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A preliminary checklist of larval host plants of butterflies of Bankura and Purulia districts of West Bengal, India

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Abstract

In this paper, we present a preliminary checklist of butterfly larval host plants from the Bankura and Purulia districts, which are a part of the Chotanagpur Plateau of West Bengal, India. The authors found 223 plant species from 52 plant families, which were used as larval hosts by 124 butterfly species. In terms of the use of plant families and species, we discovered a strong positive association between Nymphalidae and Hesperiidae and between Lycaenidae and Pieridae. According to our two-way ANOVA findings, there are notable variations in plant usage among butterfly families, which were elaborately discussed using hierarchical classical clustering. Most of the plant species utilized were from the Fabaceae and Poaceae families.

Key words: Chotanagpur Plateau, Deccan, food plants, Lepidoptera, plant diversity

Introduction

Butterflies are a crucial component of the food chain and are prey for birds, bats, and other insectivorous animals. Butterflies serve as indicators of a healthy ecology and habitat. They show a huge variety among other invertebrates. More than 19,000 butterfly species have been reported from all over the world. India has 1,501 species of butterflies and India hosts one of the richest and most diverse butterfly faunas in the world (Kehimkar, 2008). The diversity of butterflies depends on different factors. One of the most important factors is the plant diversity of the area. The diversity of plants and butterflies are favorably correlated (Leps and Spitzer, 1990); thus, a shift in butterfly diversity might result from a change in vegetation structure. The study of larval host plants of Indian butterflies was well documented by T.R. Bell (1909–1927). The study of butterflies and their host plants in the districts of Bankura and Purulia is notable in the present years. Some remarkable study has been carried out in these two districts of West Bengal. A new larval host plant of *Papilio crino* (Fabricius) was reported by Mukherjee and Ghosh (2018). Red Helen *Papilio helenus* (Linnaeus) was reported for the first time from Bankura district by Mukherjee (2019). A checklist of 117 butterfly species was established by Mukherjee and Mondal (2020) and new larval host plants for three butterflies were reported by Mukherjee (2021). Recently, new larval host plants of *Virachola isocrates* (Fabricius) and *Junonia orithya* (Linnaeus) were reported by Mukherjee (2022a), two new larval host plant of *Leptosia nina* (Fabricius) and *Rapala manea* (Hewitson) were reported by Mukherjee (2022b), and three new larval host plants were newly reported by Banerjee et al. (2023) from Bankura district. On the other side, a preliminary checklist of butterflies of Baghmundi in Purulia was reported by Samanta et al. (2017). In addition, some exclusive species, including Anomalous nawab *Charaxes agrarius* (C. Swinhoe), were reported from Purulia for the first time by Samanta et al. (2019), Blackvein sergeant *Athyma ranga* (Moore) was reported from Baghmundi by Mukherjee (2021), Color sergeant *Athyma nefta* (Cramer) was reported from Purulia by Mahato et al. (2022), the first photographic documentation of Large-spotted oakblue *Arhopala nicevillei* (Bethune-Baker) from Purulia was provided by Kuiry et al. (2022), and Variable Malayan *Megisba malaya* (Horsfield) was reported from Purulia district by Samanta et al. (2022).

In this present study, the main aim was to estimate the availability of butterfly larval host plants in the Bankura and Purulia districts of West Bengal, India.

Material and Methods

Study area

a. Bankura

Bankura district is the westernmost district of the Burdwan division, and it is known as "Rarh" in Bengal. It is situated in the northwestern part (23.25° N, 87.07° E) of the West Bengal state (Fig. 1). Bankura district is bordered to the north and east by the Purba Bardhaman and Paschim Bardhaman districts, to the south by Paschim Medinipur district, and the west by Purilia district. It consists of the plains of Bengal and plateau of Chotanagpur (Mirza and Mondal, 2018). Three types of soil are present in Bankura: (1) red soil, (2) alluvial soil, and (3) laterite soil. Almost 37% of the district contains alluvial soil (Mukherjee and Mondal, 2020). There are two main hills, namely Susunia (448 m) and Biharinath (451 m), which are made of igneous rocks of the Archaean Eon as well as coal-bearing mudstone and quartzite rocks of the Carboniferous Period (Mukherjee and Mondal, 2020). There are many rivers such as the Damodar, Dwarokeswar, Sali, Kangsabati, Silai, Gandheswari, Jayponda, Birai, and Bhairabbanki. The temperature range is great due to very hot temperatures in summer and very cool temperatures in winter. As per the Indian Meteorological Department, the average temperature is 26.9 °C and in the summer the area reaches the maximum temperature of up to 45 °C, while in the winter season, the minimum temperature decreases to 4–6 °C, and the annual rainfall is 1,508 mm. Deciduous Sal (*Shorea robusta* Gaertn.) forest is known in Bishnupur, Joypur, Taldangra, Beliatore, and Simlapal, and dry dense deciduous forest in Sutan, Ranibandh, Raipur, and Jhilimili. The larger trees in this forest type are Sal, Banayan, Simul, Mohua, Hijal, Jiol, Asan, Siris, Mango, Nim, etc. In the scrub forest, *Glycosmis* sp., *Barleria* sp., *Flacourtia* sp., *Ziziphus* sp., *Urena* sp., *Sida* sp., *Trema* sp., *Tragia* sp., *Laportea* sp., *Aristholochia* sp., etc., are found. Some hemiparasitic plants are also found in this forest type, such as *Dendrophthoe falcata* (L. f. Ettingsh), which is locally known as Banda, *Loranthus longiflorus* (Gaertn.), etc. The eastern portion of the district forms part of the rice plains and the land under rice cultivation (Mondal et al., 2023) contains the usual marsh weeds of the Gangetic Plain (O' Malley, 1908). Photos of the different habitats of the Bankura district are given in Figure 2.

b. Purulia

Purulia is the westernmost district (22.60–23.50° N, 85.75–86.65° E) of West Bengal (Fig. 3). This district is a part of the Chotanagpur Plateau with undulating land and a laterite soil type (Gangopadhyay et al., 2023). There are some scattered hills present. Chamtaburu (712 m) is the highest peak of Purulia and southern West Bengal. As per the Indian Meteorological Department, the average temperature is 40 °C and in winter the temperature can decreases to 3 °C and reach up to 50 °C in summer. The annual average rainfall is up to 1,500 mm. The district of Purulia is crossed by several rivers; Kangsabati, Kumari, Silabati (Silai), Dwarakeswar, Subarnarekha, and Damodar are the major rivers. In the town of Purulia, Sahebbandh is one of the most important water bodies and is the residence of many birds. There are some small dams such as Futiyary, Murguma, Pardi, Burda, and Gopalpur, which are used mainly for agriculture. The forests are a mixture of dry deciduous and evergreen plants and under the canopy long-tree evergreen scrub can be seen. Tall plants including Asan, Sal, Segun, Siris, Mango, Nim, Simul, Mohua, Hijal, Jiol, etc., are present. Other plants such as *Tragia* sp., *Laportea* sp., *Aristholochia* sp., *Urena* sp., *Sida* sp., *Glycosmis* sp., *Barleria* sp., *Flacourtia* sp., *Ziziphus* sp., *Turnera ulmifolia* (L.), *Abrus precatorius* (L.), *Ixora coccinea* (L.), etc., occur. Photos of the different habitat of the Purulia district are given in Figure 4.

Data collection

The present study was carried out from December 2012 to September 2022 in the study sites. An opportunistic survey method was used for the study. To photograph the larval host plants, a digital camera (Canon 77D with Tamron 90 mm non-VC Lens and Canon ISUS 130IS) was used. Identification of the butterflies was primarily made directly in the field. In critical conditions, specimens were collected only with handheld aerial sweep nets. Each specimen was placed in a plastic box and was carried to the laboratory for further identification with the help of field guides by Wynter-Blyth (1957) and Kunte (2000), and a butterfly taxonomist. To identify the plants, publications on flora by Hooker (1875–1887); Kanjilal et al. (1934–1940); and Haridasan and Rao (1985–1987) were used. *A Synoptic Catalogue of the Butterflies of India* by Versney et al. (2015) was used as the source of the common and scientific names of butterflies.

Statistical analysis

Two-way ANOVA was done between butterfly and plant families using plant species numbers used by the butterfly family as data. Pearson correlation (Mondal et al., 2022a) and PCA analysis (Mondal et al., 2022b) were done to explain the interrelationship among butterfly families depending upon the usage of plant family members. Hierarchical classical clustering was performed within plant and butterfly families separately using a single linkage algorithm with Bray–Curtis similarity index and 1,000 bootstrap among sites (Mukherjee and Mondal, 2020). All the analyses were done using statistical software PAST Version 3.26 developed by Øyvind Hammer (Natural History Museum, University of Oslo).

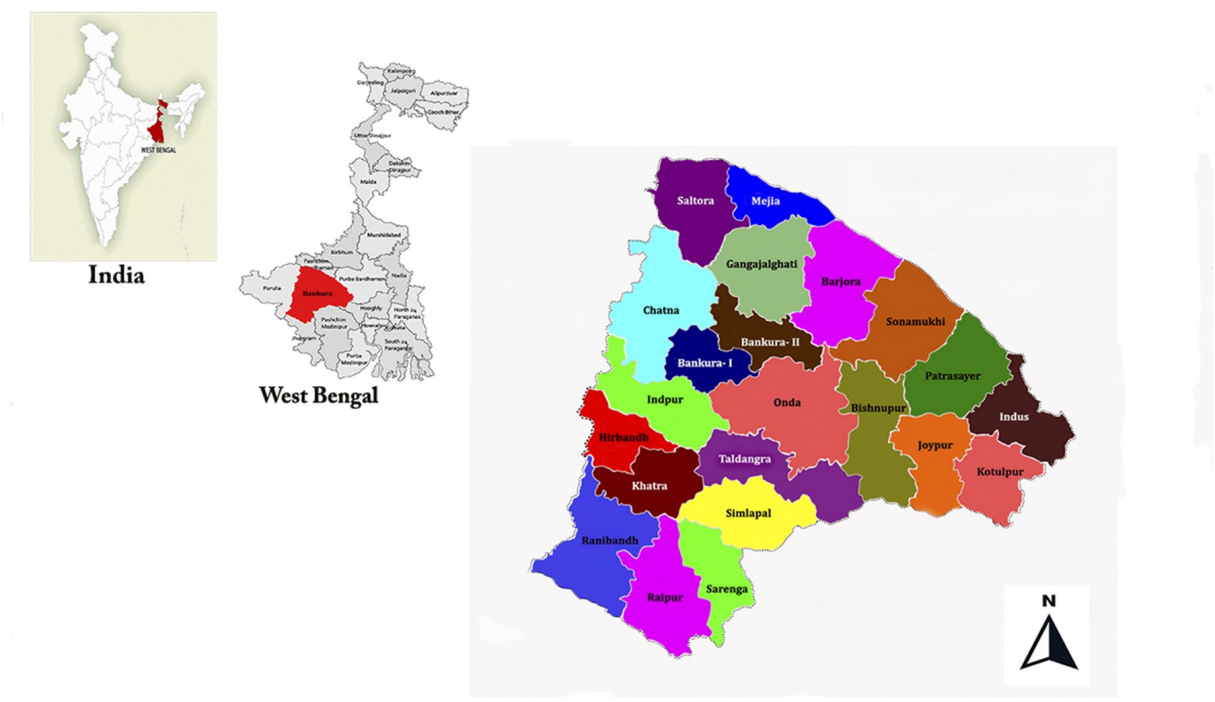

Figure 1: Location of the study site Bankura district in West Bengal, India. (Map Source - Google images).

Figure 2: Various habitats of Bankura district, West Bengal, India. Clockwise from top left: dry deciduous forest; riparian forest; fruit garden, and roadside mixed forest.

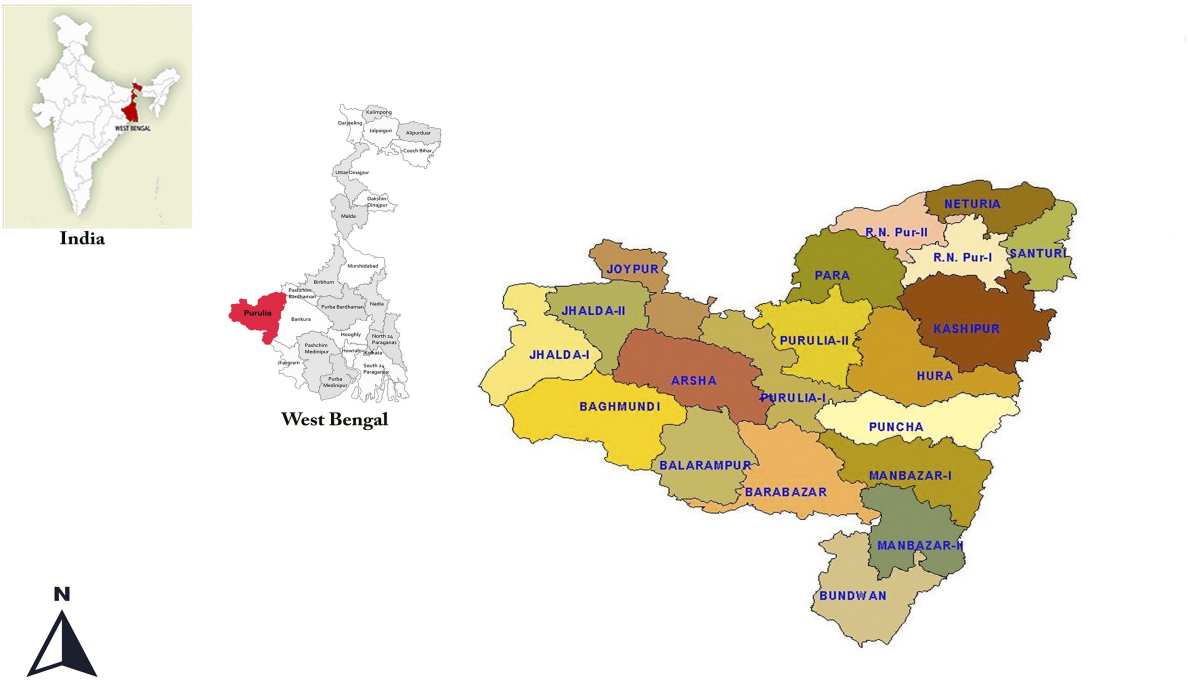

Figure 3: Location of the study site Purulia district in West Bengal, India. (Map Source - Google images).

Figure 4: Various habitats of Purulia district, West Bengal, India. Clockwise from top left: tropical evergreen forest; tropical dry deciduous forest; dry deciduous Sal forest; riparian forest. (Images courtesy of Supriyo Samanta)

Results

In this study, the authors found 223 plant species from 52 plant families, which were used by 124 butterflies (Table 1). The greatest number of plants were used by Nymphalidae and Lycaenidae, followed by Hesperiidae, Pieridae, Papilionidae, and Riodinidae (Fig. 5). Nymphalidae used 30 families of plants, but Lycaenidae used 29 families. We found that there was a significant positive correlation between Nymphalidae and Hesperiidae ($r= 0.59$, $p< 0.0001$) and Lycaenidae and Pieridae ($r= 0.52$, $p< 0.0001$) in terms of plant family and species usage.

PCA analysis of butterfly families showed 53.57% variance in principal component 1 (PC1) (eigenvalue 7.87) and 25.82% variance in principal component 2 (PC2) (eigenvalue 3.79) (Fig. 6). Lycaenidae showed the strongest positive correlation (0.93) with PC1 followed by Pieridae (0.62), Nymphalidae (0.57), and Hesperiidae (0.50). However, Nymphalidae displayed a strong positive correlation with PC2, followed by Hesperiidae (0.60). From the biplot (Fig. 6), it can be seen that Nymphalidae and Hesperiidae show similar plant utilization; Lycaenidae and Pieridae also exhibit an alike pattern.

Two-way ANOVA results suggest that there are significant differences in terms of plant uses among butterfly families (F= 7.85, df= 5, p= 0.0001) and vice versa (F= 2.18, df= 51, p= 0.0001). We found the plant family Zingiberaceae was exclusively used by Hesperiidae. The following plant families were solely used by the butterfly family Lycaenidae: Verbenaceae, Ulmaceae, Sapindaceae, Smilacaceae, Myrtaceae, Oleaceae, Oxalidaceae, Lythraceae, Loganiaceae, Lamiaceae, Cycadaceae, and Boraginaceae. The butterfly family Nymphalidae used host plants from the Cannabaceae, Convulaceae, Ebenaceae, Melastomataceae, Papaveraceae, Portulacaceae, Salicaceae, Solanaceae, Urticaceae, and Violaceae plant families, which were not used by other butterfly families. Capparaceae, Cleomaceae, and Brassicaceae plant families were exclusively used by Pieridae. The Aristolochiaceae and Lauraceae plant families were only utilized by Papilionidae. Riodinidae only used the plant family Primulaceae (Fig. 7).

The Annonaceae family was mainly used by Papilionidae, except for one species used by the Tawny rajah of the Nymphalidae family. Aristolochiaceae, Lauraceae, along with Annonaceae, formed a clade that was mainly used by Papilionidae. Asteraceae, Lecythidaceae, and Passifloraceae constructed a clade as the butterfly families Lycaenidae and Nymphalidae used them in an exactly similar way. Phyllanthaceae was closely associated with this clade. Verbenaceae, Ulmaceae, Smilacaceae, Myrtaceae, Oleaceae, Loganiaceae, Lamiaceae, Cycadaceae, and Boraginaceae were taken by Lycaenidae exclusively, so they clustered together in the dendrogram (Fig. 8). The clade of Oxalidaceae and Lythraceae was built due to their use pattern by Lycaenidae. Amaranthaceae, Anacardiaceae, and Rubiaceae made a cluster depending on their utilization by Lycaenidae and Nymphalidae. Cannabaceae, Convulaceae, Portulacaceae, and Salicaceae and Ebenaceae, Melastomataceae, Papaveraceae, Solanaceae, Urticaceae, and Violaceae made two sister clades because of their use pattern by Nymphalidae. Capparaceae closely branched with the Cleomaceae and Brassicaceae clade as they were exclusively used by Pieridae. The highest number of plant species (34) was used in the family Fabaceae by four butterfly families (Hesperiidae, Lycaenidae, Nymphalidae, and Pierid). As Primulaceae was solely used by Riodinidae, it positioned singly outside all clusters (Fig. 8).

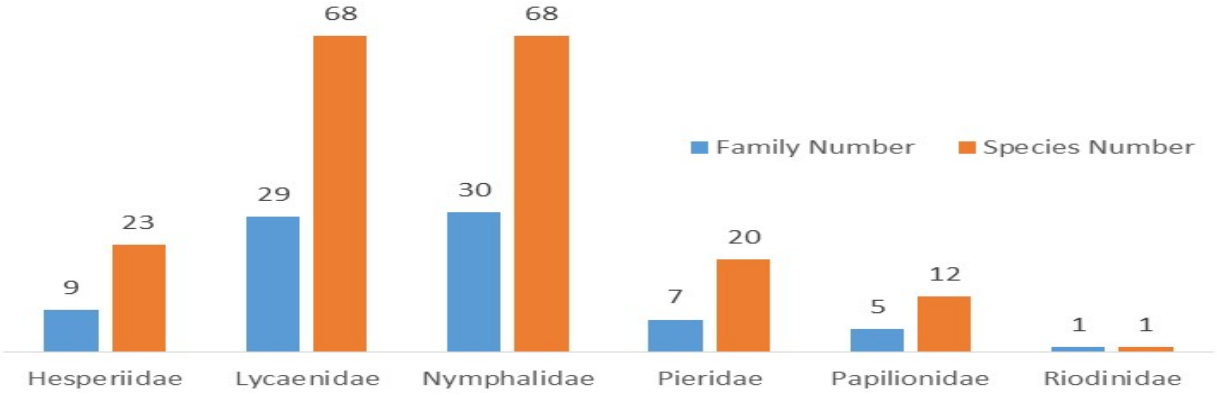

Figure 5: Number of plant families and plant species used by butterfly families.

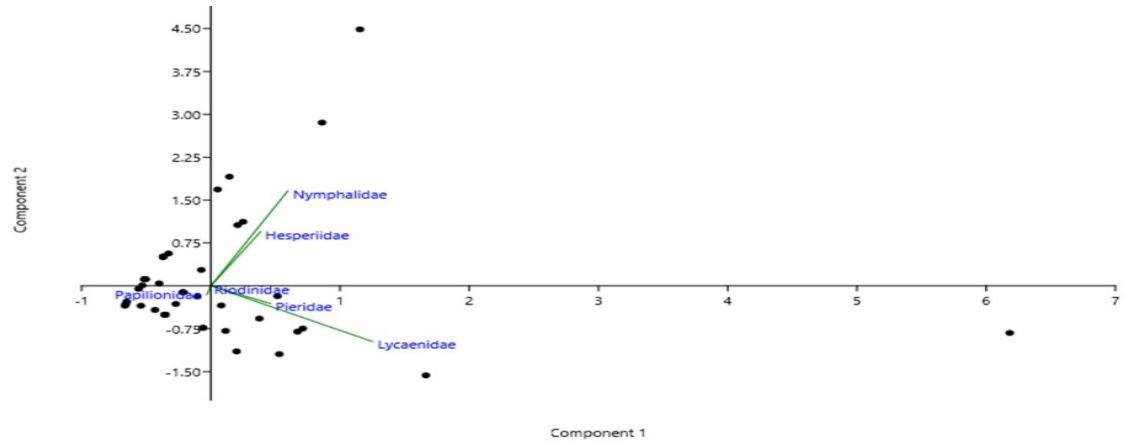

Figure 6: PCA biplot showing projection of the butterfly families on the principal component plane.

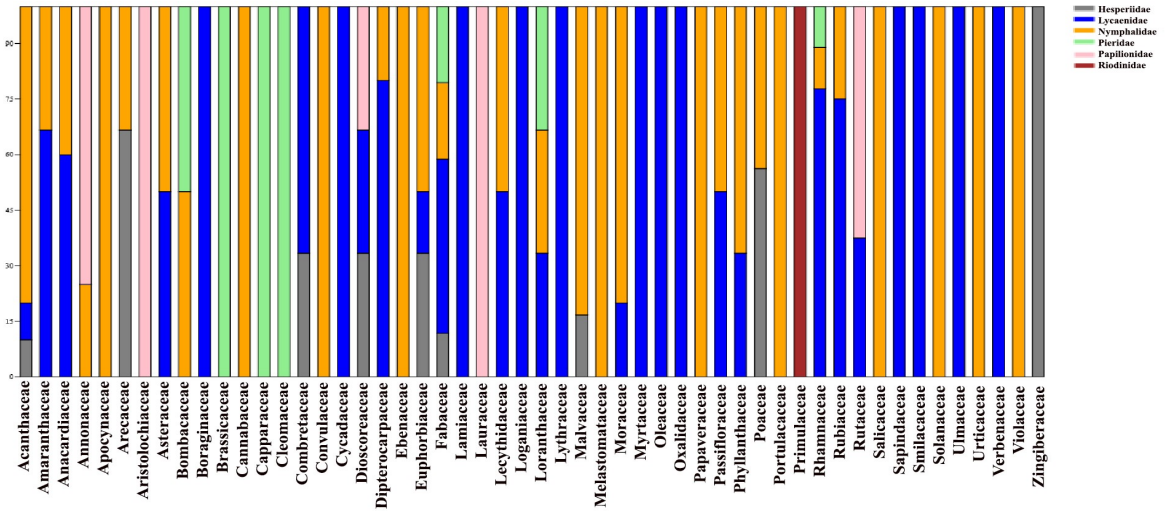

Figure 7: Percentage of usage of species from different plant families by butterfly families.

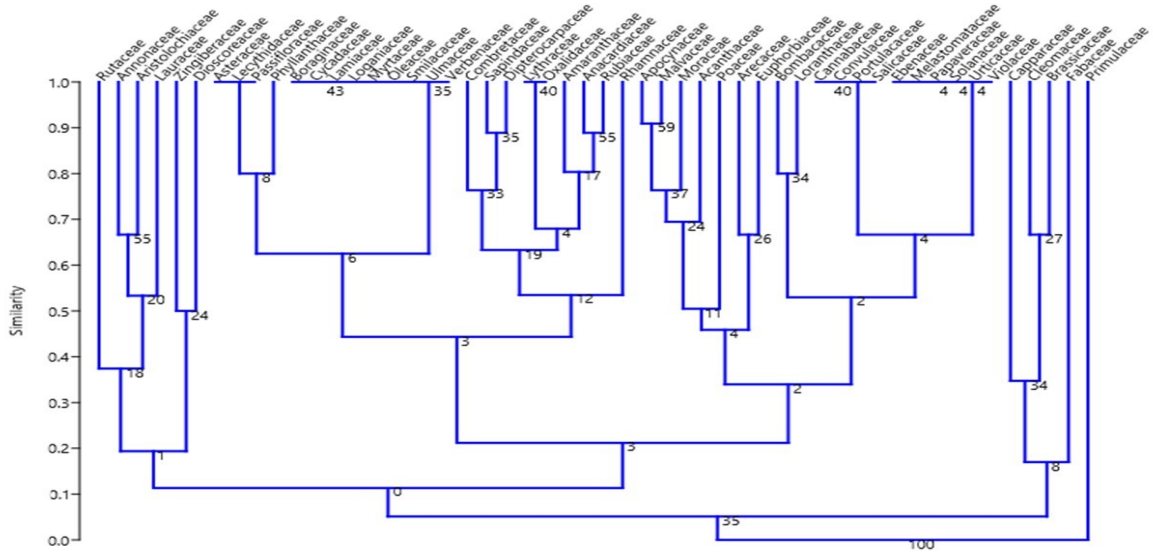

Figure 8: Dendrogram of plant families preferred by the butterflies as larval host plants.

Discussion

The observed butterfly number accorded well with previous research (Mukherjee and Mondal, 2020). Almost all plant species mentioned here were previously reported from the area (Malick, 1966; Sanyal, 1994). Nymphalidae and Hesperiidae are largely found in herb-rich areas but Papilionidae, Lycaenidae, and Pieridae preferred shrub and tree-enriched areas (Mukherjee and Mondal, 2020). The consequences for the ecological and evolutionary processes of insect–plant interactions are poorly understood. In their larval stage, the majority of butterfly species only feed on a small number of plant species, forming strong relationships with their host plants. The availability of similar plant chemical defenses (Schoonhoven et al., 2005) in a certain geographic area is assumed to account, at least in part, for the emergence of these ecological connections between butterflies and their hosts (Figs. 9 and 10). However, ANOVA results also suggest their guild level separations are significant enough so that their cooccurrence is quite natural in the studied area. Lycaenidae and Pieridae larva feast largely on the family Fabaceae. Hesperiidae and Nymphalidae both interact with host plants of Poaceae but they are considered as generalist feeders. The chemical compound genistein is specific to host plants of Lycaenidae butterflies and skimmianine attracts Papilionidae butterflies and may be found in the Rutaceae plant family (Muto-Fujita et al., 2017). Most of the used plant species were from the families Fabaceae and Poaceae because these families do not retain toxic compounds, and these less toxic plant species may help the resiliency of butterflies to switch on to new host plants because the butterflies are able to use their existing detoxification mechanisms to acclimatize to these plants.

Table 1: Checklist of larval host plants of butterfly species in the Bankura and Purulia districts of West Bengal, India arranged by butterfly family.

Sl. No.	Common name	Scientific name	Host plant	Family	References
Hesperiidae					
1	Chestnut bob	*Iambrix salsala* (Moore)	*Bambusa vulgaris* (Schrad. Ex J.C. Wendl.)	Poaceae	Robinson et al., 2010; Nitin et al., 2018
2	Indian palm bob	*Suastus gremius* (Moore)	*Borassus flabellifer* (L.); *Areca catechu* (L.); *Calamus rotang* (L.); *Calamus pseudofeanus* (Becc); *Rhapis excelsa* (Thunb.) A. Henry; *Caryota urens* (L.); *Phoenix sylvestris* (L.) Roxb.	Arecaceae	Robinson et al., 2010; Nitin et al., 2018
			Tamarindus indica (L.)	Fabaceae	
3	Common redeye	*Gangara thyrsis* (Fabricius)	*Bambusa vulgaris*	Poaceae	Robinson et al., 2010; Nitin et al., 2018
4	Dark palm dart	*Telicota ancilla* (Herrich-Schäffer)	*Bambusa vulgaris*; *Oryza sativa* (L.)	Poaceae	Wynter-Blyth, 1957; Kunte, 2000; Nitin et al., 2018
5	Rice swift	*Borbo cinnara* (Wallace)	*Imperata cylindrica* (L.) P. Beauv.; *Oryza sativa*; *Setaria barbata* (Lam.) Kunth; *Setaria pumila* (Poir.) Roem. and Schult.; *Phragmites karka* (Retz.) Trin. Ex Steud	Poaceae	Davidson et al., 1898; Pant and Chatterjee, 1950; Robinson et al., 2010; Nitin et al., 2018; Dey, 2020
6	Brown awl	*Badamia exclamationis* (Fabricius)	*Terminalia bellirica* (Gaertn.) Roxb.	Combretaceae	Kehimkar, 2008
7	Grass demon	*Udaspes folus* (Cramer)	*Curcuma longa* (L.); *Curcuma decipiens* (Dalzell); *Zingiber officinale* (Roscoe); *Costus speciosus* (J. Koenig ex Retz.) Sm.	Zingiberaceae	Kehimkar, 2008; Nitin et al., 2018
8	Common small flat	*Sarangesa desahara* (Moore)	*Blepharis* sp., *Asystasia* sp.	Acanthaceae	Bell, 1924; Kehimkar, 2008
9	Common grass dart	*Taractrocera maevius*	*Imperata cylindrica*; *Oryza sativa*	Poaceae	Nitin et al., 2018
10	Complete paint-brush swift	*Baoris farri* (Moore)	*Bambusa vulgaris*; *Oryza sativa* and other grasses	Poaceae	Nitin et al., 2018
11	Common banded awl	*Hasora chromus* (Cramer)	*Ricinus communis* (L.)	Euphorbiaceae	Nitin et al., 2018
			Pongamia pinnata (L.) Pierre.	Fabaceae	
12	Tree flitter	*Hyarotis adrastus* (Cramer)	*Phoenix sylvestris*; *Calamus rotang*; *Calamus pseudofeanus*	Arecaceae	Wynter-Blyth, 1957; Robinson et al., 2010
13	Golden angle	*Caprona ransonnetti* (Felder)	*Helicteres isora* (L.); *Urena lobata* (L.); *Triumfetta rhomboidei* (Jacq.)	Malvaceae	Davidson et al., 1897; Bell, 1923b; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et al., 2018
14	Small banded swift	*Pelopidas mathias* (Fabricius)	*Imperata cylindrica*; *Oryza sativa*	Poaceae	Kehimkar, 2008
15	Obscure branded swift	*Pelopidas agna* (Moore)	*Oryza sativa* and other grasses	Poaceae	Robinson et al., 2010
16	Water snow flat	*Tagiades litigiosa* (Möschler)	*Dioscorea pentaphylla* (L.); *Dioscorea oppositifolia* (L.)	Dioscoreaceae	Bell, 1923a; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
17	Common yellow-breasted flat	*Gerosis bhagava* (Moore)	*Dalbergia lanceolaria* (L.f.)	Fabaceae	Wynter-Blyth, 1957
18	Tri-color pied flat	*Coladenia indrani* (Moore)	*Terminalia elliptica* (Willd.)	Combretaceae	Wynter-Blyth, 1957; Bell, 1923b; Saji et al., 2018
			Mallotus philippensis (Lam.) Muell. Arg.	Euphorbiaceae	
			Bauhinia racemose (Lam.); *Desmodium* sp.	Fabaceae	
19	Bush hopper	*Ampittia dioscorides* (Fabricius)	*Oryza sativa*	Poeceae	Robinson et al., 2010

Table 1: (Continued).

Sl. No.	Common name	Scientific name	Host plant	Family	References
Lycaenidae					
20	Angled pierrot	*Caleta decidia* (Hewitson)	*Ziziphus jujuba* (Mill.), *Ziziphus oenopolia* (L.) Mill.	Rhamnaceae	Wynter-Blyth, 1957; Kunte, 2000
21	Common pierrot	*Castalius rosimon*	*Ziziphus oenopolia*; *Ziziphus jujuba*; *Ziziphus oenopolia*; *Ziziphus xylopyrus* (Retz.) Willd.	Rhamnaceae	Davidson et al., 1896; Wynter-Blyth, 1957; Nitin et al., 2018
22	Striped/rounded pierrot	*Tarucus nara* (Kollar)	*Ziziphus jujuba*	Rhamnaceae	Sevastopulo, 1941; Pant and Chatterjee, 1950; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
23	Lime blue	*Chilades lajus* (Stoll)	*Citrus aurantiifolia* (Christm.) Swingle; *Citrus limon* (L.) Osbeck; *Citrus medica* (L.); *Citrus sinensis* (L.) Osbeck; *Glycosmis pentaphylla* (Retz.) DC; *Limonia acidissima* (L.)	Rutaceae	Robinson et al., 2010, Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et al., 2018; Kunte, 2008
24	Tiny grass blue	*Zizula hylax* (Fabricius)	*Hemigraphis hirta* (T. Anderson); *Dipteracanthus prostrates* (Poir.) Nees; *Hygrophila auriculata* (Schumach.) Heine; *Ruellia tuberosa* (L.); *Ruellia tweediana* (Griseb.); *Phaulopsis dorsiflora* (Retz.) Santapau	Acanthaceae	Wynter-Blyth, 1957; Kunte, 2000; Kunte, 2006; Robinson et al., 2010; Nittin et al., 2018; Mukherjee, 2021
25	Pale grass blue	*Zizeeria maha* (Kollar)	*Oxalis corniculate* (L.)	Oxalidaceae	Bell, 1918a; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
26	Dark grass blue	*Zizeeria karsandra* (Moore)	*Amaranthus spinosus* (L.); *Amaranthus viridis* (L.)	Amaranthaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nittin et al., 2018
27	Lesser grass blue	*Zizina otis* (Fabricius)	*Amaranthus viridis* *Desmodium heterophyllum* (Willd.) DC.; *Desmodium triflorum* (L.) DC.	Amaranthaceae Fabaceae	Wynter-Blyth, 1957; Nittin et al., 2018; Bell, 1918a; Robinson et al., 2010
28	Zebra blue	*Syntarucus plinius* (Fabricius)	*Abrus precatorius*; *Dalbergia lanceolaria*; *Sesbania* sp.; *Albizia lebbeck* (L.) Benth.; *Plumbago auriculata* (Lam.); *Plumbago zeylanica* (L.)	Fabaceae Passifloraceae	Bell, 1918c; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nittin et al., 2018
29	Gram blue	*Euchrysops cnejus* (Fabricius)	*Butea monosperma* (Kuntze); *Cajanus cajan* (L.) Huth; *Lablab purpureus* (L.) Sweet; *Acacia caesia* (L.) Willd.; *Vigna unguiculata* (L.) Walp.; *Vigna trilobata* (L.) Verdc.; *Vigna radiata* (L.) R. Wilczek; *Pisum sativum* (L.); *Desmodium* sp.	Fabaceae	Bell, 1918c; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nittin et al., 2018
30	Common line blue	*Nacaduba nora* (Felder)	*Mallotus philippensis*	Euphorbiaceae	Robinson et al., 2010, Nittin et al., 2018
31	Large oak blue	*Arhopala amantes* (Hewitson)	*Terminalia catappa* (L.); *Terminalia bellirica*; *Terminalia alata* (Roth) *Shorea robusta*	Combretaceae Dipterocarpaceae	Wynter-Blyth, 1957; Kunte, 2000; Nittin et al., 2018
32	Indian oak blue	*Arhopala atrax* (Hewitson)	*Shorea robusta*	Dipterocarpaceae	Robinson et al., 2010
33	Common guava blue	*Virachola isocrates*	*Tamarindus indica* *Strychnos nux-vomica* (L.) *Punica granatum* (L.) *Psidium guajava* (L.) *Gardenia gummifera* (L.f.); *Gardenia latifolia* (Ait.); *Citrus aurantium* (L.); *Citrus sinensis*; *Limonia acidissima*; *Sapindus laurifolius* (Vahl); *Syzygium samarangense* (Blume) Merr. and L. M. Perry	Fabaceae Loganiaceae Lythraceae Myrtaceae Rubiaceae Rutaceae Sapindaceae	Bell, 1920; Wynter-Blyth, 1957; Robinson et al., 2010; Variya, 2020; Mukherjee, 2022

Table 1: (Continued).

Sl. No.	Common name	Scientific name	Host plant	Family	References
34	Pea blue	*Lampides boeticus* (L.)	*Butea monosperma*; *Abrus precatorius*; *Cajanus cajan* (L.) *Mill* sp.; *Lablab purpureus*; *Pisum sativum*; *Vigna unguiculata*; *Pongamia pinnata*; *Crotalaria spectabils* (Roth); *Crotalaria pallida* (Aiton)	Fabaceae	Davidson et al., 1896; Bell, 1918c; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Kunte, 2006
35	Leaf blue	*Amblypodia anita* (Hewitson)	*Olax imbricata* (Roxb); *Olax scandens* (Roxb)	Olacaceae	Bell 1919a; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
36	Forget me not	*Catochrysops Strabo* (Fabricius)	*Cajanus cajan*; *Tephrosia purpurea* (L.) Pers.; *Pongamia pinnata*; *Vigna unguiculata*; *Desmodium* sp., *Schleichera oleosa* (Lour.) Oken	Fabaceae Sapindaceae	Davidson et al., 1896; Robinson et al., 2010; Wynter-Blyth, 1957; Kunte, 2000; Nittin et al., 2018
37	Common cerulean	*Jamides celeno celeno* (Cramer)	*Abrus precatorius*; *Cajanus albicans* (Graham ex Wall.); *Butea monosperma*; *Pongamia pinnata*; *Saraca asoca* (Roxb.) De Wilde	Fabaceae	Bell, 1918c; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
38	Dark cerulean	*Jamides bochus bochus* (Stoll)	*Abrus precatorius*; *Cajanus albicans*; *Butea monosperma*; *Pongamia pinnata*; *Saraca asoca*; *Cajanus cajan*	Fabaceae	Wynter-Blyth, 1957; Robinson et al., 2010
39	Peacock royal	*Tajuria cippus* (Fabricius)	*Dendrophthoe falcata*	Loranthaceae	Nittin et al., 2018
40	The quaker	*Neopithecops zalmora* (Butler)	*Glycosmis pentaphylla*	Rutaceae	Davidson et al., 1896; Bell, 1916; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
41	Common red flash	*Rapala iarbus* (Fabricius)	*Terminalia catappa*; *Combretum indicum* (L.) DeFilipps; *Ziziphus rugosa* (Lam.)	Combretaceae Rhamnaceae	Wynter-Blyth, 1957; Robinson et al., 2010
42	Indigo flash	*Rapala varuna* (Moore)	*Combretum indicum* *Ziziphu rugosa*	Combretaceae Rhamnaceae	Bell, 1919c; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nittin et al., 2018
43	Slate falsh	*Rapal manea* (Hewitson)	*Mangifera indica* (L.) *Combretum indicum* *Lantana camara* (L.) *Ziziphus* sp. *Urena lobata* *Saraca asoca, Calliandra haematocephala* (Hassk.)	Anacardiaceae Combretaceae Verbenaceae Rhamnaceae Malvaceae Fabaceae	Wynter-Blyth, 1957; Kunte, 2000; Nittin et al., 2018; Saji et al., 2018; Mukherjee, 2021
44	Grass jewal	*Freyeria putli* (Kollar)	*Tridax procumbens* (L.) *Heliotropium strigosum* (Willd.) *Indigofera linifolia* (L.f.) Retz.; *Vicia* sp.; *Pisum sativum* *Oxalis corniculata*	Asteraceae Boraginaceae Fabaceae Oxalidaceae	Wynter-Blyth, 1957; Robinson et al., 2010
45	Silver streak blue	*Iraota timoleon* (Stoll)	*Punica granatum* *Ficus benghalensis* (L.); *Ficus racemose* (L.); *Ficus religiosa* (L.)	Lythraceae Moraceae	Wynter-Blyth, 1957; Robinson et al., 2010; Kunte, 2000
46	Monkey puzzle	*Rathinda amor* (Fabricius)	*Mangifera indica* *Barringtonia acutangular* (L.) Gaertn. *Ixora brachiate* (Roxb.); *Ixora coccinea* (L.) *Litchi chinensis*	Anacardiaceae Lecythidaceae Rubiaceae Sapindaceae	Wynter-Blyth, 1957; Kehimkar, 2008; Nittin et al., 2018
47	Yamfly	*Loxura atymnus* (Stoll)	*Dioscorea pentaphylla* *Smilax zeylanica* (L.)	Dioscoreaceae Smilacaceae	Bell, 1919c; Wynter-Blyth, 1957; Robinson et al., 2010; Nittin et al., 2018
48	Fluffy tit	*Zeltus amasa* (Hewitson)	*Ixora singaporensis* (hort.)	Rubiaceae	Anonymous, 2022

Table 1: (Continued).

Sl. No.	Common name	Scientific name	Host plant	Family	References
49	Common silverline	*Spindasis vulcanus* (Fabricius)	*Clerodendrum indicum* *Ziziphus jujube*; *Ziziphus rugosa*	Lamiaceae Rhamnaceae	Wynter-Blyth, 1957; Kehimkar, 2008; Robinsin et al., 2010
50	Common shot silverline	*Spindasis ictis* (Hewitson)	*Senna siamea* (Lam.) Irwin et Barneby	Fabaceae	Nittin et al., 2018
51	Tailless lineblue	*Prosotas dubiosa* (Semper)	*Mimosa pudica* (L.); *Mimosa hamata* (Willd.); *Albizia lebbak* (L.) Benth.	Fabaceae	Wynter-Blyth, 1957; Nittin et al., 2018
52	Pointed ciliate blue	*Anthene lycaenina* (r. Felder)	*Buchanania lanzan* (Lour.) M.R. Almeida *Bridelia retusa* (L.) A. Juss.	Anacardiaceae Phyllanthaceae	Wynter-Blyth, 1957; Nittin et al., 2018
53	Indian sunbeam	*Curetis thetis* (drury)	*Abrus precatorius*; *Butea monosperma*; *Pongamia pinnata*	Fabaceae	Bell, 1918c; Wynter-Blyth, 1957; Robinson et al., 2010
54	Angled sunbeam	*Curetis acuta* (Moore)	*Abrus precatorius*; *Butea monosperma*; *Pongamia pinnata*	Fabaceae	Nitin et al., 2018
55	Bright babul blue	*Azanus ubaldus* (Stoll)	*Acacia nilotica* (L.) Willd. ex Delile; *Acacia leucophloea* (Roxb.) Willd.	Fabaceae	Bell, 1918a; Wynter-Blyth, 1957; Robinson et al., 2010
56	Plains cupid	*Chilades pandava* (Horsfield)	*Cycas revoluta* (Thunb.) *Saraca asoka* *Holoptelea integrifolia* (Planch.)	Cycadaceae Fabaceae Ulmaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
Nymphalidae					
57	Tawny coster	*Acraea violae* (Fabricius)	*Passiflora foetida* (L.); *Passiflora edulis* (Sims); *Turnera ulmifolia* (L.); *Passiflora incarnata* (L.) *Hybanthus enneaspermus* (L.) F. Muell.	Passifloraceae Violaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et al., 2018
58	Angled castor	*Ariadne ariadne* (L.)	*Ricinus communis* (L.); *Tragia involucrate* (L.)	Euphorbiaceae	Bell, 1910b; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
59	Common castor	*Ariadne merione* (Cramer)	*Ricinus communis*; *Tragia involucrata*	Euphorbiaceae	Bell, 1910b; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
60	Great eggfly	*Hypolimnas bolina* (L.)	*Phaulopsis imbricata* (Forssk.) Sweet *Alternanthera sessilis* (L.) R. Br. ex DC. *Sida rhombifolia* (L.) *Portulaca oleracea* (L.) *Solanum torvum* (Sw.) *Laportea interrupta* (L.) Chew	Acanthaceae Amaranthaceae Malvaceae Portulacaceae Solanaceae Urticaceae	Davidson and Aitken, 1890; Bell, 1910b; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
61	Danaid eggfly	*Hypolimnas misippus* (L.)	*Barleria cristata* (L.); *Justicia betonica* (L.) *Ipomoea carnea* (Jacq.) *Sida cordifolia* (L.) *Portulaca oleracea*; *Portulaca Pilosa* (L.)	Acanthaceae Convolvulaceae Malvaceae Portulacaceae	Bell, 1910b; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
62	Common leopard	*Phalanta phalantha* (Drury)	*Flacourtia indica* (Burm. f.) Merr.	Salicaceae	Bell, 1910b; Wynter-Blyth, 1957; Kunte, 2000; Kunte, 2006; Robinson et al., 2010
63	Chocolate pansy	*Junonia iphita* (Cramer)	*Barleria cristata*; *Barleria prionitis* (L.); *Ruellia tuberosa*; *Justicia procumbens* (L.); *Dipteracanthus prostrate*	Acanthaceae	Winter-Blyth, 1957; Kunte, 2000; Nitin et al., 2018
64	Yellow pansy	*Junonia hierta* (Fabricius)	*Barleria cristata*; *Barleria prionitis*; *Hygrophila auriculata*	Acanthaceae	Winter-blyth 1957; Kunte 2000; Robinson et al., 2010
65	Grey pansy	*Junonia atlites* (L.)	*Hygrophila auriculata*; *Dipteracanthus prostrate*; *Ruellia tuberosa*; *Barleria cristata*; *Barleria prionitis*	Acanthaceae	Winter-Blyth, 1957; Kunte, 2000; Robinson, et al., 2010
66	Blue pansy	*Junonia orithya* (L.)	*Hygrophila auriculata*; *Barleria cristata*; *Barleria prionitis* *Evolvulus numularis*, *Ipomea batatas*	Acanthaceae Convolvulaceae	Winter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Mukherjee 2022
67	Lemon pansy	*Junonia lemonias* (L.)	*Hygrophila auriculata*; *Barleria cristata*; *Barleria prionitis*; *Ruellia tuberosa*; *Justicia procumbens*; *Dipteracanthus prostrate* *Cannabis sativa* (L.)	Acanthaceae Cannabaceae	Winter-Blyth, 1957; Kunte, 2000; Robinson et al., 2012

Table 1: (Continued).

Sl. No.	Common name	Scientific name	Host plant	Family	References
68	Peacock pansy	*Junonia almanac* (L.)	*Hygrophila auriculata*; *Barleria cristata*; *Barleria prionitis*; *Ruellia tuberosa*; *Justicia procumbens* *Oryza sativa*	Acanthaceae Poaceae	Winter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
69	Baronet	*Symphaedra nais* (Forster)	*Mangifera indica* *Shorea robusta* *Diospyros melanoxylon* (Roxb.) *Grewia asiatica* (L.)	Anacardiaceae Dipterocarpaceae Ebenaceae Malvaceae	Young, 1907; Bell 1909c, Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
70	Gaudy baron	*Euthalia lubentina* (Cramer)	*Dendrophthoe falcata*; *Dendrophthoe glabrescens* (Blakely) Barlow; *Loranthus longiflorus*	Loranthaceae	Wynter-Blyth, 1957; Robinson et al., 2010
71	Grey count	*Cynitia lepidea* (Butler)	*Careya arborea* (Roxb.) *Melastoma malabathricum* (L.)	Lecythidaceae Melastomataceae	Davidson and Aitken, 1890; Bell, 1909; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
72	Common baron	*Euthalia aconthea* (Cramer)	*Mangifera indica*; *Anacardium occidentale* (L.) *Streblus asper* (Lour.)	Anacardiaceae Moraceae	Young, 1907; Bell, 1909a; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et al 2018
73	Chestnut-streaked sailer	*Neptis jumbah* (Moore)	*Bombax ceiba* (L.) *Mallotus philippensis* *Cassia fistula* (L.); *Pongamia pinnata* *Thespesia populnea* (L.) *Ziziphus jujuba*	Bombacaceae Euphorbiaceae Fabaceae Malvaceae Rhamnaceae	Bell, 1910c; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et., al 2018
74	Common sailer	*Neptis hylas* (L.)	*Desmodium gengaticulum* (L.) DC.; *Bauhinia acuminata* (L.); *Vigna unguiculata*; *Canavalia ensiformis* (L.) DC. *Urena lobata*	Fabaceae Malvaceae	Wynter-Blyth, 1957; Kunte, 2000; Nitin et al., 2018
75	Common sergeant	*Athyma perius* (L.)	*Glochidion ellipticum* (Wight); *Phyllanthus virgatus* (G. Forst.); *Phyllanthus amarus* (Schumach. and Thonn.)	Phyllanthaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
76	Common lascar	*Pantoporia hordonia* (Stoll)	*Albizia lebbeck*; *Pithecellobium dulce* (Roxb.) Benth.	Fabaceae	Kehimkar, 2008; Author's pers. obs.
77	Vagrant	*Vagrans egista* (Cramer)	*Flacourtia indica*	Flacouriaceae	Kehimkar, 2008; Author's pers. obs.
78	Commander	*Moduza procris* (Cramer)	*Mitragyna parvifolia* (Roxb.) Korth.; *Mussaenda frondose* (L.) *Neolamarckia cadamba* (Roxb.) Bosser	Rubiaceae Fabaceae	Wynter-Blyth, 1957; Robinson et al., 2010; Nitin et al., 2018; Davidson and Aitken, 1890; Davidson et al., 1896; Bell, 1910c
79	Color sergeant	*Athyma inara* (Westwood)	*Glochidion ellipticum*, and other *Glochidion* sp.	Phyllanthaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010.
80	Common bush brown	*Mycalesis perseus* (Fabricius)	*Oplismenus compositus* (L.) P. Beauv.; *Oryza sativa*; *Echinochloa* sp.	Poaceae	Kunte, 2000, Robinson et al., 2010
81	Common evening brown	*Melanitis leda* (L.)	*Oplismenus compositus*; *Oryza sativa*; *Echinochloa* sp.; *Bambusa arundinacea* (Retz.); *Zea mays* (L.); *Brachiaria mutica* (Stapf); *Saccharum officinarum* (L.); *Pennisetum glaucum* (L.) R. Br.	Poaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et al., 2018
82	Common palmfly	*Elymnias hypermnestra* (L.)	*Cocos nucifera* (L.); *Areca catechu*; *Calamus rotang*; *Calamus pseudofeanus*; *Rhapis excelsa*; *Caryota urens*; *Phoenix sylvestris*	Arecaceae	Wynter-Blyth, 1957; Kunte, 2000; Kunte, 2006; Robinson et al., 2010; Nitin et al., 2018
83	Plain tiger	*Danaus chrysippus* (L.)	*Calotropis gigantea* (L.) R. Br.; *Pergularia daemia*; *Calotropis procera* (Forssk.) Chiov.; *Calotropis gigantea*; *Oxystelma esculentum* (L. f.) Sm.	Apocynaceae	Moore, 1890; Sevastopulo, 1938; Pant and Chatterjee, 1950; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
84	Striped/common tiger	*Danaus genutia* (Cramer)	*Oxystelma esculentum*; *Asclepias curassavica* (L.)	Apocynaceae	Wynter-Blyth, 1957; Kunte, 2000; Saji et al., 2022
85	Blue tiger	*Tirumala limniace* (Cramer)	*Dregea volubilis* (L. f.) Benth. ex Hook. f.; *Holarrhena pubescens* (Wall.); *Calotropis gigantea*; *Calotropis procera*	Apocynaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010, Nitin et al., 2018
86	Common crow	*Euploea core* (Cramer)	*Adenium obesum* (Forssk.) Roem. and Schult.; *Hemidesmus indicus* (L.) R. Br.; *Ichnocarpus frutescens* (L.) R. Br.; *Carissa carandasn* (L.); *Cascabela thevetia* (L.) Lippold *Ficus benghalensis*; *Ficus religiosa*; *Ficus racemose* (L.)	Apocynaceae Moraceae	Bell, 1909a; Sevastopulo, 1938; Pant and Chatterjee, 1950; Robinson et al., 2010; Nitin et al., 2018

Table 1: (Continued).

Sl. No.	Common name	Scientific name	Host plant	Family	References
87	Bamboo tree brown	*Lethe europa* (Fabricius)	*Bambusa bambos* (L.) Voss; *Bambusa vulgaris*	Poaceae	Wynter-Blyth, 1957; Robinson et al., 2010; Nitin et al., 2018
88	Painted lady	*Vanessa cardui* (L.)	*Artemisia vulgaris* (L.); *Tridax procumbens* (L.) *Argemone mexicana* (L.)	Asteraceae Papaveraceae	Robinson et al., 2010; Nitin et al., 2018
89	Common four ring	*Ypthima huebneri* (Kirby)	*Eleusine indica* (L.) Gaertn.	Poaceae	Bell, 1909b; Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
90	Double branded crow	*Euploea Sylvester* (Fabricius)	*Ichnocarpus frutescens* (L.) R. Br. *Ficus benghalensis*; *Ficus religiosa*; *Ficus racemosa*	Apocynaceae Moraceae	Bell, 1909a; Wynter-Blyth, 1957; Kunte, 2000; Nitin et al., 2018
91	Common five ring	*Ypthima baldus* (Fabricius)	*Eleusine indica*	Poaceae	Wynter-Blyth, 1957; Kunte, 2000; Nitin et al., 2018
92	Black rajah	*Charaxes solon* (Fabricius)	*Tamarindus indica*; *Dalbergia sissoo* (Roxb.); *Bauhinia racemosa*; *Pithecellobium dulce*	Fabaceae	Davidson and Aitken, 1890; Bell, 1909; Wynter-Blyth, 1957; Kunte, 2000; Kehimkar, 2008; Robinson et al., 2010
93	Brown king crow	*Euploea klugii* (Moore)	*Ficus hispida* (L. f.), *Streblus asper*	Moraceae	Bell, 1909a; Wynter-Blyth, 1957; Kunte, 2000
94	Dark branded bush brown	*Mycalesis mineus* (L.)	*Oryza sativa* and other grasses	Poaceae	Kehimkar, 2008
95	Common nawab	*Polyura athamas* (Drury)	*Caesalpinia bonduc* (L.) Roxb; *Albizia lebbek* (DC.) Benth.; *Acacia catechu* (L. f.) Willd.	Fabaceae	Kehimkar, 2008
96	Tawny rajah	*Charaxes Bernardus* (Fabricius)	*Miliusa tomentosa* (Finet and Gagnep.) *Tamarindus indica*; *Bauhinia racemosa*; *Adenanthera pavonine* (L.)	Annonaceae Fabaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et al., 2018
97	Painted courtesan	*Euripus consimilis* (Westwood)	*Trema orientalis* (L.) Blume	Cannabaceae	Bell, 1909c; Wynter-Blyth, 1957; Robinson et al., 2010
Papilionidae					
98	Common mormon	*Papilio polytes* (L.)	*Citrus aurantiifolia*; *Citrus maxima* (Burm.) Osbeck, *Citrus limon*; *Citrus medica*; *Glycosmis pentaphylla*; *Murraya paniculate* (L.) Jack; *Murraya koenigii* (L.) Spreng.	Rutaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
99	Blue mormon	*Papilio polymnestor* (Cramer)	*Citrus maxima*; *Citrus limon*; *Glycosmis pentaphylla*; *Murraya koenigii*	Rutaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
100	Common rose	*Pachliopta aristolochiae* (Fabricius)	*Aristolochia indica* (L.); *Aristolochia tagala* (Cham.) *Dioscorea wallichii* (Hook. F.)	Aristolochiaceae Dioscoreaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
101	Tailed jay	*Graphium Agamemnon* (L.)	*Polyalthia longifolia* (Sonn.) Thwaites; *Annona glabra*; *Annona squamosa* (L.); *Artabotrys hexapetalus* (L.f.) Bhandari; *Polyalthia cerasoides* (Roxb.) Bedd.	Annonaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et al., 2018
102	Common jay	*Graphium doson* (C. and R. Felder)	*Polyalthia longifolia*; *Annona glabra* (L.); *Annona squamosa*; *Artabotrys hexapetalus*	Annonaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et al., 2018
103	The lime	*Papilio demoleus* (L.)	*Citrus aurantiifolia*; *Citrus maxima* (Burm.) Osbeck; *Citrus limon*; *Citrus medica*; *Glycosmis pentaphylla*; *Murraya paniculata*; *Murraya koenigii*	Rutaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
104	Common mime	*Papilio clytia* (L.)	*Litsea glutinosa* (Lour.) C. B. Rob.	Lauraceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
105	Red helen	*Papilio Helenus* (L.)	*Citrus limon*; *Citrus medica*; *Glycosmis pentaphylla*	Rutaceae	Nitin et al., 2018.
106	Spot swordtail	*Graphium nomius* (Esper)	*Polyalthia longifolia*; *Miliusa tomentosa*	Annonaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
107	Common banded peacock	*Papilio crino* (Fabricius)	*Citrus limon*	Rutaceae	Mukherjee and Ghosh, 2018

Table 1: (Continued).

Sl. No.	Common name	Scientific name	Host plant	Family	References
Pieridae					
108	Psyche	*Leptosia nina* (Fabricius)	*Capparis baducca*; *Capparis zeylanica* (L.); *Capparis spinosa* (L.); *Crateva religiosa* (G. Forst.) *Cleome viscosa* (L.); *Cleome rutidosperma* (DC.)	Capparaceae Cleomaceae	Wynter-Blyth, 1957; Kunte, 2000; Kunte, 2006; Robinson et al., 2010; Mukherjee, 2022
109	Pioneer	*Belenois aurota* (Fabricius)	*Capparis sepiaria* (L.); *Capparis zeylanica*; *Capparis spinosa*	Capparaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
110	Striped albatross	*Appias olferna* (C. Swinhoe)	*Crateva religiosa*; *Crateva adansonii* (DC.); *Capparis sepiaria* *Cleome viscosa*, *Cleome rutidosperma*	Capparaceae Cleomaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010; Nitin et al., 2018
111	Chocolate albatross	*Appias lyncida* (Cramer)	*Bombax ceiba* *Capparis baducca*; *Capparis zeylanica*; *Capparis spinosa*; *Crateva religiosa*; *Crateva magna*	Bombacaceae Capparacea	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
112	Common jezebel	*Delias eucharis* (Drury)	*Butea monosperma* *Dendrophthoe falcata*; *Loranthus longiflorus*; *Loranthus cordifolius* (Wall.)	Fabaceae Loranthaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
113	Yellow orange tip	*Ixias pyrene* (L.)	*Capparis sepiaria*; *Capparis zeylanica*	Capparacea	Wynter-Blyth, 1957; Robinson et al., 2010
114	White-orange tip	*Ixias Marianne* (Cramer)	*Capparis sepiaria*; *Capparis zeylanica*	Capparacea	Wynter-Blyth, 1957; Robinson et al., 2010
115	Common gull	*Cepora Nerissa* (Fabricius)	*Capparis sepiaria*; *Capparis zeylanica*; *Capparis spinosa*	Capparacea	Wynter-Blyth, 1957; Robinson et al., 2010
116	Common emigrant	*Catopsilia Pomona* (Fabricius)	*Bauhinia racemosa*; *Cassia fistula*; *Senna tora* (L.) Roxb; *Senna siamea*; *Senna occidentalis* (L.) Link; *Butea monosperma*	Fabaceae	Wynter-Blyth, 1957; Robinson et al., 2010
117	Mottled emigrant	*Catopsilia pyranthe* (L.)	*Bauhinia racemosa*; *Butea monosperma*; *Cassia fistula*; *Cassia javanica* (L.); *Senna tora*; *Senna siamea*; *Senna occidentalis*; *Senna alata* (L.) Roxb.; *Senna sophera* (L.) Roxb.	Fabaceae	Wynter-Blyth, 1957; Kunte, 2000; Nitin et al., 2018
118	Common grass yellow	*Eurema hecabe* (L.)	*Albizia lebbeck*; *Caesalpinia pulcherrima* (L.) Sw.; *Cassia fistula*; *Mimosa pudica*; *Senna tora*; *Sesbania sesban* (L.) Merr.; *Smithia sensitiva* (Aiton); *Peltophorum pterocarpum* (DC.) K. Heyne;	Fabaceae	Wynter-Blyth, 1957; Kunte, 2000; Nitin et al., 2018
119	Three spot grass yellow	*Eurema blanda* (Boisduval)	*Albizia lebbeck*; *Cassia fistula*; *Cassia javanica*; *Delonix regia* (Bojer ex Hook.) Raf.; *Pithecellobium dulce*	Fabaceae	Robinson et al., 2010; Wynter-Blyth, 1957; Kunte, 2000
120	Spotless grass yellow	*Eurema laeta* (Boisduval)	*Cassia fistula*	Fabaceae	Butterflies of India, 2022
121	Small grass yellow	*Eurema brigitta* (Stoll)	*Smithia sensitiva* (Aiton)	Fabaceae	Nitin et al., 2018; Author's pers. obs.
122	One spot grass yellow	*Eurema andersonii* (Moore)	*Ventilago denticulate* (Willd.)	Rhamnaceae	Author's pers. obs.
123	Indian cabage white	*Pieris canidia* (L.)	*Brassica oleracea* var. *capitata* (L.); *Brassica oleracea* var. *botrytis* (L.); *Sinapis arvensis* (L.)	Brassicaceae	Wynter-Blyth, 1957; Kunte, 2000; Robinson et al., 2010
Riodinidae					
124	Double banded judy	*Abisara bifasciata* (Moore)	*Ardisia solanacea* (Roxb.); *Embelia tsjeriam-cottam* (Roem. and Schult.) A. DC.	Primulaceae	Davidson and Aitken, 1890; Moore, 1901; Pant and Chatterjee, 1950; Wynter-Blyth, 1957

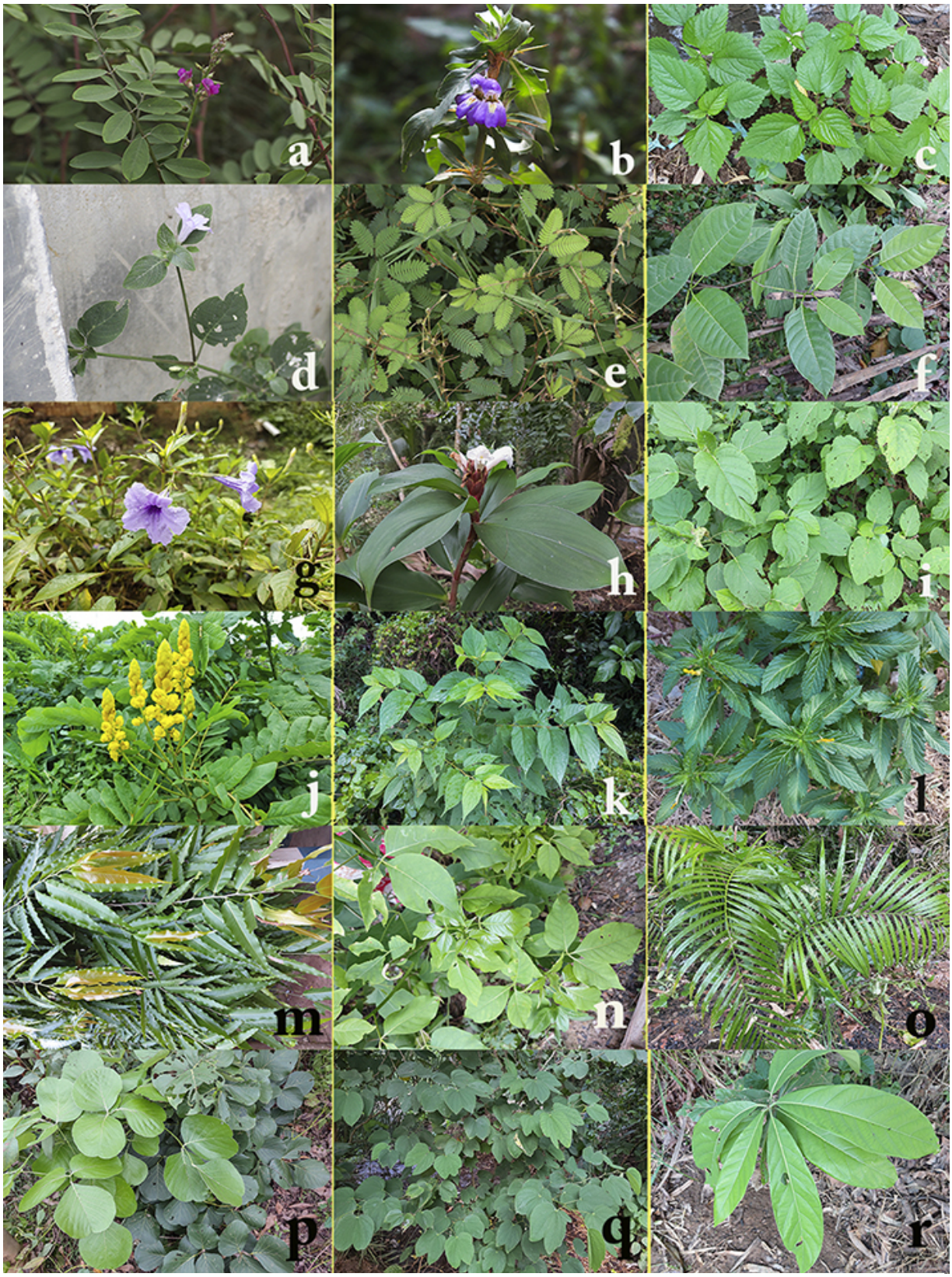

Figure 9: Photos of some common larval host plants of butterflies. a. *Tephrosia purpurea*, b. *Hygrophilla auriculata*, c. *Laportea interrupta*, d. *Dipteracanthus prostratus*, e. *Mimosa pudica*, f. *Neolamarckia cadamba*, g. *Ruellia tuberosa*, h. *Costus speciosus*, i. *Clerodendrum infortunatum*, j. *Senna alata*, k. *Trema orientalis*, l. *Turnera ulmifolia*, m. *Polyalthia longifolia*, n. *Crateva religiosa*, o. *Calamus rotang*, p. *Butea monosperma*, q. *Bauhinia racemosa*, r. *Litsea glutinosa*

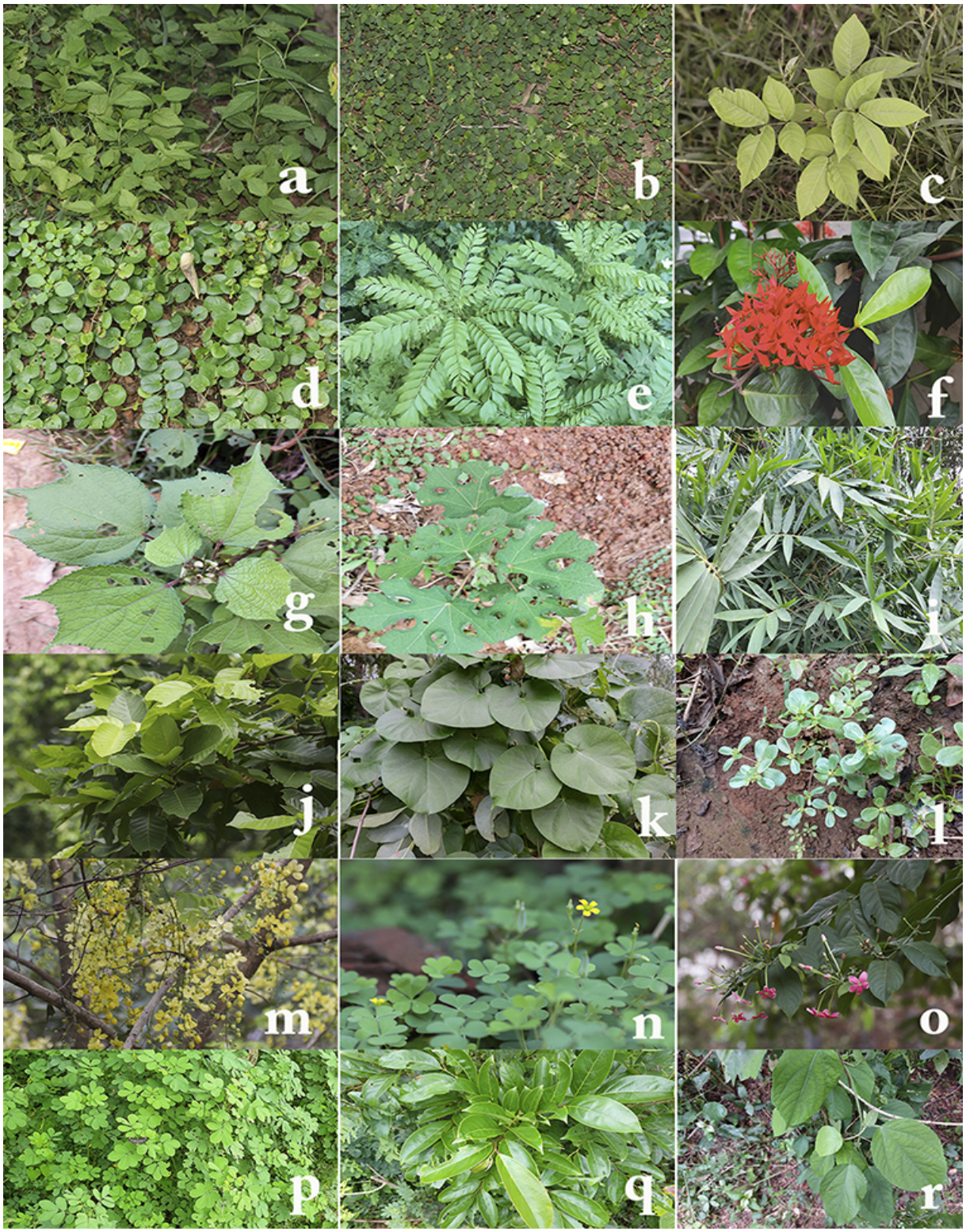

Figure 10: Photos of some common larval host plants of butterflies. a. *Sida rhombifolia*, b. *Desmodium triflorum*, c. *Senna occidentalis*, d. *Evolvulus nummularius*, e. *Murraya koenigii*, f. *Ixora coccinea*, g. *Urena lobata*, h. *Urena sinuata*, i. *Bambusa bambos*, j. *Shorea robusta*, k. *Pergularia daemia*, l. *Portulaca oleracea*, m. *Cassia fistula*, n. *Oxalis corniculate*, o. *Combretum indicum*, p. *Senna tora*, q. *Glochidion ellipticum*, r. *Tragia involucrate*

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Conflict of interest

The authors declare that there are no conflicting issues related to this research article.

Author contributions

K. M. conceptualized the idea, conducted all the field study, and carried out data collection, photography, and draft manuscript preparation. A. M. performed data analysis, visualization, result interpretation, and draft manuscript preparation.

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