

## **Hostplant Records and Natural History Notes on Costa Rican Butterflies (Papilionidae, Pieridae & Nymphalidae)**

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**Abstract.** Hostplant records for 209 species of butterflies in the families Papilionidae, Pieridae and Nymphalidae are reported from various habitats throughout Costa Rica to provide a basis for understanding fine-scale hostplant relationships of neotropical butterflies at the population level. Notes on egg, clutch-size, larval behavior, larval feeding, oviposition behavior, and hostplant microhabitat are given. New and unusual hostplant families and errors in the hostplant literature are discussed, and the possibilities of unrecognized sibling species masquerading under a single species name are indicated.

### **Introduction**

To students of butterflies it has become evident that hostplant relationships play an increasingly important role in butterfly biology. Hostplant data have been used in developing classifications and systematics at the family, subfamily, genus, and species levels (Müller, 1886; Singer et al., 1983; DeVries et al., 1985), and in some cases the hostplant has been used as a character in naming populations (e.g. Murphy & Ehrlich, 1984). Hostplant data are of paramount importance for elucidating broad-scale evolutionary patterns of host use among systematic lineages (Brues, 1924; Ehrlich & Raven, 1965; Benson et al., 1976), for understanding butterfly ecology at the community (Gilbert, 1984) and population (Ehrlich, 1984) levels, for the dynamics of host-breadth and host shifts (Singer, 1983, 1984), and for the development of mimicry theory (Gilbert, 1983) and ecological chemistry (Brower, 1984). In short, hostplant relationships are a basis upon which we rest many of our ideas about butterflies.

Taken as a whole, it appears from surveys of literature records that hostplant relationships are well understood for the majority of the systematic lineages of butterflies (Ehrlich & Raven, 1965; P. Ackery, in prep.), particularly at higher systematic levels. However, this is not true with respect to specific butterfly faunas at the genus and species levels. Perhaps the only places on earth where such relationships are well known,



but not completely known at these levels are in the U.S.A., England, parts of northern Europe and Japan. In these areas fine-scale hostplant data are available for entire faunas which can be used to develop systematic and ecological studies with a critical degree of resolution. In all other areas of the world such data are not available, and this is especially so in the tropics. Although the tropics contain the greatest diversity of butterfly species, compared to temperate regions, hostplant relationships of butterflies are poorly known, and least known of all in the neotropics. If we are to gain an understanding of the butterflies of the neotropics comparable to our knowledge of the temperate regions, it is important to have a more complete picture of hostplant relationships than currently exists. This is a tall order considering that the neotropics contain a butterfly diversity greater than any other region on earth (DeVries, 1986). One very useful method is to develop hostplant lists for butterfly faunas of specific areas.

During a long term and continuing study of the butterfly fauna of Costa Rica I have had the opportunity to rear a number of species, as well as the good fortune to work with colleagues who, although involved in studies of their own, have provided me with hostplant records to augment my work. I here summarize the hostplant records for 209 species of Costa Rican butterflies in the families Papilionidae, Pieridae and Nymphalidae reared between 1976 and 1982 by my colleagues and myself. The purpose of this paper is to provide a starting point for eventually understanding fine-scale hostplant relationships at the population level for neotropical butterflies. Natural history information is provided for both butterflies and hostplants in coded form along with each hostplant record. In the remainder of this paper I highlight some new and unusual hostplant records, point to instances where there may be several species currently placed under one name, and draw attention to what I believe to be errors in previous literature. Additional hostplant records of Costa Rican butterflies and an analysis of the ecological patterns of hostplant use which are evident in the present paper will be discussed in a future publication (DeVries, in prep.).

## Materials and Methods

Except where indicated, all hostplant records presented (Appendix I) have resulted from a larva feeding on a plant and developing into an adult. All records are from field collected eggs or larvae, except where otherwise noted. Oviposition records are indicated as such, the butterflies have been positively identified with a voucher specimen taken at the time of oviposition, or in a few cases, determined on the wing with the use of binoculars. Therefore, the vast majority of records reported here have voucher specimens in the collection of the author or the person responsible for the record.

**Butterfly Nomenclature.** The nomenclature follows DeVries (1986) which is modified and refined from DeVries (1983). Additional systematic references useful



for Costa Rican butterflies may be found in Ackery and Vane-Wright (1985), DeVries et al. (1985), Higgins (1981), Jenkins (1983) and Singer et al. (1983).

**Plant Determinations.** The hostplants in Appendix (I) are for the most part positively determined to genus (many to species), but in a few instances it was only possible to determine the plants to family due to undescribed taxa or insufficient plant material. The following people have lent their expertise in determining the hostplants: H. Bold, W. Burger, I. A. Chacon, R. Foster, L. D. Gomez, W. Haber, B. Hammil, L. Gilbert, G. Hartshorn, D. H. Janzen, S. Knapp, R. Marquis, R. Pohl, L. Poveda and F. G. Stiles. Useful references for identification of plants of Costa Rica include: Allen (1956), Burger (1971, 1977), Croat (1978), Daniels and Stiles (1979), Janzen and Leisner (1980) and Stiles (1980).

**Coded Information in Appendix I:** Explanations for the coded sequences in Appendix I are found in Tables I, II and III. This information is found in a series of columns located to the right of each butterfly taxon and corresponds to: hostplant identity, locality of record and who reared the butterfly, egg clutch-size, oviposition behavior, larval behavior, larval feeding and binomic notes concerned with the ovipositing butterfly and microhabitat of the hostplant respectively. Further details on localities, habitats, and butterfly biology in Costa Rica are found in DeVries (1986).

All hostplant records reported here are from Costa Rica except those coded \*AA and \*KS. These come from Barro Colorado Island, Panama and augment Costa Rican records. Except for those hostplant records marked with an asterisk and a set of initials preceding the locality code, all records are those of DeVries. The initials refer to records of the following people: AA = A. Aiello, IC = I. A. Chacon, RC = R. Cubero, SK = S. Koptur, LEG = L. E. Gilbert, WH = W. Haber, DJ = D. H. Janzen, JM = J. Mallet, RM = R. Marquis, KS = K. Steiner, MCS = M. C. Singer, FGS = F. G. Stiles, and TR = T. Ray.

## Comments

The hostplant records in Appendix I completely corroborate the pattern of relationship between hostplants and butterflies as described by Ehrlich and Raven (1965). There are, however, a few records in Appendix I which deserve special comment because they either represent hostplant families not reported in Ehrlich and Raven (1965), or they indicate a need for further study within the neotropical butterfly fauna as a whole. These records are briefly discussed here by butterfly family.

**Papilionidae:** The record of *Papilio cleotas* feeding on Moraceae requires confirmation since no papilionid species is known to feed on this plant family anywhere in the world. Hostplant records in the literature frequently report that *Papilio cresphontes* and *P. thoas* both utilize Rutaceae and Piperaceae as larval hostplants. Based on field experience and the data presented here I believe that such records are misidentifications of the butterfly species; the species are extremely similar in appearance. In Costa Rica *P. cresphontes* larvae feed only on Rutaceae,



and conversely, *P. thoas* larvae feed only on Piperaceae.

**Pieridae:** The records of *Catasticta* and *Pereute* feeding on Loranthaceae and the behavior and morphology of larvae and pupae suggest a close affinity to the extensive Old World genus *Delias*. The records also further amplify those reported in Ehrlich and Raven (1965). However, I believe the reference of *Pereute* feeding on the Lauraceae (Jørgensen, 1932) is in error (DeVries, 1982). I also believe the record of *Perrhybris lypera* feeding on Lauraceae is a plant misidentification (see Young, 1980, 1982; DeVries, 1982). The records of *Aphrissa statira* feeding on Bignoniaceae are very unusual for the Pieridae, and suggest either a chemical convergence between certain Bignoniaceae and Caesalpiniaceae or that there is more than a single species under the name *A. statira*.

**Nymphalidae:** The records of *Agrias amydon* on Erythroxylaceae represent an unusual hostplant family for the subfamily Charaxinae. It is further notable because of commercial interest in both the butterfly and chemistry of secondary chemicals of the hostplant genus. The record of *Zaretis itys* feeding on Piperaceae is unusual since its usual hostplants are Flacourtiaceae in the same habitat. Several interesting records are reported from the Nymphalinae. In my experience, the larvae of *Eunica monima* feed only on Burseraceae. I believe that the original record of this species feeding on Rutaceae (Dyar, 1912) represents a misidentification of the hostplant which subsequently became embedded in the literature. Muyschondt (1975) stated that Müller (1886) was in error for reporting *Diaethria marchalli* to feed on *Trema* (Ulmaceae) and said that in El Salvador he only found this species feeding upon Sapindaceae. In Costa Rica, *Trema* is the only hostplant for *D. marchalli* of which I am aware, suggesting that either the butterfly switches hostplant families in areas north of Costa Rica, or that there are two species of butterfly involved here. Data reported here suggest either that certain species of *Adelpha* are highly polyphagous, or that there are cryptic species involved under the same name (e.g. *A. boreas*, *A. celerio*, *A. heraclea*). *Adelpha melanthe*, on the other hand, changes hostplant family from east to west in Costa Rica, but all are closely allied within the Urticales. In the subfamily Satyrinae the record of *Megeuptychia antonoe* feeding on Cyclanthaceae is unusual, but Cyclanthaceae has recently been demonstrated to be a host of *Caligo* in Costa Rica as well (I. A. Chacon, pers. comm.). The record of *Euptychia insolata* feeding on Neckeraceae is the first record for any butterfly to utilize a member of the Bryophyta as a larval hostplant, although some members of the genus are known to feed on Lycopsidea (Singer et al., 1983). Lastly, the records of *Pierella* and *Cissia confusa* on Poaceae, Marantaceae, Palmae and Heliconiaceae indicate a high degree of polyphagy, mostly within the same habitat.

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Table 1. Numerical Codes for Hostplant Families in Appendix I.

|                    |                        |                             |
|--------------------|------------------------|-----------------------------|
| 1 Acanthaceae      | 17 Erythroxylaceae     | 33 Poaceae                  |
| 2 Amaranthaceae    | 18 Euphorbiaceae       | 34 Poaceae:Bambusoidea      |
| 3 Annonaceae       | 19 Fabaceae            | 35 Rubiaceae                |
| 4 Aristolochiaceae | 20 Flacourtiaceae      | 36 Rutaceae                 |
| 5 Asclepidaceae    | 21 Heliconiaceae       | 37 Sapindaceae              |
| 6 Bignoniaceae     | 22 Hernandiaceae       | 38 Selaginellaceae          |
| 7 Brassicaceae     | 23 Lauraceae           | 39 Simaroubaceae            |
| 8 Bromeliaceae     | 24 Loranthaceae        | 40 Solanaceae               |
| 9 Burseraceae      | 25 Marantaceae         | 41 Tiliaceae                |
| 10 Caesalpiniaceae | 26 Melastomataceae     | 42 Tropaeolaceae            |
| 11 Capparidaceae   | 27 Mimosaceae          | 43 Turneraceae              |
| 12 Caricaceae      | 28 Moraceae            | 44 Ulmaceae                 |
| 13 Compositae      | 29 Neckeraceae         | 45 Umbelliferae (=Apiaceae) |
| 14 Cyclanthaceae   | 30 Palmae (=Arecaceae) | 46 Urticaceae               |
| 15 Cyperaceae      | 31 Passifloraceae      | 47 Verbenaceae              |
| 16 Ericaceae       | 32 Piperaceae          |                             |

Table 2. Codes for Rearing Localities Cited in Appendix I.

|                                    |                                      |
|------------------------------------|--------------------------------------|
| AT = Atenas (AL)                   | LS = Finca la Selva (HER)            |
| BLH = Bajo la Hondura (SJ)         | MV = Monte Verde (PUN)               |
| BAR = Barranca (PUN)               | PATT = Patarra (SJ)                  |
| BCI = Barro Colorado               | RCN = Rincón de Osa (PUN)            |
| Island (PAN)                       | SV = San Vito de Java (PUN)          |
| CDM = Cerro de la Muerte (SJ)      | SRNP = Parque Santa Rosa (GUAN)      |
| CURR = Curridibat (CAR)            | SJ = San José (SJ)                   |
| COP = Copey (SJ)                   | TUR = Turrialba (CAR)                |
| CAN = Cañas (GUAN)                 | UCR = Universidad de Costa Rica (SJ) |
| CAR = Parque Braulio Carrillo (SJ) | VTUR = Volcán Turrialba (CAR)        |
| CVDO = Parque Corcovado (PUN)      | VBVA = Volcán Barva (HER)            |
| EST = Estrella de Cartago (CAR)    | VSM = Volcán Santa Maria (GUAN)      |
| ELROD = Finca el Rodeo (SJ)        | VDS = Virgen del Socorro (AL)        |
| GOL = Golfito (PUN)                | VM = Volcán Miravalles (AL)          |
| HER = Heredia (HER)                |                                      |
| LALT = Finca las Alturas (PUN)     |                                      |

Costa Rican Province Codes are: (AL) = Alajuela, (CAR) = Cartago, (GUAN) = Guanacaste, (HER) = Heredia, (PUN) = Puntarenas, (SJ) = San José. The code (PAN) = the country Panamá.



Table 3. Codes Used for Eggs, Larvae and Hostplant in Appendix I.

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**Eggs and Oviposition**

S = eggs laid singly

C = eggs laid in clusters

1 = female may oviposit several times on same plant.

2 = female usually oviposits only once on a plant.

3 = female always oviposits several times on same plant.

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**Larval Behavior**

S = solitary

G = gregarious

1 = larvae feed on new, then old leaves.

2 = larvae will feed on all leaves.

3 = larvae feed only on young leaves.

4 = larvae feed only on older leaves.

5 = larvae feed on plant parts other than leaves.

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**Hostplant Microhabitat**

1 = female oviposits on plants occurring in open areas.

2 = female oviposits on plants occurring in forest.

3 = female oviposits on plants occurring at forest or riparian edges.

4 = female oviposits on plants occurring in forest light gaps.

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**Appendix I.** Reading from left to right the information in this appendix is divided into five columns corresponding to: 1) butterfly taxa, 2) hostplant, locality and authorships of rearing, 3) clutch-size of eggs and frequency of oviposition, 4) larval behavior and feeding and 5) microhabitat of hostplant and natural history notes. Explanations for the coded sequences are found in the text and in Tables 1, 2 and 3.



| Species                                 | Hostplant & Locality                                                                                               | Egg & Larval Data                | Bionomic Notes of Host and Butterfly                                                                                |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>FAMILY: PAPILIONIDAE</b>             |                                                                                                                    |                                  |                                                                                                                     |
| <b>GENUS: Battus</b>                    |                                                                                                                    |                                  |                                                                                                                     |
| <i>polydamas</i> L.                     | <i>Aristolochia</i> (4)<br><i>grandiflora</i> SJ<br><i>anguicida</i> SRNP<br>undetermined LS                       | C G1<br>C G1                     | All hostplants are 3 and 4. Egg clusters range from 5 to 10.                                                        |
| <i>belus</i><br><i>varus</i> Kol.       | <i>Aristolochia</i> (4)<br><i>grandiflora</i> SJ, TUR.<br>undetermined LS.<br>undetermined CVDO<br>undetermined SV | S1 S1<br>S1 S1<br>S1 S1<br>S1 S1 | Hostplants are 3, 4 and riparian edges.                                                                             |
| <i>crassus</i> Cr.                      | <i>Aristolochia</i> (4)<br><i>veraguensis</i> CVDO<br>undetermined LS                                              | C G1<br>C G1                     | Hostplants are 2, 3, 4 and riparian edges.<br>Egg clusters range from 20 to 40 eggs.                                |
| <b>GENUS: Parides</b>                   |                                                                                                                    |                                  |                                                                                                                     |
| <i>photinus</i> Dblly.                  | <i>Aristolochia</i> (4)<br><i>pilosa</i> ELROD, AT.                                                                | C G2                             | Hostplants are 3 and 4 provided they receive direct sunshine. Plants are usually juvenile growing along the ground. |
| <i>childrenae</i> Gray                  | <i>Aristolochia</i> (4)<br><i>tonduzii</i> LS.<br>undetermined *RM LS                                              | S1 S1<br>S1 S1                   | Hostplants are all 2, either young or old, provided they have vigorous new growth.                                  |
| <i>sessostris</i><br><i>zestos</i> Gray | <i>Aristolochia</i> (4)<br>undetermined VM                                                                         | ? ?                              | This rearing was of six mature larvae all on the same juvenile plant, eating all leaves.                            |



|                         |                                                                                                                                       |                      |                      |                                                                                                                                                                                                                                       |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>iphidamas</i> Fab.   | <i>Aristolochia</i> (4)<br><i>veraguensis</i> CVDO, AT.<br><i>af. grandiflora</i> CAR.<br><i>tonduzi</i> LS.<br>undetermined *JM CVDO | S1<br>S1<br>S1<br>?  | S1<br>S1<br>S1<br>S1 | Hostplants are 2, 3, 4 and riparian edges where microhabitats have been slightly disturbed. Plants are either juvenile or mature.                                                                                                     |
| <i>lycimenes</i> Boisd. | <i>Aristolochia</i> (4)<br><i>maxima</i> *IC VSM<br>undetermined *RM LS.                                                              | ?<br>?<br>?          | S1<br>S1<br>S1       | Hostplants are 3 and 4, either juvenile or mature with new shoots.                                                                                                                                                                    |
| <i>arcas</i>            | <i>Aristolochia</i> (4)<br><i>anguicida</i> SRNP<br><i>grandiflora</i> VDS<br><i>tonduzii</i> LS<br>undetermined CAR                  | S1<br>S1<br>S1<br>S1 | S1<br>S1<br>S1<br>S1 | All hostplants are 2, 3, 4, either young or mature plants and usually close to the ground.                                                                                                                                            |
| GENUS: <i>Eurytides</i> |                                                                                                                                       |                      |                      |                                                                                                                                                                                                                                       |
| <i>epidaus</i> Dbldy.   | <i>Annona</i> (3)<br><i>reticulata</i> SRNP                                                                                           | S1                   | S1                   | Females oviposit on saplings or mature forest trees occurring in sunny places within the forest.                                                                                                                                      |
| <i>euryleon</i>         | <i>Annona</i> (3)<br><i>glabra</i> MV.<br><i>Guatteria</i> (3)<br><i>oliviformis</i> VSM                                              | S1<br>S1             | S1<br>S3             | Both hostplant genera are 1, 2, 3, 4 and may range from seedlings to mature forest trees. It is of interest that only young leaves of <i>Guatteria</i> are acceptable to larvae.                                                      |
| <i>branchus</i> Dbldy.  | <i>Annona</i> (3)<br><i>reticulata</i> *DJ (81-SRNP-249)                                                                              | ?                    | ?                    | Janzen reared this species from a solitary larva. No information on leaves or plant condition.                                                                                                                                        |
| <i>orabilis</i> Butler  | <i>Guatteria</i> (3)<br><i>tonduzii</i> VDS                                                                                           | S3                   | ?                    | The female lays many eggs in the axils of new growth leaves of large subcanopy trees along riparian edges. I have observed oviposition a number of times over the course of three years but have not reared larvae past third instar. |



| Species                  | Hostplant & Locality                                                                                                                                                                                                                                                                 | Egg & Larval Data       | Bionomic Notes of Host and Butterfly                                                                                                         |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| GENUS: Papilio           |                                                                                                                                                                                                                                                                                      |                         |                                                                                                                                              |
| <i>cresphontes</i> Cr.   | <i>Citrus</i> (36)<br>several species SV, AT, GOL, PAT.<br><i>Zanthoxylum</i> (36)<br><i>setulosum</i> SRNP, CAN, CVDO<br><i>Essenbeckia</i> (36)<br><i>litoralis</i> *DJ (79-SRNP-106)                                                                                              | S1 S1<br>S1 S1<br>S1 S1 | All <i>Citrus</i> = 1, <i>Zanthoxylum</i> = 2, 3 on medium sized trees in the forest. Janzen's record is from a late instar larva.           |
| <i>thoas</i>             | <i>Piper</i> (32)                                                                                                                                                                                                                                                                    |                         |                                                                                                                                              |
| <i>nealces</i> R & J     | <i>tuberculatum</i> SRNP, AT<br><i>sancti-felicitis</i> LS<br><i>marginatum</i> *DJ (81-SRNP-1046)<br><i>amalago</i> *DJ (81-SRNP-827)<br><i>auritum</i> LS<br><i>multiplinerivium</i> *RM LS<br><i>reticulatum</i> *JM CVDO<br><i>friedrichsthalii</i> *JM CVDO<br>undetermined VDS |                         | All plants are either 1 or 4 depending on the species and the habitat. All eggs are S2; all larvae are S1.                                   |
| <i>polixenes</i>         | <i>Apium</i> (45)                                                                                                                                                                                                                                                                    |                         |                                                                                                                                              |
| <i>stabilis</i> R & J    | <i>leptophyllum</i> SJ, VDS, VB, PAT, COP, TUR.<br><i>Foeniculum</i> (45)<br><i>vulgare</i> MV.                                                                                                                                                                                      | S1 S2<br>S1 S2          | Both hostplants are 1, females oviposit on young and mature plants.                                                                          |
| <i>cleotas</i>           | <i>Sorocea</i> (28)                                                                                                                                                                                                                                                                  |                         |                                                                                                                                              |
| <i>archytas</i> Hop.     | <i>trophoides</i> *WH VM                                                                                                                                                                                                                                                             | ? ?                     | Haber reared this species from a solitary mature larva feeding on mature leaves. This represents a very unusual record for the Papilionidae. |
| <i>victorinus</i>        | <i>Persea</i> (23)                                                                                                                                                                                                                                                                   | ? ?                     |                                                                                                                                              |
| <i>vulneratus</i> Butler | <i>americana</i> *WH MV                                                                                                                                                                                                                                                              | ? ?                     | Haber reared this species from a solitary late                                                                                               |



instar larva feeding on all leaves of an open grown tree.

S2 S3 All of the hostplants are 4, but plants in light  
?2 S3 gaps are in deep shade. The females oviposit on  
S? S3 saplings about 1 meter tall.

C G1 *Cassimiroa* and *Citrus* are 1 and from pre-  
vious experience in Santa Rosa I assume that  
*Zanthoxylum* is either 1 or 4. Females ovi-  
posit on young or mature plants.

C G1  
C? G1

*Hernandia* (22)

*didymanthera* LS  
undetermined CAR  
undetermined \*RM LS

*Cassimiroa* (36)

*edulis* SJ

*Citrus* (36)

various species CAR, CVDO, TUR, LS,

PAT

*Zanthoxylum* (36)

*setulosum* \*DJ (79-SRNP-163)

FAMILY: PIERIDAE

GENUS: Dismorphia

*amphiona*

*praxinoe* Dbldy.

*Inga* (27)

undetermined CAR

undetermined LS

*sapindoides* \*SK TUR

*densiflora* \*SK TUR

S1 S2 Hostplants are all 2, 3, or 4 in shady areas.  
S1 S2 Females oviposit on saplings or medium sized  
S1 S2 trees in the understory. Larvae usually eat old  
S1 S2 leaves but all are acceptable.

*Inga* (27)

undetermined VB

S1 S? I have observed oviposition but have not reared  
larvae. The female oviposited four eggs on the  
same sapling in shady understory of cloud  
forest habitat.

*Inga* (27)

undetermined BLH

undetermined CAR

*densiflora* \*SK MV

S1 S3 Hostplants are 2, 3 and 4 depending on the  
S1 S3 habitat. All plants are saplings.  
S1 S3

*birchalli* Hew.

*anchisiades*

*ideaus* Fab.

*zathoe*

*pallidula* But. & Dru.



| Species                                        | Hostplant & Locality                                                                                                         | Egg & Larval Data                | Bionomic Notes of Host and Butterfly                                                                                                                                              |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>crisia</i><br><i>lubina</i> But.            | <i>Inga</i> (27)<br>undetermined EST<br>undetermined *SK MV<br><i>Pithecellobium</i> (27)<br><i>brenesii</i> *WH MV          | S1 S1<br>S1 S1<br>?              | All hostplants are 2, 3 and 4 and range from understory saplings to mature canopy trees. Females will lay from 5 to 15 eggs on the same plant depending on the size of the plant. |
| <i>zaela</i><br><i>oreas</i> Sal.              | <i>Inga</i> (27)<br>undetermined CAR                                                                                         | S1 S2                            | Hostplants are 3 and 4 and all are saplings in the understory or in shady light gaps.                                                                                             |
| GENUS: <i>Lieinix</i><br><i>nemesis</i> G & S  | <i>Inga</i> (27)<br><i>mortonia</i> *SK MV<br><i>longispica</i> *SK MV<br><i>brenesii</i> *SK MV<br><i>densiflora</i> *SK MV | S1 S3<br>S1 S3<br>S1 S3<br>S1 S3 | Hostplants are 3 and 4. This species can apparently feed on a variety of species of <i>Inga</i> but is restricted entirely to new growth leaves.                                  |
| GENUS: <i>Anteos</i><br><i>clorinde</i> Godart | <i>Cassia</i> (10)<br><i>emarginata</i> SRNP                                                                                 | S1 S2                            | Hostplants are 1 and may be young or mature.                                                                                                                                      |
| <i>mareula</i> Fab.                            | <i>Cassia</i> (10)<br><i>emarginata</i> SRNP                                                                                 | S1 S1                            | Hostplants are 1 and may be young or mature.                                                                                                                                      |
| GENUS: <i>Phoebis</i><br><i>argante</i> Fab.   | <i>Cassia</i> (10)<br><i>biflora</i> SRNP<br><i>fruticosa</i> LS<br><i>Pentaclethra</i> (27)<br><i>macroloba</i> LS          | S1 S1<br>S1 S1<br>S1 S1          | All hostplants are 1 except <i>Pentaclethra</i> which may be 4. All range from saplings to mature trees and may be seedlings in <i>Pentaclethra</i> .                             |







| Species                                           | Hostplant & Locality                                                    | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                                                                                                                                                                                                                                                            |
|---------------------------------------------------|-------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>dina</i> West.                                 | <i>Picramnia</i> (39)<br><i>alleni</i> ELROD<br><i>quaternaria</i> SRNP | S1 S3<br>S1 S3    | Hostplants are 2, 3 or 4 provided there is some shade. Plants range from saplings to mature trees.                                                                                                                                                                                                              |
| <i>daira</i> Feld.                                | <i>Aeschynomene</i> (19)<br>undetermined SRNP, CAN.                     | S1 S1             | Hostplant 1, usually in recently disturbed pastures and roadsides.                                                                                                                                                                                                                                              |
| GENUS: <i>Catasticta</i><br><i>teutila</i> Dbldy. | <i>Dendrophthora</i> (24)<br><i>costaricensis</i> VTUR, CDM             | C G2              | The hostplant is an epiphytic parasite. There has been confusion in the literature, because the host tree rather than the parasite was often taken to be the hostplant of the butterfly. Females oviposit on mature hostplants occurring on mature emergent canopy trees or on large remnant trees in pastures. |
| <i>theresa</i> Butler                             | <i>Antidaphne</i> (24)<br><i>viscoides</i> COP                          | C G2              | The hostplant is an epiphytic parasite of <i>Alnus</i> (Betulaceae) that occurs along riparian edges. Egg clusters range from 10 to 50 eggs.                                                                                                                                                                    |
| <i>nimbice</i><br><i>bryson</i> G & S             | <i>Struthanthus</i> (24)<br>undetermined *IC PAT                        | ? G2              | Chacon reared this species from a mass of early instar larvae feeding on all leaves. The hostplant is an epiphytic parasite of forest trees.                                                                                                                                                                    |
| GENUS: <i>Pereute</i><br><i>cheops</i> Staud.     | <i>Antidaphne</i> (24)<br><i>viscoides</i> COP                          | C G               | This is a single cluster of eggs after I observed oviposition. Larvae have not been reared past first instar.                                                                                                                                                                                                   |



*charops* Boisd.

"mistletoe" (24)  
undetermined LALT

C G I have repeatedly watched, with binoculars, several females oviposit large clusters of eggs on what was certainly Loranthaceae. In addition I have seen large groups of larvae feeding on leaves of the same epiphytic parasite. These larvae descended the tree trunk and pupated on the tree trunk. The hostplants were growing on large emergent canopy trees along riparian edges.

# GENUS: *Hesperocharis*

*crocea* Bates

*Struthanthus* (24)  
undetermined \*IC SJ

? ? Chacon reared this species from a small aggregation of late instar larvae feeding on all leaves. The hostplant is an epiphytic parasite.

# GENUS: *Itaballia*

*demophile* J & T

*Capparis* (11)  
*indica* SRNP, BAR  
*frondosa* \*WH CAN

S1 S1 Hostplants are 3 and 4 and are mature woody shrubs.  
? S1

*caesia*

*Podandrogynae* (11)  
*pulcherrima* BLH, CAR, COP, SV

S1 S1 Hostplant is 2 or 3 usually along riparian edges. Females oviposit on young and mature plants. Larvae also feed on flower buds.

*tenuicornis* B & D

# GENUS: *Pieriballia*

*mandella*

*Capparis* (11)  
*pseudocacao* \*WH MV

? S? Haber reared this species from a solitary late instar larva feeding on all leaves. The plant occurred as a small understory tree.

*noctipennis* B & D



| Species                                          | Hostplant & Locality                                                                                             | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                                                                                                                                                              |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GENUS: <i>Perrhybris</i><br><i>pyrrha</i> Fab.   | <i>Capparis</i> (11)<br><i>isthmensis</i> CVDO                                                                   | C G2              | Hostplant is 2 and 4, either young or mature tree.                                                                                                                                                                |
| <i>lypera</i> Kollar                             | <i>Capparis</i> (11)<br><i>pittieri</i> LS<br><i>pittieri</i> *WH LS<br>undetermined *LEG LS                     | C G2<br>C ?       | Hostplants are 2, 3 or 4, ranging from seedling to sapling plants. Egg clusters range from 10 to 50 per leaf.                                                                                                     |
| GENUS: <i>Ascia</i><br><i>monuste</i> L.         | <i>Lepidium</i> (7)<br>undetermined SJ<br><i>Crataeva</i> (11)<br>undetermined *LEG CVDO                         | S1 S1<br>S1 ?     | Hostplant is always 1 and in areas of recent disturbance. Both young and mature plants are acceptable to ovipositing females. The <i>Crataeva</i> record is an oviposition as viewed through a Questar telescope. |
| <i>josepha</i> G & S                             | <i>Capparis</i> (11)<br><i>indica</i> SRNP, CAN<br><i>incana</i> *DJ (81-SRNP-1086)                              | S1 S1<br>? S1     | Hostplants are 3 and 4 and may be sapling or mature trees.                                                                                                                                                        |
| GENUS: <i>Leptophobia</i><br><i>aripa</i> Boisd. | <i>Nasturtium</i> (7)<br><i>officinale</i> SV, EST, CAR.<br><i>Tropaeolum</i> (42)<br><i>marizianum</i> VDS, CAR | C G2<br>C G2      | Both hostplants are riparian edge species and usually grow in bright sunshine. Plants may be young or mature.                                                                                                     |

FAMILY: NYMPHALIDAE  
SUBFAMILY: CHARAXINAE



GENUS: *Archaeoprepona**demophon* L.*Nectandra* or *Ocotea* (23)  
undetermined LS

S1 S1 Hostplants are 3 or 4 and range from young to mature trees. Larvae rest on frass chains.

*Ocotea* (23)*veraguensis* \*DJ (81-SRNP-218)

? S1

*amphimachus*  
*gulina* Fruh.*Persea* (23)*americana* VB*Phoebe* (23)

S1 S1 Hostplants may be 1, 2, 3 or 4 depending on the habitat and range from seedlings to

undetermined \*WH MV

? S?

mature forest trees. Larvae rest on frass chains.

GENUS: *Prepona**laertes**Inga* (27)*octavia* Fruh.*ruiziana* \*JM CVDO

? S?

Records are from late instar larvae which fed on all leaves of a forest edge tree.

GENUS: *Agrias**amydon**Erythroxylum* (17)*havanense* \*DJ (80-SRNP-209)

? S2

Both records are from solitary late instar

*philatelica* DeVr.

undetermined \*TR LS

? S2

larvae feeding on all leaves. The hostplant is an understory shrub along edges and in gaps.

GENUS: *Siderone**marthesia* Cr.*Casearia* (20)*sylvestris* \*DJ (81-SRNP-339)

? S2

The hostplants are 2, 3 or 4 and range from saplings to mature trees. *Zuelania* records*Zuelania* (20)*quidonia* \*DJ (81-SRNP-1045)

? S2

only on saplings.

GENUS: *Zaretis**itys* Cr.*Ryanea* (20)*speciosa* LS

S1 S1

All hostplants are 2, 3 and 4 and range from saplings to mature forest trees, except *Pi-**Laetia* (20)

S1 S1

peraceae, which are herbaceous. This species

*procera* LS



| Species                                                         | Hostplant & Locality                                                                                                                                                                                            | Egg & Larval Data                 | Bionomic Notes of Host and Butterfly                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                 | <i>Casearia</i> (20)<br><i>nitida</i> LS<br><i>arborea</i> LS<br><i>corymbosa</i> *DJ (81-SRNP-272)<br><i>arguta</i> *DJ (81-SRNP-232)<br>undetermined *JM CFDO<br><i>Piper</i> (32)<br><i>arieianum</i> *RM LS | S1<br>S1<br>?<br>?<br>?<br>?<br>? | feeds on a wide variety of hosts at La Selva, which also may be found to be the case in the Pacific drainage. Of interest is that Atlantic and Pacific drainage adults look very different; a detailed comparison of the early stages should provide an insight to whether or not the name <i>ellops</i> should be applied to the Pacific drainage insects. |
| GENUS: <i>Consul</i><br><i>fabius</i> Dbldy.                    | <i>Piper</i> (32)<br><i>sancti-felicii</i><br><i>tuberculatum</i><br>undescribed species<br><i>auritum</i> *JM CVDO<br><i>amalago</i> *DJ (81-SRNP-600)                                                         | S1<br>S1<br>?<br>?<br>?           | Hostplants are 2, 3 and 4. Early instars rest on frass chains, later instars rest in a tube.                                                                                                                                                                                                                                                                |
| <i>jansoni</i> Salvin                                           | <i>Piper</i> (32)<br><i>reticulatum</i> *JM CVDO<br>undetermined CAR<br><i>reticulatum</i> *RM LS                                                                                                               | ?<br>?<br>?                       | All records of this species are from solitary late instar larvae from hostplants growing along forest or riparian edges.                                                                                                                                                                                                                                    |
| GENUS: <i>Hypna</i><br><i>clytemnestra</i> Cr.                  | <i>Croton</i> (18)<br><i>schiedeanus</i> *RM LS                                                                                                                                                                 | ?<br>?                            | Marquis reports this from a solitary late instar larva feeding on a sapling plant. The larva rests on frass chains.                                                                                                                                                                                                                                         |
| GENUS: <i>Memphis</i><br><i>eurypyle</i><br><i>confusa</i> Hall | <i>Croton</i> (18)<br><i>jalapensis</i> SJ, ELROD                                                                                                                                                               | S1<br>S1                          | Hostplant is 3 or riparian edges, ranging from                                                                                                                                                                                                                                                                                                              |



|                                           |                                                                                       |              |                |                                                                                                                                                                        |
|-------------------------------------------|---------------------------------------------------------------------------------------|--------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>glycerium</i> Dbldy.                   | <i>Croton</i> (18)<br><i>jalapensis</i> ELROD, AT                                     | S1           | S1             | saplings to mature trees.<br>Hostplant is 3, ranging from saplings to mature trees. Early instars rest on frass chains, later roll a tube.                             |
| <i>aieda</i> Guer.-Men.                   | <i>Acalypha</i> (18)<br><i>garnieri</i> SRNP                                          | S1           | S1             | Hostplant is 3 or 4, ranging from saplings to mature shrubs. Early instars make frass chains, later they roll a tube.                                                  |
| <i>arginussa</i><br><i>eubaena</i> Boisd. | <i>Croton</i> (18)<br>undetermined SJ, VB<br>undetermined AT<br><i>schiedeanus</i> LS | S1<br>?<br>? | S2<br>S2<br>S2 | Hostplants are 2, 3 or 4 and range from saplings to mature forest trees. Early instars make frass chains, later they roll a tube.                                      |
| <i>pithyusa</i> Felder                    | <i>Croton</i> (18)<br><i>jalapensis</i> AT, SJ<br><i>schiedeanus</i> *JM CVDO         | S1<br>?      | S2<br>S?       | Hostplants are 1, 2, 3 or 4 and range from saplings to mature forest trees. Early instars make frass chains, later they roll a tube.                                   |
| <i>beatrix</i> Druce                      | <i>Piper</i> (32)<br>undetermined EST, CAR                                            | ?            | S2             | This species is recorded from solitary late instar larvae feeding on all leaves. The hostplant is a semi-woody vine growing at the bases of large trees in the forest. |
| <i>artacaena</i> Hew.                     | <i>Croton</i> (18)<br><i>schiedeanus</i> LS<br><i>schiedeanus</i> *JM CVDO            | S1<br>?      | S2<br>S2       | Hostplants are 3 or 4 but most commonly along riparian edges. Early instars make frass chains, later they make tubes.                                                  |
| <i>oenomais</i> Boisd.                    | <i>Croton</i> (18)<br><i>bilbergianus</i> *AA (79-70, 79-101)                         | S            | S3             | Aiello reared these from Barro Colorado, Panama. There the hostplant occurs as a small tree in light gaps.                                                             |
| <i>cleomestra</i> Hew.                    | <i>Piper</i> (32)<br>undescribed species LS<br><i>xanthostachyum</i> *RM LS           | ?<br>?       | S2<br>S2       | Hostplants are 2 or 4; one is an epiphytic vine, the other terrestrial. Early instars make frass chains, later they roll tubes.                                        |



| Species                   | Hostplant & Locality                                              | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                                                                                                              |
|---------------------------|-------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>morvus</i>             | <i>Persea</i> (23)                                                | ?                 | Chacon records this species from a solitary late instar larva. The host was a mature tree along forest edge. Mature larvae roll tubes.                            |
| <i>boisduvalli</i> Comst. | undetermined *IC LS                                               | S2                |                                                                                                                                                                   |
| <i>forreri</i> G & S      | <i>Ocotea</i> (23)                                                | ?                 | Hostplant is 2, 3 or 4. Early instars make frass chains, last instars roll tubes.                                                                                 |
|                           | <i>veraguensis</i> *DJ (81-SRP-939)                               | S1                |                                                                                                                                                                   |
| FAMILY: NYMPHALIDAE       |                                                                   |                   |                                                                                                                                                                   |
| SUBFAMILY: NYMPHALINAE    |                                                                   |                   |                                                                                                                                                                   |
| GENUS: <i>Marpesia</i>    |                                                                   |                   |                                                                                                                                                                   |
| <i>petreus</i> Bates      | <i>Ficus</i> (28)                                                 | S1                | Hostplants are 1, 2, 3 and 4 and usually large trees.                                                                                                             |
|                           | undetermined SRNP                                                 | ?                 |                                                                                                                                                                   |
|                           | <i>goldmani</i> *DJ (81-SRNP-158a)                                | S1                |                                                                                                                                                                   |
| <i>chiron</i> Fab.        | <i>Brosimum</i> (28)                                              | ?                 | Both records are from late instar larvae on mature forest trees.                                                                                                  |
|                           | <i>alicastrum</i> *DJ (80-SRNP-113)                               | S2                |                                                                                                                                                                   |
|                           | <i>lactescens</i> *RM LS                                          | S2                |                                                                                                                                                                   |
| <i>merops</i> Boisd.      | <i>Brosimum</i> (28)                                              | ?                 | This is a probable record based on mature larvae crawling down the tree trunk to pupate. The tree was isolated along forest edge. This record needs verification. |
|                           | <i>lactescens</i> LS                                              | ?                 |                                                                                                                                                                   |
| GENUS: <i>Colobura</i>    |                                                                   |                   |                                                                                                                                                                   |
| <i>dirce</i> L.           | <i>Cecropia</i> (28)                                              |                   | All of my records have eggs laid in loose clusters of 10 to 30 eggs on saplings to mature trees. These have resulted in small clusters of                         |
|                           | various species: SRNP, MV, SV,<br>TUR, SJ, LALT, VSM, CVDO,<br>AT |                   |                                                                                                                                                                   |



larvae that are semi-gregarious. J. Mallet reared "dirce" from La Selva and found gregarious masses of larvae composed of more than 30 individuals from emergent trees. There are striking differences in larval coloration suggesting that perhaps there are two species (*dirce* and *dirceoides*) as indicated in Sepp (1988).

# GENUS: *Historis*

*odius* Fab.

*Cecropia* (28)

*peltata* SRNP, AT, VSM  
undetermined LS, CAR, TUR

|    |    |                                                                                                                                                                                 |
|----|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S1 | S2 | Hostplants are usually 3 or 4 depending on the habitat, ranging in size from saplings to mature trees. Early instars make frass chains, later they rest on the apical meristem. |
| S1 | S2 |                                                                                                                                                                                 |

*acherontia* Fab.

*Cecropia* (28)

*peltata* SRNP, CVDO

|    |    |                                                                                    |
|----|----|------------------------------------------------------------------------------------|
| S1 | S1 | Hostplants are usually saplings along edges. Larval behavior as for <i>odius</i> . |
|----|----|------------------------------------------------------------------------------------|

# GENUS: *Smyrna*

*blomfieldia*  
*datis* Fruh.

*Urera* (46)  
*baccifera* SRNP

|   |    |                                                                                                         |
|---|----|---------------------------------------------------------------------------------------------------------|
| ? | S2 | I have reared this from a solitary late instar larva. In SRNP the hostplant occurs as a riparian plant. |
|---|----|---------------------------------------------------------------------------------------------------------|

# GENUS: *Pycina*

*zamba zelys* G & S

*Urera* (46)  
undetermined MV  
undetermined CAR

|    |   |                                                                                                                            |
|----|---|----------------------------------------------------------------------------------------------------------------------------|
| S1 | ? | These records are from a number of oviposition records from mature plants along forest edge. I have not reared the larvae. |
| S1 | ? |                                                                                                                            |

# GENUS: *Tigridia*

*acesta* L.

*Cecropia* (28)  
undetermined LS, CAR

Females oviposit singly but tend to lay in loose



| Species                                   | Hostplant & Locality                                                             | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                                                                                                                                  |
|-------------------------------------------|----------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | undetermined *JM<br><i>Paurouma</i> (28)<br><i>aspera</i> LS<br>undetermined CAR |                   | clusters of 3 to 8 eggs on the same leaf. Larvae are solitary or semi-gregarious and feed only on young leaves. Hostplants are always saplings and seedlings, and occur as 2, 3 or 4. |
| GENUS: <i>Hamadryas</i>                   |                                                                                  |                   |                                                                                                                                                                                       |
| <i>februa</i> Hubner                      | <i>Dalechampia</i> (18)<br><i>scandens</i> SRNP, AT                              | S1 S1             | Hostplant is 2, 3 or 4 and ranges from juvenile to mature plants.                                                                                                                     |
| <i>amphinome</i><br><i>mexicana</i> Lucas | <i>Dalechampia</i> (18)<br><i>scandens</i> SRNP                                  | C G1              | Hostplant is 3 or 4; eggs in long chains.                                                                                                                                             |
| <i>guatemalena</i> Bates                  | <i>Dalechampia</i> (18)<br><i>scandens</i> SRNP                                  | S1 S1             | Hostplant is 3 or 4 or vines ascending into the forest canopy.                                                                                                                        |
| <i>laodamia</i><br><i>saurites</i> Fruh.  | <i>Dalechampia</i> (18)<br>undescribed species *JM LS                            | ? S2              | Mallet reports this species from a solitary late instar larva. Hostplant was along forest edge ascending into the canopy.                                                             |
| <i>ipthyme</i> Bates                      | <i>Dalechampia</i> (18)<br><i>cissifolia</i> *AA (78-66, 78-79)                  | S S3              | Aiello reports this from Panama where the hostplant occurs in open areas and along forest edges.                                                                                      |
| GENUS: <i>Ectima</i>                      |                                                                                  |                   |                                                                                                                                                                                       |
| <i>rectifascia</i> But. & Dru.            | <i>Dalechampia</i> (18)<br>undescribed species LS                                | S1 S3             | Hostplants are 3 and 4 and are all juvenile plants.                                                                                                                                   |
| GENUS: <i>Eunica</i>                      |                                                                                  |                   |                                                                                                                                                                                       |
| <i>monima</i>                             | <i>Bursera</i> (9)                                                               |                   |                                                                                                                                                                                       |



|                                      |                                                                                                                                                               |               |                |                                                                                                                                                                                                                                                                                   |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>modesta</i> Bates                 | <i>simaruba</i> SRNP                                                                                                                                          | S1            | S3             | Hostplant can be 1, 2, 3 or 4 and during outbreak years the larvae can defoliate entire trees.                                                                                                                                                                                    |
| <i>mira</i> G & S                    | <i>Mabea</i> (18)<br><i>occidentalis</i> *KS-BCI<br><i>occidentalis</i> LS                                                                                    | ?<br>S1       | S5<br>S3-5     | Steiner reports that in Panama larvae are only found on male portions of the inflorescence and not on leaves; plants are riparian. At La Selva I found that eggs are laid on fruiting trees and that first instars will feed on very new leaves; the plants occur in deep forest. |
| <i>mygdonia</i> Godart               | <i>Mabea</i> (18)<br><i>occidentalis</i> *KS-BCI                                                                                                              | ?             | S5             | Steiner reports this species as in <i>mira</i> .                                                                                                                                                                                                                                  |
| GENUS: <i>Dynamine</i>               |                                                                                                                                                               |               |                |                                                                                                                                                                                                                                                                                   |
| <i>salpensa</i> Bates                | <i>Dalechampia</i> (18)<br>undescribed species LS                                                                                                             | S1            | S5             | Hostplant is 3 or 4. Females oviposit only on developing flowers, larvae feed only on flower bracts and developing ovaries. Larvae will not eat leaves.                                                                                                                           |
| <i>mylitta</i> Cr.                   | <i>Dalechampia</i> (18)<br><i>scandens</i> SRNP, VSM                                                                                                          | S1            | S3-5           | Hostplant is 3 or 4; larvae feed only on new leaves or flower parts.                                                                                                                                                                                                              |
| <i>glauce</i> Bates                  | <i>Dalechampia</i> (18)<br><i>cissifolia</i> AT                                                                                                               | S1            | S3-5           | Hostplant is 3 or riparian edge; larvae only feed on new leaves or flower parts.                                                                                                                                                                                                  |
| <i>hopi</i><br><i>albicola</i> Rober | <i>Dalechampia</i> (18)<br>undescribed species LS                                                                                                             | S1            | ?              | Mallet records this as an oviposition record on flower buds.                                                                                                                                                                                                                      |
| GENUS: <i>Temenis</i>                |                                                                                                                                                               |               |                |                                                                                                                                                                                                                                                                                   |
| <i>laothoe</i><br><i>libera</i> Fab. | <i>Serjania</i> (37)<br><i>paucidentata</i> CVDO<br>undetermined LS<br><i>atrolineata</i> *DHJ (81-SRNP-1092)<br><i>Paullinia</i> (37)<br>undetermined *RM LS | S1<br>S1<br>? | S2<br>S2<br>S2 | Hostplants are 2, 3 and 4 and range from juvenile to mature plants. Females oviposit on damaged portions of leaves. Early instars make frass chains, later rest on leaf edges.                                                                                                    |



| Species                                                           | Hostplant & Locality                                                                    | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                                                                                                                                                |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GENUS: <i>Epiphile</i><br><i>adrasta</i> Hew.                     | <i>Serjania</i> (37)<br>undetermined MV<br><i>Cardiospermum</i> (35)<br>undetermined SJ | S1 S2<br>S1 S2    | Hostplants are 2 or 4 or as canopy vines and range from juvenile to mature plants. Early instars make frass chains, later instars rest on upperside of leaves.                                      |
| <i>orea</i><br><i>plusios</i> G & S                               | <i>Serjania</i> (37)<br>undetermined CAR                                                | S1 S2             | Hostplants are 2, 3 or 4 or canopy vines. Early instars make frass chains; later instars rest on frass chains or upperside of leaves.                                                               |
| GENUS: <i>Catonephele</i><br><i>numilia</i><br><i>esite</i> Feld. | <i>Alchornea</i> (18)<br><i>costaricensis</i> LS                                        | S1 S2             | Hostplant is 3 and 4. Females oviposit on sapling sized plants. Early instars make frass chains, later instars rest on the uppersides of leaves.                                                    |
| <i>orites</i> Stichel                                             | <i>Alchornea</i> (18)<br><i>costariensis</i> LS                                         | S1 S2             | Hostplants are 2, 3 and 4. Females oviposit on seedlings and saplings, usually within the seed shadow of a mature tree. Early instars make frass chains, later instars rest on upperside of leaves. |
| <i>chromis</i><br><i>godmani</i> Stichel                          | <i>Alchornea</i> (18)<br><i>poasana</i> EST                                             | S1 S?             | This is an oviposition record where the female laid single eggs on sapling sized plants along forest edge. Larvae were not reared to adulthood.                                                     |
| <i>nyctimus</i> Wstwd.                                            | <i>Veconcibea</i> (18)<br><i>pleistemonia</i> *IC LS                                    | ? S2              | Chacon records this from a solitary larva on a sapling sized tree along forest edge.                                                                                                                |



GENUS: *Nessaea*  
*aglaurea* Dbldy. & Hew.

*Alchornea* (18)  
*costaricensis* LS  
*Plukenetia* (18)  
*volubilis* \*RM LS

S1 S2 *Alchornea* is 2, 3 and 4; all seedlings. Early instars make frass chains, later instars rest on upperside of leaves. Marquis records this species from a solitary late-instar larva feeding on all leaves.

GENUS: *Diaethria*

*euepla* G & S

*Serjania* (37)  
 undetermined LALT

S1 S2 Hostplants are 2, 3 and 4, and range from juveniles to canopy vines. Early instars make frass chains, later rest on leaves.

*marchalli* Guer.-Men.

*Trema* (44)  
*micrantha* LS, CAR, VSM, SV

S1 S1 Hostplants are 2, 3, 4 and range from saplings to mature trees. Early instars make frass chains, later they rest on the underside of leaves.

GENUS: *Callicore*

*pitheas* Latr.

*Serjania* (37)  
*mexicana* \*AA (78-92) BCI

S S1 Aiello states that early instar larvae skeletonize the young leaves, later instars are on all leaves. The hostplant is 3 and 4.

*lyca*

*aerias* G & S

*Serjania* or *Paullinia* (37)  
 undetermined SV, LS

S1 S1 Hostplants are 3 and 4, usually canopy or sub-canopy vines.

GENUS: *Pyrhogyra*

*edocla* Dbldy. & Hew.

*Serjania* (37)  
 undetermined SV

? S2 I reared this species from late-instar larvae on large woody vines occurring along forest and riparian edges. Larvae make frass chains.

*crameri* Aur.

*Paullinia* (37)  
 undetermined CVDO

S1 S1 Hostplant is 2, 3 and 4. Females oviposit only on newly emerging leaves. Larvae make frass chains.



| Species                                   | Hostplant & Locality                                                                                                                                                                                            | Egg & Larval Data  | Bionomic Notes of Host and Butterfly                                                                                                                                                                                                               |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GENUS: <i>Adelpha</i>                     |                                                                                                                                                                                                                 |                    |                                                                                                                                                                                                                                                    |
| <i>melanthe</i> Bates                     | <i>Trema</i> (44)<br><i>micrantha</i> SRNP, VSM<br><i>Urera</i> (46)<br>undetermined LS<br>undetermined CAR, VDS<br><i>Myriocarpa</i> (46)<br><i>longipes</i> LS<br><i>Cecropia</i> (28)<br>undetermined MV, SV | S1 S2-4            | All hostplants are 1, 2, 3 or 4 depending on the habitat and range from young to mature plants. Early instars make frass chains, later instars rest on leaves. Although all leaves are acceptable to larvae, they are usually found on old leaves. |
| <i>celerio</i> Butler                     | <i>Urera</i> (46)<br>undetermined LS<br><i>Miconia</i> (26)<br><i>argentea</i> *JM CVDO                                                                                                                         | S1 S2<br>?         | <i>Urera</i> is 3 and 4 in swampy areas that receive bright sunshine. Early instars make frass chains, later instars rest on uppersides of leaves.                                                                                                 |
| <i>iphicla</i><br><i>iphicleola</i> Bates | <i>Calicophyllum</i> (35)<br><i>candidissimum</i> *DJ (79-SRNP-135)                                                                                                                                             | ? S2               | Janzen records this species from several late instar larvae feeding on all leaves. The host-plant is 3 and 4.                                                                                                                                      |
| <i>bassiloides</i> Bates                  | <i>Ixora</i> (35)<br><i>nicaraguensis</i> *RM LS<br><i>nicaraguensis</i> *JM CVDO<br><i>Alibertia</i> (35)<br><i>edulis</i> *DJ SRNP<br>"unknown genus" (35)<br>undetermined *WH MV<br>undetermined *IC PAT     | ? S<br>?<br>?<br>? | All records are from late instar larvae feeding on all leaves. Hostplants are found as 3 and 4.                                                                                                                                                    |
| <i>tracta</i> Butler                      |                                                                                                                                                                                                                 | S2                 | Both records are from late instar larvae feeding on all leaves of an unidentified woody shrub along forest edges.                                                                                                                                  |
| <i>boeotia</i><br><i>boeotia</i> Felder   | <i>Luehea</i> (41)<br><i>seemannii</i> *JM CVDO                                                                                                                                                                 | ? ?<br>?           | No information as to larval feeding. The host                                                                                                                                                                                                      |



commonly occurs as all categories in Corcovado but no information on where early stages are likely to occur.

|                                                   |                                                                                                                                                                         |                         |                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>heraclea</i> Felder                            | <i>Vitex</i> (47)<br><i>cooperi</i> LS<br><i>Piper</i> (32)<br><i>arieianum</i> *RM LS                                                                                  | S1<br>?<br>S1<br>S1     | <i>Vitex</i> is in my experience the common host at La Selva and is 3 and 4, usually from saplings to mature trees. <i>Piper</i> record is from a late instar larva feeding on all leaves in light gap. Larvae rest on frass chains. These records represent quite a diverse set of hostplants from the same locality.        |
| <i>boreas</i><br><i>tizona</i> Fruh.              | <i>Chomelia</i> (35)<br><i>bispinosa</i> VDS<br><i>Satyria</i> (16)<br>undetermined *RM LS                                                                              | S1<br>?<br>S?<br>S?     | I have not succeeded in rearing this species to adulthood. Early instars on <i>Chomelia</i> feed on new leaves and make frass chains. <i>Chomelia</i> occurs as 3 and 4. Marquis records this species from a solitary late instar larva; <i>Satyria</i> is an epiphyte. This is an unusual record for the family Nymphaledae. |
| <i>zalmona</i><br><i>sophax</i> G & S             | <i>Sabicea</i> (35)<br><i>aspera</i> CAR                                                                                                                                | S1<br>S1                | Hostplants are along roadsides, riparian edges in bright sunshine. Early instars make frass chains, later instars rest on leaves.                                                                                                                                                                                             |
| <i>leucopthalma</i><br><i>mephestopheles</i> But. | "Unknown genus" (35)<br>undetermined SV, CAR                                                                                                                            | S2<br>S2                | Hostplants are 2, 3 and 4 depending on the habitat and range from seedlings to saplings. Early instars make frass chains, later they rest on upperside of leaves.                                                                                                                                                             |
| <i>cocala</i><br><i>lorzae</i> Boisd.             | <i>Pentagonia</i> (35)<br><i>macrophylla</i> LS<br><i>Psychotria</i> (35)<br>undetermined *RM LS<br><i>Calycophyllum</i> (35)<br><i>candidissimum</i> *DJ (81-SRNP-740) | S2<br>S4<br>?<br>?<br>? | <i>Pentagonia</i> is 2, 3, 4 and is either seedling or sapling sized; <i>Psychotria</i> is sapling-2. Females oviposit on damaged portions of old leaves. Larvae feed on old leaves in all plants and make frass chains.                                                                                                      |



| Species                                                              | Hostplant & Locality                                                                             | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                                                                                                                                                                                             |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>cytherea</i><br><i>marcia</i> Fruh.                               | <i>Sabicea</i> (35)<br><i>villosa</i> LS, CAR, CVDO                                              | S1 S1             | Hostplants are 3 and 4 in bright sunshine. All instars rest on frass chains. Mallet reared this species from the same hostplant in Corcovado.                                                                                                    |
| <i>fessonia</i> Hew.                                                 | <i>Randia</i> (35)<br><i>echinocarpa</i> *DJ (79-SRNP-216)<br><i>karstenii</i> *DJ (81-SRNP-725) | ? S2<br>? S2      | These records are from solitary late instar larvae. Hostplants are 3 and 4.                                                                                                                                                                      |
| <i>demialba</i> Butler                                               | <i>Rondeletia</i> (35)<br>undescribed species *WH MV                                             | ? S3              | This record is from a solitary late instar larva; hostplant was 3.                                                                                                                                                                               |
| GENUS: <i>Hypanartia</i><br><i>lethe</i> Fab.                        | <i>Phenax</i> (46)<br>undetermined SJ<br><i>Trema</i> (44)<br><i>micrantha</i> *DJ (81-SRNP-296) | S2 S1<br>? S      | Hostplants are 1 and 3. <i>Phenax</i> is an herbaceous plant in open areas, <i>Trema</i> is a secondary succession tree. On <i>Phenax</i> the larva forms a cup from one leaf with silk and rests and eventually pupates in this silk lined cup. |
| GENUS: <i>Siproeta</i><br><i>stelenes</i><br><i>biplagiata</i> Fruh. | <i>Blechnum</i> (1)<br><i>pyramidalatum</i> *DJ (81-SRNP-71)<br>undetermined CAR                 | ? S2              | Hostplants are all 1.                                                                                                                                                                                                                            |
| GENUS: <i>Chlosyne</i><br><i>hyperia</i> Fab.                        | <i>Melanthera</i> (13)<br><i>aspera</i> SRNP                                                     | ? S2              | Hostplant is 1.                                                                                                                                                                                                                                  |



|                        |                                          |    |    |                                                                                                                                                                                                             |
|------------------------|------------------------------------------|----|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>gaudialis</i> Bates | <i>Justicia</i> (1)<br>undetermined      | ?  | S2 | Hostplant is 3, 4 ranging from seedling to mature plants.                                                                                                                                                   |
| <i>narva</i>           | <i>Amaranthus</i> (2)                    |    |    |                                                                                                                                                                                                             |
| <i>bonplandi</i> Latr. | undetermined LS                          | C? | G2 | Hostplant is 2, 3 and 4 from seedling to mature plants.                                                                                                                                                     |
| <i>lacinia</i> Geyer   | <i>Clibadium</i> (13)                    |    |    |                                                                                                                                                                                                             |
|                        | undetermined *RM LS                      | C? | G2 | Reported from a mass of late instar larvae on an open area plant.                                                                                                                                           |
| <i>melanarge</i> Bates | <i>Aphelandra</i> (1)                    |    |    |                                                                                                                                                                                                             |
|                        | <i>deppiana</i> SRNP                     | C? | G2 | Hostplant is 2, 3 and 4 ranging from juvenile to mature plants.                                                                                                                                             |
| GENUS: <b>Eresia</b>   |                                          |    |    |                                                                                                                                                                                                             |
| <i>coela</i> Druce     | <i>Justicia</i> (1)<br>undetermined LS   |    |    |                                                                                                                                                                                                             |
|                        | <i>Herpetacanthus</i> (1)                | C  | G  | Hostplants are 2, 3 and 4. <i>Justicia</i> are usually seedlings. I have not reared this species to adulthood on <i>Justicia</i> .                                                                          |
|                        | <i>panamensis</i> *LEG LS                | ?  | G  |                                                                                                                                                                                                             |
| GENUS: <b>Castilia</b> |                                          |    |    |                                                                                                                                                                                                             |
| <i>ofella</i> Hew.     | <i>Justicia</i> (1)<br><i>comaeta</i> LS |    |    |                                                                                                                                                                                                             |
|                        | <i>Aphelandra</i> (1)                    | C  | G2 | Hostplants are 2, 3, 4 ranging from juvenile to mature plants. Eggs in clusters of 20 to 40.                                                                                                                |
|                        | <i>storkesi</i> *JM CVDO                 | ?  | G  |                                                                                                                                                                                                             |
| <i>myia</i> Hew.       | <i>Justicia</i> (1)<br>undetermined LS   |    |    |                                                                                                                                                                                                             |
|                        |                                          | C  | G? | This record is from a single batch of 10 larvae feeding on a mature plant along forest edge.                                                                                                                |
| <i>eranites</i> Hew.   | <i>Justicia</i> (1)<br>undetermined LS   |    |    |                                                                                                                                                                                                             |
|                        |                                          | C  | G  | I record this from several oviposition records all on seedling plants in open areas. First instar larvae feed on new leaves, later instars feed on all leaves. I have not reared this species to adulthood. |



| Species                                                               | Hostplant & Locality                                 | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                                                                                      |
|-----------------------------------------------------------------------|------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| GENUS: <i>Anthanassa</i><br><i>ptolyca</i> Bates                      | <i>Justicia</i> (1)<br>undetermined **AA (80-65) BCI | ? ?               | Aiello records this species from several late instar larvae feeding on all leaves. The host occurs along roadsides as an herbaceous weed. |
| GENUS: <i>Tegosa</i><br><i>anieta</i> Hew.                            | <i>Vernonia</i> (13)<br>undetermined VDS             | C G2              | Hostplants are 3 or riparian edges and range from juvenile to mature plants.                                                              |
| GENUS: <i>Euptoeita</i><br><i>hegesia</i><br><i>hoffmani</i> Comstock | <i>Turnera</i> (43)<br><i>ulmifolia</i> SRNP, CVDO   | S2 S1             | Hostplants are 1, either juvenile or mature plants.                                                                                       |

FAMILY: NYMPHALIDAE  
SUBFAMILY: HELICONIINAE

The bulk of the pertinent Costa Rican hostplant records has been reported by Benson, et. al. (1978) and the reader is referred to that paper. The records presented here complete their picture.

|                                              |                                                         |      |                                                                                                       |
|----------------------------------------------|---------------------------------------------------------|------|-------------------------------------------------------------------------------------------------------|
| GENUS: <i>Dryadula</i><br><i>phaetusa</i> L. | <i>Passiflora</i> (31)<br><i>talamancensis</i> *JM CVDO | S S2 | Mallet records this species from late instar larvae on host growing in open areas of bright sunshine. |
| GENUS: <i>Eueides</i><br><i>vibilia</i>      | <i>Passiflora</i> (31)                                  |      |                                                                                                       |



|                       |   |    |                                                                                                                                                           |
|-----------------------|---|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>vialis</i> Stichel | ? | G4 | This species is reported from a solitary cluster of larvae on a host in the forest.                                                                       |
| <i>procula</i>        | ? | G  | Janzen reports that larvae make holes in the leaf as early instars and later feed at the leaf margins. The hostplant is a forest tree (see Janzen, 1983). |

*pittieri* \*JM CVDO*Erblichia* (43)*odorata* \*DJ (79-SRNP-408)*vulgiformis* But. & Dru.**SUBFAMILY: ACRAEINAE**

GENUS: Actinote

*leucomelas* Bates*Mikania* (13)

undetermined SV, MV, CAR

C G1 Hostplant is 1, 2, 3 and 4.

*lapitha* Staud.*Mikania* (13)*riparia* CVDO

? G2 Hostplant is 1 as a scandent semi-woody vine.

**SUBFAMILY: DANAINAE**

GENUS: Anetia

*thirza**insignis* Salvin

"genus?" (5)

undetermined COP

S1 ? This represents an oviposition record.

GENUS: Lycorea

*cleobaea**atergatis* Dist.*Carica* (12)*papaya* LS, SJ, ELROD*Jacaratia* (12)*dolichaula* LS*Ficus* (26)

undetermined \*WH MV

undetermined \*DJ (79-SRNP-113)

*Matalea* (5)*quirosii* \*DJ (79-SRNP-131)*Asclepias* (5)*curassavica* \*WH MV

S1 S2 Hostplants are 2, 3, 4 and range from juvenile to mature forest trees. There is variation among hosts as to what plant fraction the larva will eat. Larvae feeding on Caricaceae cut the main and accessory veins of the leaf and then feed on the leaf portion distal to stem; presumably to avoid secondary compounds.

? S3  
? S3  
? S  
? S



| Species                                                                                                                                                                                                                                                                                    | Hostplant & Locality                                                                                       | Egg & Larval Data    | Bionomic Notes of Host and Butterfly                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>ilione</i>                                                                                                                                                                                                                                                                              |                                                                                                            |                      |                                                                                                                                                                                                                                                           |
| <i>albescens</i> Distant                                                                                                                                                                                                                                                                   | <i>Ficus</i> (28)<br><i>tuerckheimii</i> *WH MV                                                            | ? S3                 | Haber reports this from a solitary late instar larva feeding on the stump sprouts of the host-plant growing in an open pasture.                                                                                                                           |
| <b>SUBFAMILY: ITHOMIINAE</b>                                                                                                                                                                                                                                                               |                                                                                                            |                      |                                                                                                                                                                                                                                                           |
| The bulk of Costa Rican hostplant records for the Ithomiinae may be found in Haber (1978). The following records are additions or new records to his list or records gathered by other workers. In addition in the present list I have included data pertinent to eggs, larvae and adults. |                                                                                                            |                      |                                                                                                                                                                                                                                                           |
| <b>GENUS: Melinaea</b>                                                                                                                                                                                                                                                                     |                                                                                                            |                      |                                                                                                                                                                                                                                                           |
| <i>lilis</i>                                                                                                                                                                                                                                                                               |                                                                                                            |                      |                                                                                                                                                                                                                                                           |
| <i>imitata</i> Bates                                                                                                                                                                                                                                                                       | <i>Markea</i> (40)<br><i>neurantha</i> LS, CAR                                                             | S1 S1                | Hostplant is an epiphyte, females oviposit on plants occurring as 2, 3, 4 and range from seedling to mature plants. Early instars cut leaf veins before feeding on tissues distal to the stem.                                                            |
| <i>scylax</i> Bates                                                                                                                                                                                                                                                                        | <i>Juanuloa</i> (40)<br><i>mexicana</i> *LEG                                                               | S1 S1                | In the insectary, females of Costa Rica stock preferentially oviposited on this plant (Mexican origin) although <i>Markea</i> and <i>Solandra</i> were present, and both are used by <i>lilis imitata</i> in the insectary. All hostplants are epiphytic. |
| <b>GENUS: Mechanitis</b>                                                                                                                                                                                                                                                                   |                                                                                                            |                      |                                                                                                                                                                                                                                                           |
| <i>polymnia</i>                                                                                                                                                                                                                                                                            |                                                                                                            |                      |                                                                                                                                                                                                                                                           |
| <i>isthmia</i> Bates                                                                                                                                                                                                                                                                       | <i>Solanum</i> (40)<br><i>lancaefolium</i> *LEG LS<br><i>lancaefolium</i> *RM LS<br><i>torvum</i> *FGS UCR | C G2<br>C G2<br>C G2 | Hostplants are 3 and 4 and range from seedlings to mature vines.                                                                                                                                                                                          |
| <i>menapis</i>                                                                                                                                                                                                                                                                             | <i>Solanum</i> (40)<br><i>torvum</i> CAR                                                                   | C G2                 | Hostplants are 3 or riparian edges.                                                                                                                                                                                                                       |
| <i>saturata</i> G & S                                                                                                                                                                                                                                                                      | <i>torvum</i> *FGS UCR                                                                                     | C G2                 |                                                                                                                                                                                                                                                           |



GENUS: *Ithomia**patilla* Hew.

*Witheringia* (40)  
*solanacea* \*FGS UCR  
 undetermined species \*LEG SV

S1 S2  
 S1 S2

Hostplants are 3 and 4.

*diasa**hippocrennis* But. & Dru.

*Lycianthes* (40)  
*heteroclita* \*LEG LS

S1 S2

Hostplants are 3 and 4.

*heraldica* Bates

*Acnistus* (40)  
*arborescens* SV, SJ, UCR, PAT

S1 S2

Hostplants are 1, 3 and 4 and may be young or mature plants.

*Witheringia* (40)

undetermined species \*LEG SV,LS

S1 S2

*celeimia**Capsicum* ? (40)*plaginota* But. & Dru.

undetermined species \*LEG RCN

S1 S2

Hostplant occurs as an understory forest shrub and is acceptable as young and mature plants. Probably a *Witheringia* (S. Knap, pers. comm.).

*xenos* Bates

*Acnistus* (40)  
*arborescens* \*FGS UCR

S1 S2

Hostplants are 2, 3 and 4.

GENUS: *Ceratinia**tutia**dorilla* Bates

*Solanum* (40)  
*nudum* \*LEG RCN  
*nudum* \*JM CVDO

S1 S2

Hostplants are forest understory shrubs and usually occur in heavy second growth vegetation.

GENUS: *Dircenna**klugi* Geyer

*Solanum* (40) \*all FGS  
*umbellatum* UCR  
*torum* UCR  
*lanceolatum* UCR  
*ochraceo-ferruginum*

S1 S2

Stiles records all of these species from the same locality. All hostplants are 2, 3, 4 provided open sunshine during a part of the day.

S1 S2

S1 S2

S1 S2



| Species                                                               | Hostplant & Locality                                                            | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                       |
|-----------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------|
| <i>euchytma</i> Feld.                                                 | <i>Solanum</i> (40)<br><i>ochraceo-ferruginum</i> *LEG LS                       | S1 S3             | Hostplants are 3 and riparian edges.                                       |
| GENUS: <i>Godyris</i><br><i>zygia</i> G & S                           | <i>Cestrum</i> (40)<br><i>nocturnum</i> *LEG SV                                 | S1 S2             | Hostplants are understory shrubs and range from juvenile to mature plants. |
| GENUS: <i>Hyaliris</i><br><i>excelsa</i><br><i>decumena</i> G & S     | <i>Solanum</i> (40)<br><i>lancaefolium</i> SJ, CAR, VDS                         | S1 S1             | Hostplants are 2, 3 or 4 and usually seedling or sapling plants.           |
| GENUS: <i>Hypothyris</i><br><i>lycaste</i><br><i>callispila</i> Bates | <i>Solanum</i> (40)<br><i>umbellatum</i> *FGS UCR<br><i>ochraceo-ferruginum</i> | S1 S2             | No data on hostplant habitat.                                              |
| <i>euclea</i><br><i>valore</i> Haensch                                | <i>Solanum</i> (40)<br><i>umbellatum</i> *FGS UCR                               | S1 S?             | No data on hostplant habitat.                                              |
| GENUS: <i>Episcada</i><br><i>salvinia</i><br><i>opleri</i> Lamas      | <i>Solanum</i> (40)<br>"new species" *LEG SV<br><i>nudum</i> IFGS UCR           | C G2<br>C G2      | Hostplants are all second growth shrubs.                                   |
| GENUS: <i>Pteronymia</i><br><i>agalla</i><br><i>obscurata</i> Fab.    | <i>Solanum</i> (40)<br><i>brenesii</i> *LEG SV, RCN                             | S1 S?             | No data on hostplant habitat.                                              |



*artena* Hew.

*Lycianthes* (40)  
undetermined species \*LEG  
*Solanum* (40)  
*confirme*  
"new species" \*JM  
*Cyphomandra* (40)  
*costaricensis* \*LEG SV

*lonera* But. & Dru.

? S? Gilbert reports this from several eggs on old leaves. No data on hostplant habitat. Mallet reports this from *Solanum* which are all second growth or forest understory shrubs.  
? S2  
? S2  
S1 S1 Hostplant is 3 and 4. Females oviposit on mature plants.

# SUBFAMILY: MORPHINAE

GENUS: *Antirrhea*

*pterocopa* G & S

*Calypterogyne* (30)  
undetermined CAR

? S4 Hostplants are solitary, growing in dense shade, usually at the base of a large tree. Larvae feed on leaves that are covered in epiphylls.

*multiades* Fab.

*Geonoma* (30)  
*longivaginata* \*RM LS

? S4 Marquis reports this from a solitary late instar larva from a plant growing in deep shade.

GENUS: *Caerois*

*gerdrutius* Stich.

*Socratea* (30)  
undetermined \*IC LS

? S2 Chacon reports this from a solitary late instar larvae feeding on a large tree growing in a swamp.

GENUS: *Morpho*

*amathonte* Dey.

*Pterocarpus* (19)  
*officinalis* CVDO

? S2 I report this from a solitary late instar larva feeding on a sapling in a swamp. The larva fed nocturnally.

*granadensis*

*polybapta* Butler

*Machaerium* (19)  
*seemani*

S? S2 I report this from solitary larvae feeding on



| Species                       | Hostplant & Locality                      | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                        |
|-------------------------------|-------------------------------------------|-------------------|-----------------------------------------------------------------------------|
| <i>peleides</i> Esper         |                                           |                   | seedling and sapling sized plants. Females lay on this plant when confined. |
|                               | <i>Machaerium</i> (19)                    |                   |                                                                             |
|                               | <i>seemanni</i> LS, CVDO, CAR, VSM        | S S2              | Hostplants are all 2, 3, 4 and range from                                   |
|                               | undetermined LSALT                        | S? S2             | seedlings to large forest trees. Larvae are noc-                            |
|                               | undetermined VDS                          | S? S2             | turnal feeders and usually crawl off the host                               |
|                               | <i>biovulatum</i> *DJ (81-SRNP-711)       | S? S2             | leaves while not feeding.                                                   |
|                               | <i>Mucuna</i> (19)                        | S2                |                                                                             |
|                               | <i>mutisiana</i> **confined female MV, SV |                   |                                                                             |
|                               | <i>Dalbergia</i> (19)                     | S? S2             |                                                                             |
|                               | <i>retusa</i> *DJ (81-SRNP-226)           |                   |                                                                             |
|                               | <i>Pterocarpus</i> (19)                   | ? ?               |                                                                             |
|                               | <i>rohrii</i> **AA (80-16) BCI            |                   |                                                                             |
| <b>SUBFAMILY: BRASSOLINAE</b> |                                           |                   |                                                                             |
| <b>GENUS: Dynastor</b>        |                                           |                   |                                                                             |
| <i>darius</i>                 | <i>Aechmea</i> (8)                        |                   |                                                                             |
| <i>stygianus</i> Butler       | <i>magdalenae</i> LS                      | S1 S2             | Hostplants are 2, 3, 4 and in swampy areas if                               |
|                               | undetermined LS                           | ? S2              | terrestrial. The undetermined record is an                                  |
|                               | <i>Bromelia</i> (8)                       |                   | epiphyte. Larvae rest in the middle of the                                  |
|                               | <i>pinguin</i> *DJ (82-SRNP-1308)         | ? S2              | leaf blade when not feeding.                                                |
| <b>GENUS: Opsiphanes</b>      |                                           |                   |                                                                             |
| <i>tamarindii</i>             | <i>Heliconia</i> (21)                     |                   |                                                                             |
| <i>sikyon</i> Fruh.           | various species LS, CVDO, SJ              | S1 S2             | Hostplants can be 1, 2, 3 or 4.                                             |
| <i>cassina</i>                | <i>Acrocomia</i> (30)                     |                   |                                                                             |
| <i>fabricii</i> Boisd.        | <i>vinifera</i> SRNP                      | S1 S2             | Hostplants are 1 or 3 and range from juvenile                               |
|                               | <i>Cocos</i> (30)                         |                   | to large trees.                                                             |
|                               | <i>nucifera</i> CVDO                      | S1 S2             |                                                                             |



|                                            |                                      |         |   |    |                                                                                   |
|--------------------------------------------|--------------------------------------|---------|---|----|-----------------------------------------------------------------------------------|
| <i>staudingeri</i> G & S                   | <i>Chusquea</i> (34)<br>undetermined | *IC PAT | ? | S2 | Chacon reports this species from late instar larvae which feed nocturnally.       |
| <i>bogatanus</i> Distant                   | "palm" (30)<br>undetermined          | *RC VDS | ? | S2 | Cubero reports this from larvae feeding on juvenile plants growing in the forest. |
| GENUS: <i>Eryphanis</i>                    |                                      |         |   |    |                                                                                   |
| <i>polyxena</i><br><i>lycomedon</i> Felder | "exotic bamboo" (34)                 | *RC     | S | S2 | Cubero reports this from a confined female. Larvae feed nocturnally.              |

GENUS: *Caligo*

**\*\*NOTE:** It is common in the hostplant literature to record *Caligo* from *Musa*. However this certainly represents a radiation onto an introduced plant; *Musa* is native to the Old World. In my rearing studies of *Caligo* I have found that any species of *Heliconia* will serve as a hostplant and a stimulus to oviposit, both in the field and in the insectary.

|                                           |                                                   |                         |     |    |                                                                                                                                                                                                                                             |
|-------------------------------------------|---------------------------------------------------|-------------------------|-----|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>memnon</i> Fedler                      | <i>Heliconia</i> (21)<br>various species          | SJ, SV, AT, CVDO        | See |    | Hostplants are 2, 3 or 4 and range from juvenile to mature plants. Females oviposit small clusters of eggs (2-15) and then will lay several clusters on the same plant. All leaves are acceptable to all instars.                           |
| <i>eurilochus</i><br><i>sulanus</i> Fruh. | <i>Heliconia</i> (21)<br>various species          | CAR, CVDO, LS, SV, LALT | C1  | G2 | Hostplants are 2, 3, 4 and range from juvenile to mature plants. Larvae are gregarious and aggregations may contain all instars without cannibalism.                                                                                        |
| <i>atreus</i> Kollar                      | <i>Heliconia</i> (21)<br>various species          | CAR, LS, CVDO           | C2  | G2 | Hostplants are 2, 3, 4 and range from juvenile to mature plants. Chacon reports this record from a solitary late instar larva on old leaves. Usually larvae are in small aggregations where all instars may be present without cannibalism. |
|                                           | <i>Asterogyne</i> (30)<br><i>marshiana</i> *IC LS |                         | ?   | S  |                                                                                                                                                                                                                                             |



| Species                                     | Hostplant & Locality                                                                                                                                                                      | Egg & Larval Data       | Bionomic Notes of Host and Butterfly                                                                                                              |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>illioneus</i> Kollar                     | <i>Heliconia</i> (21)<br>various species LS                                                                                                                                               | C2 G2                   | Hostplants are 2, 3, 4 and may range from juvenile to mature plants. Larvae are gregarious and may be present in all instars without cannibalism. |
| <b>SUBFAMILY: SATYRINAE</b>                 |                                                                                                                                                                                           |                         |                                                                                                                                                   |
| <b>GENUS: Dulcedo</b>                       |                                                                                                                                                                                           |                         |                                                                                                                                                   |
| <i>polita</i> Hew.                          | <i>Geonoma</i> (30)<br>undetermined LS<br><i>Euterpe</i> (30)<br>undetermined LS                                                                                                          | S1 S1<br>S1 S1          | Hostplants are all seedlings occurring in well shaded swampy areas.                                                                               |
| <b>GENUS: Pierella</b>                      |                                                                                                                                                                                           |                         |                                                                                                                                                   |
| <i>luna</i> Fab.                            | <i>Heliconia</i> (21)<br><i>latipatha</i> CVDO<br><i>Calathea</i> (25)<br><i>marantifolia</i> *JM CVDO                                                                                    | S2 S2<br>? S2           | Hostplants are all seedlings occurring in well shaded light gaps.                                                                                 |
| <i>helvetia</i><br><i>incanescens</i> G & S | <i>Heliconia</i> (21)<br>various species LS, TUR<br><i>Asterogyne</i> (30)<br>undetermined LS<br><i>Calathea</i> (25)<br>undetermined LS<br><i>Panicum</i> (33)<br>undetermined *MCS CVDO | S2 S2<br>S2 S2<br>S2 S2 | Hostplants are all 2, 3, 4 and are seedlings except for <i>Panicum</i> .                                                                          |
| <b>GENUS: Cyllopsis</b>                     |                                                                                                                                                                                           |                         |                                                                                                                                                   |
| <i>philodice</i> G & S                      | <i>Swallenocloa</i> (34)                                                                                                                                                                  |                         |                                                                                                                                                   |



|                                                        |                                                                                                                    |                |                |                                                                                                                                                                                                                                                 |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|----------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>argentina</i> But. & Dru.                           | undetermined COP, CDM                                                                                              | S1             | S3             | Hostplants occur in dense stands in open areas at high elevations.                                                                                                                                                                              |
| <i>Chusquea</i> (34)<br>undetermined COP, PAT          |                                                                                                                    | C?             | *G2            | Hostplants occur as dense stands along riparian edges or forest edges. Early instars are gregarious, later instars appear to be solitary (I have only lab reared them in later stages). Eggs are laid on young plants with abundant new growth. |
| GENUS: <i>Oressinoma</i><br><i>typhla</i> West. & Hew. | <i>Cyperus</i> (15)<br><i>lazulae</i> BLH, CAR                                                                     | S2             | S1             | Hostplants occur in open areas usually associated with swampy or riparian situations.                                                                                                                                                           |
| GENUS: <i>Taygetis</i><br><i>andromeda</i> Cr.         | <i>Olyra</i> (33)<br><i>latifolia</i> *DJ (81-SRNP-946)                                                            | ?              | S2             | Janzen reports this species from solitary larvae feeding on hostplants growing along forest edges.                                                                                                                                              |
| GENUS: <i>Euptychia</i><br><i>insolata</i> But. & Dru. | <i>Neckeropsis</i> (29)<br><i>undulata</i> *MCS CVDO                                                               | S1             | S2             | Hostplant is an epiphytic moss on tree trunks in well shaded rainforest habitats. This is a highly unusual host record for any butterfly family.                                                                                                |
| <i>jesia</i> Butler                                    | <i>Selaginella</i> (38)<br><i>horizontalis</i> *MCS LS, CVDO, SV<br>undetermined species ELROD<br>undetermined CAR | S1<br>S1<br>S1 | S2<br>S2<br>S2 | Hostplants are 2, 3 and 4.                                                                                                                                                                                                                      |
| <i>westwoodi</i> Butler                                | <i>Selaginella</i> (38)<br><i>arthriticum</i> *MCS LS, SV, CVDO, AT                                                | S1             | S2             | Hostplants are 2, 3 and 4.                                                                                                                                                                                                                      |



| Species                      | Hostplant & Locality                                                                                                                                                                                               | Egg & Larval Data                                  | Bionomic Notes of Host and Butterfly                                                                                 |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| <i>molina</i> Hub.           | <i>Selaginella</i> (38)<br><i>arthriticum</i> *MCS SV<br>undetermined CAR                                                                                                                                          | S1 S2<br>S1 S2                                     | Hostplants are 2, 3 and 4.                                                                                           |
| GENUS: <i>Chloreuptychia</i> |                                                                                                                                                                                                                    |                                                    |                                                                                                                      |
| <i>arnaea</i> Fab.           | <i>Eleusine</i> (33)<br>undetermined *MCS SV, CVDO<br><i>Optismenus</i> (33)<br>undetermined *MCS AT<br><i>Ichnanthus</i> (33)<br>undetermined *MCS LS<br>undetermined CAR                                         | S1 S2<br>S1 S2<br>S1 S2<br>S1 S2                   | Hostplants occur in isolated clumps in light gaps and at bases of trees.                                             |
| GENUS: <i>Cissia</i>         |                                                                                                                                                                                                                    |                                                    |                                                                                                                      |
| <i>usitata</i> Butler        | <i>Eleusine</i> (33)<br><i>indica</i> *MCS LS, CVDO                                                                                                                                                                | S2 S2                                              | Hostplants occur along sunny edges and light gaps.                                                                   |
| <i>themis</i> Butler         | "various grasses" (33)<br>undetermined *MCS AT                                                                                                                                                                     | S2 S2                                              | Hostplant occurs in small clumps in open forest.                                                                     |
| <i>confusa</i> Staud.        | <i>Panicum</i> (33)<br>undetermined *MCS CVDO<br>undetermined CAR<br><i>Euterpe</i> (30)<br>undetermined *MCS LS CVDO<br><i>Geonoma</i> (30)<br><i>congesta</i> LS, CAR<br><i>Calathea</i> (26)<br>undetermined LS | S2 S2<br>S2 S2<br>S2 S2<br>S2 S2<br>S2 S2<br>S2 S2 | All hostplants occur as isolated clumps (grass) or seedlings (palms and <i>Calathea</i> ) on the shady forest floor. |



|                               |                                                                                                            |          |          |                                                                                                                                                |
|-------------------------------|------------------------------------------------------------------------------------------------------------|----------|----------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>labe</i> Butler            | "grasses" (33)<br>undetermined *MCS LS                                                                     |          |          | The eggs are deposited singly off the hostplants, usually on nearby dead vegetation. The host occurs in lush, tall clumps in large light gaps. |
| <i>palladia</i> Butler        | "various grasses" (33)<br>greenhouse data *MCS LS                                                          |          |          | In captivity, eggs are laid singly. All leaves of various grasses were acceptable to all instars.                                              |
| <i>pseudoconfusa</i> S, D & E | <i>Panicum</i> (33)<br>undetermined LS, CVDO, SV                                                           | S2       | S2       | Hostplants occur in isolated clumps in shady forest.                                                                                           |
|                               | "grass" (33)<br>undetermined CAR                                                                           | ?        | S2       |                                                                                                                                                |
| <i>gomezi</i> S, D & E        | "grass" (33)<br>undetermined *MCS CVDO                                                                     | ?        | S2       | This is recorded from a solitary late instar larva feeding on a grass growing along forest edge.                                               |
| <i>libye</i> L.               | <i>Panicum</i> (33)<br><i>maximum</i> SRNP, AT<br>"various grasses" (33)<br>undetermined *MCS LS, CVDO, SV | S2<br>S2 | S2<br>S2 | Hostplants are 3 and 4 provided there is direct sunshine at some time of the day.                                                              |
| <i>renata</i> Cr.             | "various grasses" (33)<br>undetermined *MCS AT, CVDO, SV                                                   | S        | S2       | Female oviposits off the hostplant on nearby vegetation and litter. Hostplants occur in very open forest or edges.                             |
| <i>hesione</i> Sulzer         | <i>Eleusine</i> (33)<br>various species *MCS LS, CVDO, SV                                                  | S2       | S2       | Hostplants occur as isolated clumps in open areas or along forest edges.                                                                       |
| <i>metaluca</i> Boisd.        | "grass" (33)<br>undetermined *MCS LS, CVDO, SV                                                             | S2       | S2       | Hostplants occur in isolated clumps in the forest or along forest edges.                                                                       |
| <i>hermes</i> Fab.            | <i>Eleusine</i> (33)<br>undetermined *MCS AT, CVDO<br><i>Panicum</i> (33)<br>undetermined *MCS SV, LS      | S2<br>S2 | S2<br>S2 | Hostplant almost always in open sunny areas, usually second growth, occasionally within the forest shade.                                      |



| Species                                               | Hostplant & Locality                                                                       | Egg & Larval Data | Bionomic Notes of Host and Butterfly                                                                                                                                             |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>calixta</i> Butler                                 | <i>Laparus</i> (15)<br><i>lazulae</i> BLH, CAR                                             | S2 S2             | Hostplants occur in wet open areas along road-sides and trails, or riparian edges.                                                                                               |
| <i>polyphemus</i> Butler                              | "grass" (33)<br>undetermined CAR<br><i>Chusquea</i> (34)<br>undetermined *IC PAT           | S2 S2<br>S2 S2    | Chacon reports this species from late instar larvae feeding on a dense stand of hostplant along forest edges. The larvae feed nocturnally.                                       |
| GENUS: <i>Megeuptychia</i><br><i>antonoe</i> Cr.      | <i>Calathea</i> (25)<br><i>lutea</i> *JM CVDO<br><i>Cyclanthus</i> (14)<br>undetermined LS | C G2              | Mallet reports this species from seedlings occurring in deep forest or along forest edges. My record is an oviposition as seen with binoculars while I was in the forest canopy. |
| GENUS: <i>Dioriste</i><br><i>cothonides</i> GRS.-SMT. | <i>Chusquea</i> (34)<br>undetermined COP, PAT                                              | C G2              | Hostplants occur as dense thickets along forest and riparian edges. Early instars are gregarious, later instars are solitary. The larvae feed nocturnally.                       |
| GENUS: <i>Eretris</i><br><i>suzannae</i> DeVr.        | <i>Chusquea</i> (34)<br>undetermined BLH                                                   | S1 S1             | Hostplants occur as dense thickets along forest and riparian edges. The egg is deposited on the terminal spine of the leaf.                                                      |



GENUS: *Pedaliodes*

*perperna* Hew.

*Rhipidocladum* (34)  
*maxonii* EST

S1

S1

Hostplants occur in isolated, juvenile clumps on the forest floor in old light gaps.

*ereiba*

*Chusquea* (34)  
undetermined COP

S1

?

This is reported as an oviposition record only; larvae were not reared past first instar. Females lay eggs singly in the axils of the whorled leaves near the main stem.

*cremera* G & S

GENUS: *Catargynnis*

*rogersi* G & S

*Chusquea* (34)  
undetermined BLH, COP, CAR

S2

?

Hostplants occur in dense stands in shady areas in the forest or edges. Females lay eggs in leaf axils; larvae not reared.





DeVries, Philip J. 1986. "Hostplant records and natural history notes on Costa Rican butterflies (Papilionidae, Pieridae & Nymphalidae)." *The Journal of Research on the Lepidoptera* 24(4), 290–333. <https://doi.org/10.5962/p.266791>.

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