyth 1957; Kunte 2000), *Camphora officinalis* (Wynter-Blyth 1957; Kunte 2000), *Cinnamomum* (Robinson et al. 2010), *Cinnamomum camphora* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Cinnamomum macrocarpum* (Wynter-Blyth 1957; Kunte 2000), *Cinnamomum malabratrum* (Kunte 2006), *Cinnamomum micranthum* (Wynter-Blyth 1957; Kunte 2000), *Cinnamomum verum* (Wynter-Blyth 1957; Kunte 2000), *Litsea glutinosa* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Milium tomentosum* (P. Churi pers. obs. 2017), *Persea macrantha* (Wynter-Blyth 1957; Kunte 2000), *Persea odoratissima* (Robinson et al. 2010, Wynter-Blyth 1957; Kunte 2000) (Lauraceae). *Magnolia doltsopa* (Wynter-Blyth 1957; Kunte 2000) (Magnoliaceae). *Geijera salicifolia* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Rutaceae).

#### **Tribe Papilionini :**

**6. *Papilio buddha* Westwood, 1872 — Malabar Banded Peacock :** *Zanthoxylum rhetsa* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Rutaceae).

**7. *Papilio clyta clyta* Linnaeus, 1758 — Oriental Common Mime :** *Alseodaphne semecarpifolia* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Cinnamomum* (Robinson et al. 2010), *Cinnamomum camphora* (Wynter-Blyth 1957; Kunte 2000), *Cinnamomum macrocarpum* (Wynter-Blyth 1957; Kunte 2000), *Cinnamomum malabratrum* (Wynter-Blyth 1957; Kunte 2000), *Cinnamomum tamala* (P. Churi pers. obs. 2017), *Cinnamomum verum* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Clausena* spp. (V.C. Balakrishnan pers. obs. 2017), *Litsea deccanensis* (Wynter-Blyth 1957; Kunte 2000), *Litsea glutinosa* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Persea gamblei* (Robinson et al. 2010), *Ocotea lancifolia* (Robinson et al. 2010) (Lauraceae). *Sarcosperma arboretum* (Robinson et al. 2010) (Sapotaceae).

**8. *Papilio crino* Fabricius, 1793 — Common Banded Peacock :** *Chloroxylon swietenia* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Rutaceae).

**9. *Papilio demoleus demoleus* Linnaeus, 1758 — Oriental Lime Swallowtail :** *Cullen corylifolium* (Robinson et al. 2010; K. Kunte pers. obs. 2017), (Fabaceae). *Ziziphus* (Robinson et al. 2010), *Tilia* (Robinson et al. 2010) (Malvaceae). *Ziziphus jujuba* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Rhamnaceae). Rutaceae (Robinson et al. 2010), *Acronychia pedunculata* (Robinson et al. 2010), *Aegle* (Robinson et al. 2010), *Aegle marmelos* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Chloroxylon swietenia* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Citrus* (Robinson et al. 2010), *Citrus aurantifolia* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Citrus maxima* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Citrus sinensis* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Glycosmis pentaphylla* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Limonia*

*elephantum* (Robinson et al. 2010), *Murraya* (Robinson et al. 2010), *Murraya koenigii* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Ruta angustifolia* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Ruta graveolens* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Toddalia trifoliata* (Robinson et al. 2010) (Rutaceae).

**10. *Papilio dravidarum* Wood-Mason, 1880 — Malabar Raven :** *Clausena heptaphylla* (Kunte 2006), *Glycosmis pentaphylla* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Rutaceae).

**11. *Papilio helenus daksha* Hampson, [1889] — Sahyadri Red Helen :** Rutaceae (Robinson et al. 2010), *Citrus* (Robinson et al. 2010), *Citrus limon* (Wynter-Blyth 1957; Kunte 2000), *Clausena heptaphylla* (Kunte 2006), *Glycosmis pentaphylla* (Wynter-Blyth 1957; Kunte 2000, reported as *Glycosmis arborea*, which is a synonym of *G. pentaphylla*), *Phellodendron* (Wynter-Blyth 1957; Kunte 2000), *Toddalia asiatica* (Wynter-Blyth 1957; Kunte 2000), *Zanthoxylum acanthopodium* (Wynter-Blyth 1957; Kunte 2000), *Zanthoxylum rhetsa* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Rutaceae).

**12. *Papilio liomedon* Moore, [1875] — Malabar Banded Swallowtail :** *Acronychia pedunculata* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Melicope lunu-ankenda* (Wynter-Blyth 1957) (Rutaceae).

**13. *Papilio paris tamilana* Moore, 1881 — Sahyadri Paris Peacock :** Rutaceae (Robinson et al. 2010), *Citrus* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Melicope lunu-ankenda* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Toddalia asiatica* (Wynter-Blyth 1957; Kunte 2000), *Zanthoxylum ovalifolium* (Wynter-Blyth 1957; Kunte 2000), *Zanthoxylum oxyphyllum* (Wynter-Blyth 1957; Kunte 2000) (Rutaceae).

**14. *Papilio polymnestor polymnestor* Cramer, [1775] — Indian Blue Mormon :** *Garcinia xanthochymus* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Clusiaceae). *Atalanta racemosa* (Kunte 2006; Robinson et al. 2010), *Atalanta wightii* (Kunte 2006), *Citrus maxima* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Citrus limon* (Wynter-Blyth 1957; Kunte 2000), *Glycosmis pentaphylla* (Wynter-Blyth 1957; Kunte 2000), *Murraya koenigii* (Robinson et al. 2010), *Paramignya monophylla* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010) (Rutaceae).

**15. *Papilio polytes romulus* Cramer, [1775] — Indian Common Mormon :** *Aegle marmelos* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Atalanta racemosa* (Kunte 2006), *Citrus* (Robinson et al. 2010), *Citrus aurantifolia* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Citrus maxima* (Wynter-Blyth 1957; Kunte 2000), *Citrus limon* (Wynter-Blyth 1957; Kunte 2000), *Citrus medica* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Clausena anisata* (Saji et al. 2018), *Correa* (Robinson et al. 2010), *Glycosmis* (Robinson et al. 2010), *Glycosmis pentaphylla* (Wynter-Blyth 1957; Kunte 2000), *Murraya* (Robinson et al. 2010), *Murraya koenigii* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Murraya paniculata* (Wynter-Blyth 1957; Kunte 2000), *Ravenia spectabilis* (P. Churi pers. obs. 2017), *Triphasia* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Zanthoxylum* (Robinson et al. 2010), *Zanthoxylum rhetsa* (Wynter-Blyth 1957; Kunte 2000) (Rutaceae).

#### **Tribe Troidini :**

**16. *Pachliopta aristolochiae aristolochiae* (Fabricius, 1775) — Indian Common Rose :** *Aristolochia* (Robinson et al. 2010), *Aristolochia bracteolata* (Wynter-Blyth 1957; Kunte 2000), *Aristolochia griffithii* (Wynter-Blyth 1957; Kunte 2000), *Aristolochia indica* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Aristolochia tagala* (Wynter-Blyth 1957; Kunte 2000), *Thotea siliquosa* (Wynter-Blyth 1957; Kunte 2000) (Aristolochiaceae).

**17. *Pachliopta hector* (Linnaeus, 1758) — Crimson Rose :** *Aristolochia* (Robinson et al. 2010), *Aristolochia bracteolata* (Kalesh S. pers. obs. 2017), *Aristolochia griffithii* (Kalesh S. pers. obs. 2017), *Aristolochia indica* (Wynter-Blyth 1957; Kunte 2000; Robinson et al. 2010), *Aristolochia tagala* (Kalesh S. pers. obs. 2017) (Aristolochiaceae).

**18. *Pachliopta pandiyana* (Moore, 1881) — Malabar Rose :** *Thotea siliquosa* (Wynter-Blyth 1957; Kunte 2000) (Aristolochiaceae).

**19. *Troides minos* (Cramer, [1779]) — Sahyadri Birdwing :** *Aristolochia griffithii* (Wynter-Blyth 1957; Kunte 2000), *Aristolochia indica* (Robinson et al. 2010), *Aristolochia tagala* (Wynter-Blyth 1957; Kunte 2000), *Thotea siliquosa* (Wynter-Blyth 1957; Kunte 2000) (Aristolochiaceae).

**REFERENCES**

- [1] Settele J, Kühn E. Insect conservation. *Science*,2009:325(5936):41 - 42.  
Settele J, Shreeve T, Konvička M, Van Dyck H, (eds.). *Ecology of butterflies in Europe* Cambridge University Press, Cambridge, 2009, 513.
- [2] Curtis RJ, Brereton TM, Dennis RLH, Carbone C, Isaac N.J.B. Butterfly abundance is determined by food availability and is mediated by species traits. *J. Appl. Ecol*,2015:52:1676-1684.
- [3] Robinson GS, Ackery PR, Kitching IJ, Beccaloni GW, Hernandez LM. *Hostplants of the moth and butterfly caterpillars of the Oriental Region*. The Natural History Museum, London and Southdene Sdn. Bhd., Kuala Lumpur, 2001, 744.
- [4] Kunte, K., S. Sondhi & P. Roy (Chief Editors) (2018). *Buterflies of India*, v. 2.37. Indian Foundaton for Buterfies. URL: <http://www.ifoundbuterfies.org/>. accessed 14 March 2018.
- [5] Kalesh, S. & S.K. Prakash (2015). Additions to the larval host plants of butterflies of the Western Ghats, Kerala, South India (Rhopalocera, Lepidoptera): Part 2. *Journal of Bombay Natural History Society* 112: 111-114.
- [6] Kalesh, S. & S.K. Prakash (2007). Additions to the larval host plants of buterfies of the Western Ghats, Kerala, South India (Rhopalocera, Lepidoptera): Part 1. *Journal of Bombay Natural History Society*.104: 235-238.