



## BUTTERFLIES DIVERSITY (LEPIDOPTERA: PAPILIONOIDEA) IN AGRO-ECOSYSTEMS OF TIRUCHIRAPPALLI DISTRICT OF TAMIL NADU, INDIA

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### AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. Authors CK and VR designed the study, wrote the protocol, collected the materials and wrote the first draft of the manuscript. Author PCP helped in materials identification. Author AR managed the literature searches. All authors read and approved the final manuscript.

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### ABSTRACT

**Aim:** The present study is aimed to examine the diversity and relative abundance of butterflies.

**Place and Duration of Study:** In different agroecosystem of Trichy during the period of October 2016 to November 2017.

**Methodology:** A preliminary survey was carried out during the day from 07.00 to 12.00 from October 2016 to November 2017. The transect walk was done once in a month. The specimens were collected with the insect collection net. The collected species were photographed and deposited in Zoology Department, Nehru Memorial College, Puthanampatti, Tamil Nadu, India.

**Results:** A total of 80 species were recorded from different agricultural areas at Trichy. Analysis of relative abundance revealed 64 species were classed as common and 16 species as uncommon.

**Conclusion:** From the results we also observed maximum species diversity and abundance in the month of January to June and October to November and there was a gradual decrease during the early summer from the month of March and it reached maximum in the May.

**Keywords:** Diversity; butterflies; host plants; conservation.

### 1. INTRODUCTION

Butterflies visible group among insect fauna because of their large size, beautiful flying ability and general

diurnal habit. Many species of butterflies plays an important role in pollination and at the same time, immature stages (larva) of many species are economically important as pest of agricultural as well

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as horticultural crops. Few species were identified as bioindicators which being very sensitive towards any type of change in their habitat [1]. They react rapidly to environmental changes due to their short generation time, high mobility and specific habitat preferences [2]. Most butterflies are seasonal in their occurrence and many species show seasonal variations [3].

India hosts about 1,501 species belonging to different families viz., Papilionidae, Pieridae, Lycaenidae, Nymphalidae and Hesperidae which include nearly 100 endemic species [4]. The diversity of butterflies depends on plant diversity in a particular area [5]. Changes in land use may lead to landscape changes that reflect the diversity and distribution of butterflies. Monitoring the biodiversity is as vital parameters to study the local and global changes and sustainability of the developmental activities of various species [6].

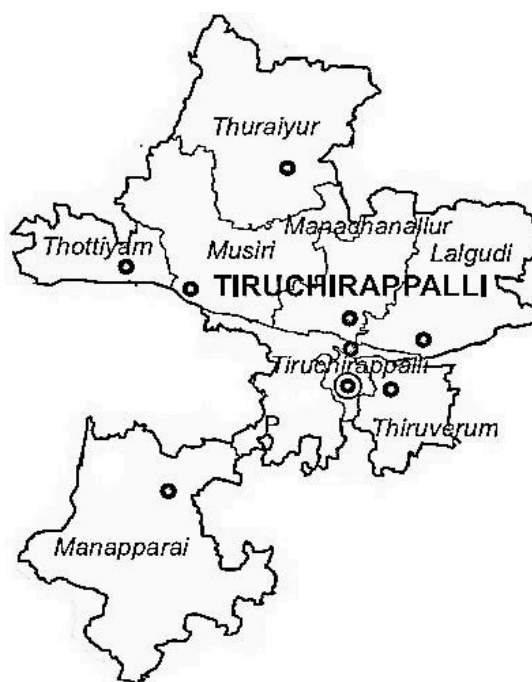
Agricultural intensification is widely accepted as a major cause biodiversity decline. It is a broad concept encompassing many factors, such as the loss of semi-natural habitat, fragmentation of ecosystems, use of heavy machinery and increased input of insecticides, pesticides and herbicides [7]. Of these, chemical pesticides potentially affect the development of butterfly larva and nectar producing plants which adversely affect adult butterfly diversity. The present study is aimed to examine the diversity and relative abundance of butterflies in the different agroecosystem of Trichy during the period of October 2016 to November 2017.

## 2. MATERIALS AND METHODS

### 2.1 Study Area

Survey was conducted in different taluks of Trichy district. The district has an area of 4509 sq.km. It is bound by Perambalur district on the north, Thanjavur district on the east, Pudukkottai and Dindigul districts on the south and Karur district on the west. Being a place located centrally in the State. The district lies between 11° 00' and 12° 00' degrees of the northern latitude and between 77° 28' and 78° 50' degrees of the eastern longitude. The average rainfall during the study period is 841.9 mm (33.15 inches). Rainfall is heavy during October and December because of the monsoon winds and from December to February the climate is cool and moist. Various agricultural fields were selected for the study the diversity of the butterflies. Dominant nectar source plants were Mesta, *Tridax procumbens*, lady's finger, brinjal, sorghum, Lemon blossom, *Murrayakoenigii*, *Moringa oleifera*, citrus species, banana.

The specimens of the butterflies were collected with the insect collection net (circumference 93 cm, handle length 87 cm and bag depth 77 cm) from different ecosystems of selected places of Tiruchirappalli district. The collected adult specimens were killed with the killing agent (ethyl acetate) charged in the killing bottle. After killing, the dead specimens were kept in the relaxing jar for making the specimens soft. They were pinned using different size entomological pins (38 mm×40 mm; 38 mm×55 mm) and then stretching of dead specimens were done in the spreading board boxes (40 cm×30 cm×10 cm). The stretched specimens were tagged with the labels carrying information such as the name of collector, locality, date of collection, and then placed in the well fumigated (with naphthalene balls) wooden showcases placed in the movable racks for storage. A preliminary survey was carried out during the day from 07.00 to 12.00 from October 2016 to November 2017. The transect walk was done once in a month as Pollard walk methods [8,9] for recording the butterflies. Most of the butterfly species were identified on sight, whereas, some species which could not be identified in that manner were collected with the help of a sweep net, picked up and identified through the handbook by Kehimkar [10] and standard references such as Evans [11] and Wynter Blyth [12]. Identified species were photographed and deposited in Zoology Department, Nehru Memorial College, Puthanampatti, Tamil Nadu, India.



**Map 1. Map showing the study area (Trichy district of Tamil Nadu) methodology used**

### 3. RESULTS AND DISCUSSION

A total of 80 species of butterfly belonging to 54 genera were recorded from the different agricultural areas at Trichy and its vicinity areas during the study period from October 2016 to October 2017 (Table 2). Among the five families, family Pieridae represented by 13 genera and 22 species was the most dominant followed by Nymphalidae (13 genera, 23 species), Hesperidae (14 genera, 15 species), Lycaenidae (10 genera, 12 species) and Papilionidae (4 genera, 08species) (Table 1). Status of abundance is shown as- C: Common, UC: Uncommon (Table 2).

#### Systematic Account

**Kingdom: Animalia**

**Phylum: Arthropoda**

**Class: Insecta**

**Order: Lepidoptera**

**Superfamily: Papilionoidea**

**Family: Papilionidea**

1. *Graphium doson* Felder, 1864. (Common name: Common jay)

**Material examined:** India: Tamil Nadu, Tiruchirappalli, It is wide spread and common throughout the Trichy. It is highly abundant during the month of October, 4♂♂ 6♀♀, 10 specimens, 08.viii.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** India, Sri Lanka, Myanmar, Laos, Cambodia, Thailand, China, Taiwan, Korea, Vietman, Japan, Philippines, W Malaysia, Sumatra, Borneo, Sulawesi, Java.

**Host plant:** Annonaceae (*Annona*, *Desmos*, *Miliusa*, *Polyalthia*, *Uvaria*), Apocynaceae (*Hunteria*), Calophyllaceae (*Mesua*), Lauraceae (*Cinnamomum*, *Litsea*), Magnoliaceae (*Magnolia*, *Michelia*) Robinson et al. (2010), Hoskins (2015), Savela (2015).

2. *Graphium agamemnon* Linnaeus, 1758. (Common name: Tailed Jay)

**Material examined:** India: Tamil Nadu, Tiruchirappalli, Srirangam, Manachanallur, Kalipatti, Karatampatti, 6♂♂ 4♀♀, 9.x.2017, C. Kanimozhi and V. Ramesh

**Distribution:** India (South India, Assam), Burma, China, Sri Lanka (Savela, 2018).

**Host plants:** *Michelia champaca*, *Ancana stenopetala*, *Annona cheromoya*, *A. cherimola*, *A. glabra*, *A. muricata*, *A. reticulata*, *A. squamosa*, *Cyathostemma micranthum*, *Desmos goezeanus*, *Fitzalanina heteropetala*, *Goniothalamus australis*, *Haplostichanthus johnsonii*, *Melodorum uhrii*, *Miliusa brahei*, *M. traceyi*, *Mitrephora froggattii*, *Polyalthia michaelii*, *P. nitidissima*, *Pseuduvaria froggattii*, *P. hylandii*, *P. mulgraveana*, *P. villosa*, *Rauwenhoffia leichhardtii*, *Rollinia deliciosa*, *Uvaria goezeanus*, *U. membranacea*, *U. rufa*, *Xylopia maccraei* (Savela, 2018).

3. *Pachliopta aristolochiae* Fabricius, 1775. (Common name Common Rose)

**Material examined:** India: Tamil Nadu, Tiruchirappalli, Melur, Srirangam, 4♂♂ 2♀♀, 08.viii.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Aristolochia indica*, *A. bracteolata*, *Aristolochia tagala*.

**Distribution:** Indo-Australian species has been described from India and Sri Lanka up to Southern China and Southeast Asia (EVANS 1932, TALBOT 1939). In India there are 5 sub-species and in the Eastern Himalayas, the distribution of this swallowtail species was recorded as Common by EVANS (1932) and TALBOT (1939).

4. *Pachliopta hector* Linnaeus, 1758. (Common name: Crimson Rose)

**Material examined:** India: Tamil Nadu, Tiruchirappalli, Srirangam, 4♂♂ 5♀♀, specimens, 08.viii.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Aristolochia indica*, *A. tagala*, *Thottea siliquosa*.

**Distribution:** India: *Pachliopta hector* (Crimson Rose) is a butterfly from the Australasia / Indomalaya (Australia) ecozone. You can observe this butterfly in India and Sri Lanka.

5. *Troides minos* Cramer, 1779. (Common name: Southern Birdwing)

**Material examined:** India: Tamil Nadu, Tiruchirappalli, Melur, 3♂♂ 5♀♀, 21.vii.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Aristolochia indica*, *Thottea siliquosa* (Wynter Blyth 1957, Kunte 2000).

**Distribution:** Sri Lanka; Myanmar; India: Sikkim, Orissa, Assam and south India

**6. *Papilio polytes* Linnaeus, 1758.** (Common name: Common Mormon)

**Material examined:** India: Tamil Nadu, Tiruchirappalli, Manachanallur, 4♂♂ 6♀♀, 08.viii.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** Asia, Pakistan, India, Malaysia, Indonesia, China, Philippine islands, Japan (Suwarno, 2010).

**Host plants:** *Atalantia racemosa*, *Aegle marmelos*, *Citrus aurantifolia*, *Citrus grandis*, *Citrus limon*, *Citrus medica*, *Citrus sinensis*, *Glycosmis arborea*, *Murraya koenigii*, *Murraya paniculata*, *Tripahsia* sp., *Zanthoxylum rhetsa* (Kunte, 2000).

**7. *Papilio demoleus* Linnaeus, 1758.** (Common name: Lime Butterfly)

**Material examined:** India: Tamil Nadu, Tiruchirappalli, Thuraiyur, 2♂♂ 3♀♀, 08.viii.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Citrus* and wild rutaceous plants.

**Distribution:** Sri Lanka; China; Vietnam; Arabia and India.

**8. *Papilio polymnestor* Cramer, 1775.** (Common name: Blue Mormon)

*Papilio polymnestor* Cramer, 1775, *Uitl. Kapellen* 1 (1-7): 83; TL: Cochin, Kerala, India

**Material examined:** India: Tamil Nadu, Tiruchirappalli, Srirangam, 6♂♂ 4♀♀, 10.x.2017, C. Kanimozhi and V. Ramesh

**Distribution:** India (South India, Madhya Pradesh, Bihar, West Bengal, Maharashtra, Sikkim), Sri Lanka (Savela, 2018).

**Host plant:** *Citrus limon*, *Glycosmis pentaphylla* (Kunte 2000), *Atalantia wightii* (Kunte 2006), *Citrus maxima*, *Garcinia xanthochymus*, *Paramignya monophylla* (Kunte 2000; Robinson et al., 2010), *Atalantia racemose*, *Murraya koenigii* (Robinson et al., 2010),

**Family: Lycaenidae**

**1. *Lampides boeticus* (Linnaeus, 1767)** (Common name: Pea blue)

*Papilio boeticus* Linnaeus, 1767, *Systema naturae per regna tria naturae, secundum classes, ordines,*

*genera, species, cum characteribus, differentiis, synonymis, locis* (Ed. 12) 1(2): 789. TL: Algeria

**Material examined:** India: Tamil Nadu, Tiruchirappalli, 2♂♂ 2♀♀, 27.xi.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** India, Afghanistan, Algeria, Bangladesh, Bhutan, Myanmar, Nepal, Pakistan, Sri Lanka (Lodh and Agarwala, 2015).

**Host plants:** *Butea monosperma*, *Cajanus cajan*, *Crotalaria capensis*, *Crotalaria juncea*, *Crotalaria micans*, *Crotalaria pallida*, *Vigna unguiculata* (Kunte 2000; Robinson et al., 2010), *Pongamia pinnata* (Wynter-Blyth, 1957).

**2. *Chilades parrhasius* Fabricius, 1793.**(Common name: Indian Small Cupid)

Indian Small Cupid: *Acacia* (Kunte 2000), *Acacia nilotica* (V.C. Balakrishnan pers. obs. 2017), *Dichrostachys cinerea* (P. Churi pers. obs. 2017) (Fabaceae).

**Material examined:** India: Tamil Nadu, Tiruchirappalli, Kalipatti, 6♂♂ 3♀♀, 08.viii.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants.

**Distribution:** India: southern Turan, southern Ghissar, Iran, Afghanistan, Pakistan, Sri Lanka and southern, central and north-west India

**3. *Chilades lajus* Cramer, 1782.** (Common name: Lime Blue).

**Material examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 1♂♂ 1♀♀, 09.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Citrus* and other rutaceous plants.

**Distribution:** Throughout India.

**4. *Chilades pandava* Horsfield, 1829.** (Common name: Plains Cupid) *Luthrodes pandava* (Horsfield, [1829]) (Syn. *Chilades pandava* (Horsfield, 1829)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 2♂♂, 09.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Cycas circinalis*, *Cycas revoluta* (Family Cycadaceae), *Acacia* spp., *Xylia xylocarpa* (Mimosaceae).

**Distribution:** Throughout India.

**5. *Zizina otis* Fabricius, 1787.** (Common name: Lesser Grass Blue)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thuraiyur, 2♂♂, 10.viii.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Desmodium heterophyllum*, *Sesbania bispinosa*, *Lathyrus* spp., *Vicia* spp. (Family Fabaceae).

**Distribution:** *Z. o. indica* (Murray, 1874): Throughout India as far east as Jharkhand.

**6. *Euchrysops cnejus* Fabricius, 1798.** (Common name: Gram Blue)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Omanthur, 1♂♂ 2♀♀, c09.viii.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Palash Butea monosperma*, *Ougeinia dalbergioides*, *Paracalyx scariosa*, *Pea Pisum sativum*, *Vigna cylindrica*, *V. trilobata*, cultivated grams and beans (Family Fabaceae), *Acacia* spp. (Family Mimosaceae).

**Distribution:** Throughout India.

**7. *Catochrysops strabo* Fabricius, 1793** (Common name: Forget Me Not)

*Hesperia strabo* Fabricius (1793), *Ent. Sys.* 3.1:287 (*Hesperia*).

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thuraiyur, 2♂♂ 2♀♀, 08.viii.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** Europe, Africa, South and Southeast Asia, and Australia (Bingham, 1907).

**Host plant:** Fabaceae (Kunte, 2000).

**8. *Everes lacturnus* Godard, 1824** (Common name: Orange Crowned Cupid)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Omanthur, 2♂♂ 2♀♀, 09.viii.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Desmodium* spp, *Trifolium* spp. (Family Fabaceae)

**Distribution:** India: E. l. syntala Cantlie, 1963: Gujarat southwards to Andhra Pradesh and Kerala.

**9. *Curetis thetis* Drury, 1773** (Common name: Indian Sunbeam)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Melur, 1♂♂ 3♀♀, 28.xii.2016, C. Kanimozhi and V. Ramesh.

**Host plant:** *Abrus precatorius*, *Derris scandens*, *Pongamia pinnata*, *Aganope thyrsiflora*, *Palash Butea monosperma* (Family Fabaceae), *Xylia dolabriformis* (Family Mimosaceae)

**Distribution:** India: Gujarat east to Odisha and south to Kerala.

**10. *Castalius rosimon* Fabricius, 1775** (Common name: Common Pierrot)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Top Sengattupatti, 2♂♂ 2♀♀, 28.xii.2016, C. Kanimozhi and V. Ramesh.

**Host plant:** *Ziziphus jujube*, *Ziziphus rugosa* (Wynter-Blyth 1957, Kunte 2000).

**Distribution:** India: Karnataka

**11. *Anthene lycaenina* Felder, 1868.** (Common name: Pointed Ciliate Blue)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Peramangalam, 2♀♀, 13.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Buchanania lanzan*, *Bridelia retusa*, *Drypetes roxburghii*.

**Distribution:** India: *A.lycaenina* (Felder, 1868): Gujarat southwards to Kerala and eastwards to Odisha and W. Bengal.

**12. *Jamides celeno* Cramer 1775.** (Common name: Common Cerulean)

*Papilio celeno* Cramer, 1775, *Uitlandsche Kapellen (Papillons exotiques)* 1(1–7): 31. TL: India.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 1♂♂ 2♀♀, 10.ix.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** India, Afghanistan, Bangladesh, Bhutan, Myanmar, Nepal, Pakistan, Sri Lanka (Lodh and Agarwala, 2015).

**Host plants:** *Abrus precatorius*, *Trichilia hirta*, *Trichilia trijuga* (Robinson et al., 2010), *Butea monosperma*, *Phaseolus adenanthus*, *Pongamia*

*pinnata*, *Saraca asoca*, *Xylia xylocarpa*, *Heynea trijuga* (Kunte 2000).

**Family:** Nymphalidae

**1. *Hypolimnys misippus* Linnaeus, 1764**  
(Common name: Danaid Eggfly)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 3♂♂ 4♀♀, 10.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Hibiscus spp.

**Distribution:** Throughout India

**2. *Hypolimnys bolina* Linnaeus, 1758** (Common name: Great Egg fly)

*Papilio bolina* Linnaeus, 1758, *Syst. Nat.* 479.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 2♂♂ 3♀♀, 10.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Portulaco oleracea* (Bingham, 1905).

**Distribution:** Himalayas up to 6000 feet; extending to the Malayan Subregion and China (Bingham, 1905).

**3. *Junonia lemonias* Linnaeus, 1758.** (Common name: Lemon Pansy)

*Papilio lemonias* Linnaeus 1758, *Syst. Nat.* : 473.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 1♂♂ 1♀♀, 10.ix.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** North West Himalayas, Kumaun, Punjab, Bengal, Western and Southern India, Ceylon (Bingham, 1907).

**Host plants:** *Hygrophila auriculata*, *Cannabis sativa*, *Corchorus capsularis* (Kunte 2000), *Hygrophila costata*, *Nelsonia canescens*, *Sida rhombifolia* (Robinson et al., 2010).

**4. *Junonia almana* Linnaeus, 1758** (Common name: Peacock Pansy)

*Papilio almana* Linnaeus, 1758, *Syst. Nat.* 472.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Top Sengattupatti, 2♂♂ 2♀♀, 28.xii.2016, C. Kanimozhi and V. Ramesh.

**Distribution:** India, Malayan Sub region, China and Japan (Bingham, 1905).

**Host plants:** *Mimulus gracilis*, Rice crop (Bingham, 1905).

**5. *Junonia hierta* Fabricius, 1798.** (Common name: Yellow Pansy) *Junonia hierta* Fabricius, 1798, *Ent. Syst. Suppl.*: 424

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 2♀♀, 10.ix.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** India (Bingham, 1907).

**Host plants:** Apocynaceae, Moraceae and Sapotaceae (Saji et al., 2017).

**6. *Junonia atlites* Linnaeus, 1763.** (Common name: Grey Pansy)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Samayapuram, 1♂♂ 2♀♀, 10.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Barleria* spp. (*B. cristata*), *Hygrophila auriculata* (Family Acanthaceae).

**Distribution:** India: *J. a. atlites* (Linnaeus, 1763): Throughout India except arid regions; Andamans and Nicobars.

**7. *Junonia iphita* Cramer 1779.** (Common name: Chocolate Pansy)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Top Sengattupatti, 2♂♂ 2♀♀, 28.xii.2016, C. Kanimozhi and V. Ramesh.

**Host plant:** *Carvia callosa* (Syn. *Strobilanthes callosa*), *Hygrophila auriculata*, *Justicia neesii*, *Lepidagathis prostrata* (Family Acanthaceae).

**Distribution:** India: *J. i. pluvialis* Fruhstorfer, 1900: Peninsular India to Madhya Pradesh.

**8. *Tirumala septentrionis* Butler, 1874.** (Common name: Dark Blue tiger)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Puthanampatti, 2♂♂ 1♀♀, 10.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Vallis dichotoma*, *V. heynei* (Family Apocynaceae), *Cosmostigma racemosa*, and *Wattakaka volubilis* (Family Asclepiadaceae).

**Distribution:** India: *T. s. dravidarum* (Fruhstorfer, 1899): Gujarat east to Odisha and south to Kerala.

**9. *Tirumala limniace* Cramer, 1775.** (Common name: Blue Tiger)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Puthanampatti, 2♂♂ 1♀♀, 08.ix.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** China, India, Sri Lanka, Pakistan, Myanmar, Bangladesh and Thailand (Ambrose and Raj, 2005).

**Host plant:** Poaceae (Saji et al., 2017).

**10. *Danaus chrysippus* Linnaeus, 1758.** (Common name: Plain Tiger)

*Papilio chrysippus* Linnaeus, 1758, *Syst. Nat. (ed.x)*: 471, n.81.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thuraiyur, 2♀♀, 17.viii.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** Southern Europe, Syria, Ethiopian Region, through Arabia, Persia, Afghanistan China, Malayan Subregion, Sulu and the Celebes (Bingham, 1905).

**Host Plant:** *Calotropis gigantean*, *Calotropis procera* (Robinson et al., 2010).

**11. *Danaus genutia* Cramer, 1779.** (Common name: Striped Tiger)

*Papilio genutia* Cramer, 1779, *Pap. Exot.* 3: 23, t.206.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Abinimangalam, 2♂♂ 1♀♀, 20.ix.2017, C. Kanimozhi and V. Ramesh

**Distribution:** British India (Bingham, 1905).

**Host plants:** Apocynaceae (Saji et al., 2017).

**12. *Euploea core* Cramer, 1780.** (Common name: Common Crow)

*Papilio core* Cramer, 1780, *Pap. Exot.* 3: 133, t. 267.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Abinimangalam, 2♂♂ 0.ix.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** India (Bingham, 1907).

**Host plants:** *Apocynaceae*, *Moraceae* and *Sapotaceae* (Saji et al., 2017).

**13. *Mycalesis subdita* Moore, 1890.** (Common name: Tamil Bushbrown)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Srirangam, 1♀♀, 21.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Oplismenus compositus* (K. Kunte, 2017) (Poaceae).

**Distribution:** India: Karnataka, Tamil Nadu.

**14. *Mycalesis perseus typhlus* Fabricius, 1775.** (Common name: Common Bushbrown)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Srirangam, 1♂♂ 2♀♀, 21.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Oryza* spp. and grass spp. (Family Poaceae).

**Distribution:** India: *M. p. tabitha* (Fabricius, 1793): Peninsular India south of the Himalaya to Kerala.

**15. *Mycalesis mineus* Linnaeus, 1758.** (Common name: Dark-brand Bushbrown)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Srirangam, 2♂♂ 4♀♀, 21.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Oryza* spp. and grass spp. (Family Poaceae).

**Distribution:** India: *M. m. polydecta* (Cramer, [1777]): Peninsular India from Gujarat to W. Bengal to Kerala; Lakshdweep.

**16. *Melanitis leda* Linnaeus, 1758.** (Common name: Common evening brown)

*Melanitis lela* Moore, 1758, *Syst. Nat. (ed. 10)*: 474.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Srirangam, 2♀♀, 21.ix.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** Indo-Malayan Region down to Australia, Burma, Ceylon (Bingham, 1907).

**Host plants:** *Apluda* spp., *Cyrtococcum* spp., *Eleusine* spp., *Oplismenus composites*, *Oryza sativa*, *Panicum* spp., *Sorghum* spp., *Zea* spp. (Kunte, 2000).

**17. *Phalanta phalantha* (Drury, 1773)** (Common name: Common Leopard)

*Papilio phalantha* Horsfield, 1829, *Cat. Lep.E.Ind.Comp* pl. 7 (*Papilio*).

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Nochiyam, 3♂♂ 2♀♀, 08.viii.2017, C. Kanimozhi and V. Ramesh

**Distribution:** India, Ceylon, Assam, Burma, Tenasserim, China, Japan and the Malayan Subregion (Bingham, 1905).

**Host plants:** *Flacourtia* species (Bingham, 1905).

**18. *Acraea terpsicore* (Linnaeus, 1758)** (Common name: Tawny Caster)

*Papilio terpsicore* Linnaeus, 1758.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Nochiyam, 2♂♂ 3♀♀, 08.viii.2017, C. Kanimozhi and V. Ramesh

**Distribution:** India (Kunte et al., 2018)

**Host plants:** *Passifora edulis*, *Passifora foetida* (Kunte, 2000), *Adenia hondala*, *Passifora subpeltata*, *Vitex pinnata* (Robinson et al., 2010).

**19. *Ariadne ariadne* (Linnaeus, 1763)** (Common name: Angled Castor)

*Papilio ariadne* Linnaeus, 1763, in Johansson (Thesis), *Centuria Insectorum, Amoenitates Academicae* 6: 407. TL: Java, Indonesia

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 2♂♂ 3♀♀, 11.viii.2017, C. Kanimozhi and V. Ramesh.

**Host plants:** *Ricinus communis*, *Tragia hispida*, *Tragia involucrata*, *Tragia plukenetii* (Kunte 2000; Robinson et al., 2010).

**20. *Ariadne merione*, Cramer, 1777** (Common name: Common Castor)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 3♂♂ 2♀♀, 11.viii.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Ricinus communis*, Indian Stinging Nettle *Tragia involucrata*, *T. plukenetii* (Family Euphorbiaceae).

**Distribution:** India: *A. m. merione* (Cramer, [1777]): Gujarat to Kerala and Andhra Pradesh.

**21. *Charaxes solon* Fabricius, 1793** (Common name: Black Rajah)

*Papilio solon* Fabricius, 1793, *Entomologia systematica* 3 (1): 69. TL: Tranquebar, South India

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Sengattupatti, 2♀♀, 06.x.2017, C. Kanimozhi and V. Ramesh

**Distribution:** India (common except in extreme Northwest), Bangladesh, Bhutan, Myanmar, Nepal, Sri Lanka (Lodh and Agarwala, 2015).

**Host plants:** *Dalbergia sissoo*, *Moullava spicata*, *Pithecellobium dulce* *Tamarindus indica* *Xylia xylocarpa* (Robinson et al., 2010; Kalesh and Prakash, 2015).

**22. *Cupha erymanthis*, Drury, 1773** (Common name: Rustic)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 3♂♂ 2♀♀, 15.x.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Flacourtia ramontchi*, *F. indica*, *F. montana*, *Smilax* sp, *Salix* sp.

**Distribution:** India: Kerala, Karnataka.

**23. *Neptis hylas*, Linnaeus, 1758.** (Common name: Common Sailer)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 2♂♂ 3♀♀, 15.x.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Euphorbiaceae, Fabaceae.

**Distribution:** India

**Family:** Hesperidae

**1. *Hasora chromus*, Cramer 1782** (Common name: Common Banded Awl)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thuraiyur, 2♂♂, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Castor-oil-plant *Ricinus communis* (Family Euphorbiaceae), *Derris scandens*, Pongam Tree *Pongamia pinnata* (Family Fabaceae), *Trichilia connaroides* (Family Meliaceae).

**Distribution:** India: *H. c. chromus* (Cramer, [1780]): Throughout India and Andaman & Nicobar Island.

**2. *Badamia exclamationis*, Fabricius, 1775** (Common name: Brown Awl)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thuraiyur, 03 specimens, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host Plants:** *Combretum albidum*, *Combretum latifolium*, and *Combretum ovalifolium*, *Terminalia bellerica*, *Terminalia catappa* (Family Combretaceae), *Hiptage benghalensis* (Family Malpighiaceae), *Linociera purpurea*, *Ficus* spp.

**Distribution:** Throughout India.

**3. Gomalia elma, Trimen, 1862** (Common name: African Marbled Skipper)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thuraiyur, 2♂♂, 2♀♀, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants such as *Butea monosperma*, *Pisum sativa*, *Vigna sinensis*, *Crotalaria* sp.

**Distribution:** India: *G. e. albofasciata* Moore, 1879: Himachal Pradesh; Maharashtra to Kerala and Telangana.

**4. Pseudoborbo bevani, Moore, 1878** (Common name: Bevan's Swift)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Lalgudi, 1♂♂ 2♀♀, 10.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants such as *Butea monosperma*, *Pisum sativa*, *Vigna sinensis*, *Crotalaria* sp.

**Distribution:** India: Gujarat east to W. Bengal and southwards to Kerala; Jammu & Kashmir to N.E. India.

**5. Parnara bada, Moore, 1878** (Common name: Oriental Swift)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Lalgudi, 1♂♂ 2♀♀, 10.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants such as *Butea monosperma*, *Pisum sativa*, *Vigna sinensis*, *Crotalaria* sp.

**Distribution:** Throughout India

**6. Udaspes folus, Cramer, 1775.**

**Grass Demon Udaspes folus (Cramer, 1775)**

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thottiyam, 2♂♂ 2♀♀, 13.xi.2017,

C. Kanimozhi and V. Ramesh.

**Host plant:** Species of ginger and turmeric including *Curcuma aromatica*, *C. decipiens*, *C. pseudomontana*, *Hedychium* spp., *Zingiber* sp. (Family Zingiberaceae). Also on Grasses.

**Distribution:** India: Gujarat to West Bengal and south to Kerala; Himachal Pradesh to N. E. India.

**7. Suastus gremius, Fabricius, 1798** (Common name: Indian Palm Bob)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thottiyam, 2♂♂ 2♀♀, 13.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Calamus* spp., *Caryota urens*, *Cocos nucifera*, *Licuala grandis*, *Phoenix acaulis*, *P. lourierii* (Family Arecaceae).

**Distribution:** India: *S. g. gremius* (Fabricius, 1798): Throughout India.

**8. Baoris farri, Moore, 1878** (Common name: Paintbrush Swift)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thottiyam, 1♂♂ 2♀♀, 13.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Ochlandra travancorica*, *Ochlandra scriptoria*, *Bambusa striata* and *Bambusa wamin*.

**Distribution:** India: *B. f. farri* (Moore, 1878): Maharashtra southwards to Kerala and eastwards to W. Bengal; Uttarakhand to N.E. India

**9. Borbo cinnara Wallace, 1866** (Common name: Rice Swift)

*Hesperia cinnara* Wallace, 1866, *Proc. of the Zoological Society of London* (2): 361. TL: Formosa, China

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Manapparai, 1♂♂ 1♀♀, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plants:** *Oryza sativa* (Robinson et al., 2010), *Phragmites karka*, *Rottboellia cochinchinensis*, *Setaria barbata*, *Axonopus compressus* (Kalesh and Prakash 2007).

**Distribution:** India (common in almost all states of India, Tripura), Bangladesh, Bhutan, China, Myanmar, Nepal, Sri Lanka (Lodh and Agarwala, 2015).

**10. *Pelopidas mathias*, Fabricius, 1798** (Common name: Small Branded Swift)

**Variable Swift *Pelopidas mathias* (Fabricius, 1798)**  
(Syn. Small Branded Swift)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Manapparai, 1♂♂ 2♀♀, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Oryza sativa* (Rice), *Cymbopogon nardus* (Citronella Grass), *Imperata cylindrica* (Blady Grass), *Saccharum officinarum* (Sugarcane).

**Distribution:** India: Throughout India including Andaman & Nicobar Islands (Central Nicobars).

**11. *Telicota ancilla*, Herrich-Schaffer, 1869**  
(Common name: Dark Palm Dart)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Manapparai 1♂♂ 1♀♀, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants such as *Butea monosperma*, *Pisum sativa*, *Vigna sinensis*, *Crotalaria* sp.

**Distribution:** Throughout India.

**12. *Spialia galba* (Fabricius, 1793)** (Common name: Indian Skipper)

*Hesperia galba* Fabricius, 1793, *Entomologia systematica* 3(1): 352. TL: Tranquebar, South India

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Manapparai, 2♂♂ 2♀♀, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plants:** *Glycine max*, *Alcea rosea*, *Sida rhombifolia* (Kunte 2000; Robinson et al., 2010), *Melochia corchorifolia* (Kalesh and Prakash 2007).

**Distribution:** India (common in almost all states of India, Tripura), Bangladesh, Myanmar, Pakistan, Sri Lanka (Lodh and Agarwala, 2015).

**13. *Oriens gola pseudolus*, Mabille, 1883**  
(Common name: Common Dartlet)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Manapparai, 2♂♂ 1♀♀, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants such as *Butea monosperma*, *Pisum sativa*, *Vigna sinensis*, *Crotalaria* sp.

**Distribution:** India: Throughout India including Andaman and Nicobars.

**14. *Parnara ganga*, Evans, 1937** (Common name: Continental Swift)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Mannachanallur, 2♂♂ 2♀♀, 06.x.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants such as *Butea monosperma*, *Pisum sativa*, *Vigna sinensis*, *Crotalaria* sp.

**Distribution:** Throughout India.

**15. *Telicota colon*, Fabricius, 1775.**(Common name: Common Palm Dart)

**Common Palm Dart *Telicota colon* (Fabricius, 1775)** (Syn. Pale Palm Dart)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli Pagalavadi, 2♀♀, 08.x.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Sugarcane *Saccharum officinarum*, bamboo species including *Bambusa striata* and *Ochlandra travancorica*

**Distribution:** India: *T. c. colon* (Fabricius, 1775): Gujarat to W. Bengal and southwards to Kerala; Delhi to Uttar Pradesh; Uttarakhand to Sikkim.

**Family:** Pieridae

**1. *Pieris canidia* (Linnaeus, 1768)** (Common name: Cabbage White)

**Indian Cabbage White *Pieris canidia* (Linnaeus, 1768)**

*Papilio canidia* Linnaeus, 1768, *Amoenitates Academicae* 7(150): 504. TL: South China

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Pagalavadi, 1♂♂ 1♀♀, 08.x.2017, C. Kanimozhi and V. Ramesh

**Distribution:** India, Afghanistan, Bangladesh, Bhutan, China, Myanmar, Nepal, Pakistan (Lodh and Agarwala, 2015).

**Host plant:** *Nasturtium spp.*, *Rorippa dubia*, *Sisymbrium sp.*, Cabbage and related species (Family Cruciferae). *Brassica oleracea* (Kunte 2000; Robinson et al., 2010).

**2. *Cepora nerissa* Fabricius, 1775** (Common name: Common Gull)

*Cepora nerissa* Fabricius, 1775. *Syst. Ent.*: 441.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Pagalavadi, 2♀♀, 08.x.2017, C. Kanimozhi and V. Ramesh

**Distribution:** Baluchistan and Chitral (Pakistan) eastwards to Assam, Indian Himalayas (Kumar, 2008).

**Host plant:** Brassicaceae (Kunte and Soman, 2017).

**3. *Ixias marianne* (Cramer, 1779)** (Common name: White Orange Tip)

*Ixias marianae* Cramer, 1779. *Exot. III.*: 41.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Manapparai, 2♂♂, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** North West Himalayas, Punjab, Bengal, Western and Southern India, Ceylon(Bingham, 1907).

**Host plants:** *Capparis deciduas*, *Capparis divaricata*, *Capparis grandis*, *Capparis sepiaria* (Kunte, 2000).

**4. *Ixias pyrene*, Linnaeus, 1764** (Common name: Yellow Orange- tip)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Manapparai, 1♀♀, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants such as *Butea monosperma*, *Pisum sativa*, *Vigna sinensis*, *Crotalaria* sp.

**Distribution:** India. Maharashtra Karnataka Assam

**5. *Delias eucharis*, (Drury, 1773)** (Common name: Common Jezebel)

*Papilio eucharis* Drury, 1773, 2: 17. TL: India

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thiruvellarai, 2♂♂ 2♀♀, 16.x.2017, C. Kanimozhi and V. Ramesh

**Distribution:** India, Bhutan, Nepal, North Myanmar, Pakistan, Sri Lanka (Lodh and Agarwala, 2015).

**Host plants:** *Butea monosperma*, *Dendrophthoe falcata*, *Dendrophthoe glabrescens* *Loranthus*

*cordifolius*, *Helicanthes elasticus*, *Loranthus longiflorus*, *Viscum album* (Kunte 2000; Robinson et al., 2010).

**6. *Prioneris sita*, C. Felder, 1865** (Common name: Painted Sawtooth)

**Painted Sawtooth *Prioneris sita* (C. & R. Felder, 1865)**

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thiruvellarai, 1♂♂ 1 ♀♀, 16.x.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Capparis tenera*, *C. zeylanica* (Family Capparaceae)

**Distribution:** India: Maharashtra to Kerala.

**7. *Hebomoia glaucippe* Linnaeus, 1758** (Common name: Great Orange Tip)

*Papilio glaucippe* Linnaeus, 1758, *Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis* (Ed. 10) 1: 469. TL: Canton, China

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thottiyam, 3♂♂ 2♀♀, 18.xi.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** India, Bangladesh, Bhutan, China, Myanmar, Nepal, Sri Lanka (Lodh and Agarwala, 2015).

**Host plants:** *Crateva religiosa*, *Capparis mooni*, *C. cantoniensis* (Savela, 2018)

**8. *Appias albina*, Boisduval, 1836**(Common name: Common Albatross)

**Common Albatross *Appias albina* (Boisduval, 1836)**

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thottiyam, 3♂♂ 2♀♀, 18.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Drypetes oblongifolia*, *Drypetes roxburghii* and *Drypetes venusta* (Family Euphorbiaceae).

**Distribution:** India: *A. a. darada* (C. & R. Felder, [1865]): Uttarakhand to N.E. India; Maharashtra to Kerala, Odisha.

**9. *Leptosia nina*, Fabricius, 1793.** (Common name: Psyche)

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Pagalavadi, 2♀♀, 08.x.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Capparis*, *Capparis baducca* (Wynter-Blyth, 1957, Kunte 2000, Robinson et al., 2006). *Capparis zeylanica* (Kunte 2006)

**Distribution:** Throughout India:

**10. *Colotis amata* Fabricius, 1775** (Common name: Small Salmon Arab) *Papilio amata* Fabricius, 1775; *Syst. Ent.*: 476

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Pagalavadi, 2♀♀, 08.x.2017, C. Kanimozhi and V. Ramesh

**Distribution:** India, Sri Lanka, South West Africa (Savela, 2018)

**Host plants:** *Azima tetracantha*, *Salvadora oleoides*, *Salvadora persica* (Wynter-Blyth, 1957; Robinson et al., 2010).

**11. *Colotis eucharis* Fabricius, 1775** (Common name: Plain orange tip)

*Papilio eucharis* Fabricius, 1775, *Syst. Ent.*: 472

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Pagalavadi, 1♂♂ 1♀♀, 08.x.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** India, Sri Lanka (Savela, 2018)

**Host plant:** *Cadaba fruticosa* (Wynter-Blyth 1957; Kunte 2000) (Capparaceae).

**12. *Colotis danae*, Fabricius, 1775** (Common name: Crimson Tip)

*Papilio danae* Fabricius, 1775, *Systema Entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*: 476. TL: Asia

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Keerambur, 2♀♀, 06.x.2017, C. Kanimozhi and V. Ramesh.

**Host plants:** *Cadaba fruticosa*, *Capparis sepiaria*, *Capparis divaricata*, *Maerua cylindrocarpa*, *Maerua oblongifolia* (Kunte 2000; Robinson et al., 2010).

**Distribution:** India, Pakistan (Lodh and Agarwala, 2015).

**13. *Calotis etrida* Boisduval, 1836** (Common name: Small orange tip)

*Anthocharis etrida* Boisduval, 1836; *Hist. nat. Ins., Spec. gen. Lepid.* 1: 576

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Keerambur, 2♀♀, 06.x.2017, C. Kanimozhi and V. Ramesh

**Host plant:** *Cadaba fruticosa* (Wynter-Blyth 1957; Kunte 2000), *Maerua oblongifolia* (Wynter-Blyth 1957; Kunte 2000) (Capparaceae).

**Distribution:** India, Sri Lanka (Savela, 2018)

**14. *Catopsilia pomona* Fabricius, 1775** (Common name: Common Emigrant) *Catopsilia pomona* Fabricius, 1775. *Syst. Ent.* : 479.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thuraiyur, 2♂♂ 1♀♀, 08.ix.2017, C. Kanimozhi and V. Ramesh

**Host plant:** *Cassia fistula* (Talbot, 1939).

**Distribution:** Ceylon, India, Burma, Andman Islands and Nicobar Islands; South China to Solomon Islands and Australia. (Bingham, 1907).

**15. *Catopsilia pyranthe* Linnaeus, 1758** (Common name: Mottled Emigrant) *Papilio pyranthe* Linnaeus, 1758. *Syst. Nat.* L.1: 469.

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Thuraiyur, 1♂♂ 2♀♀, 08.ix.2017, C. Kanimozhi and V. Ramesh.

**Host plants:** *Cassia auriculata*, *Cassia fistula*, *Cassia occidentalis*, *Cassia tora*, *Gnidia glauca*, *Sesbania bispinosa* (Kunte, 2000).

**Distribution:** India, Assam; Burma, Tenasserim; not ascending the Himalayas to above 7000 ft. China on the east and as far as Australia southwards (Bingham, 1907).

**16. *Eurema brigitta*, Stoll, 1780** (Common name: Small Grass Yellow)

*Papilio brigitta* Stoll, 1780; in *Cramer, Utl. Kapellen* 4 (26b-28): 82; TL: Guinea, West Africa

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Karatampatti, 2♀♀, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Chamaecrista kleinii* (Kunte 2000; Robinson et al., 2010).

**Distribution:** India (Saji and Bhakare, 2018).

**17. *Eurema andersoni*, Moore, 1886** (Common name: One Spot Grass Yellow)

**One-Spot Grass Yellow *Eurema andersoni* Moore, 1886**

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Karatampatti, 2♂♂, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants such as *Butea monosperma*, *Pisum sativa*, *Vigna sinensis*, *Crotalaria* sp.

**Distribution:** India: *E. a. shimai* Yata & Gaonkar, 1999: Karnataka; Kerala; Tamil Nadu.

**18. *Eurema hecabe*, Linnaeus, 1758** (Common name: Common Grass Yellow)

**Common Grass Yellow *Eurema hecabe* (Linnaeus, 1758)**

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Sathanur, 1♀♀, 16.x.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Abrus precatorius*, *Aeschynomene* spp. (*A. americana*, *A. indica*), *Calliandra haematocephala*, *Senna alata*, *Sesbania sesban*, *Smithia sensitiva*, *Caesalpinia* spp. (*C. pulcherrima*, *C. sappan*, *C. haematocephala*) (Family Fabaceae). *Cassia fistula*, Gulmohar *Delonix regia* (Family Caesalpinaceae), *Acacia* spp., *Pithecellobium dulce*, *Albizia* spp. (*A. procera*), (Family Mimosaceae).

**Distribution:** India: *E. h. hecabe* (Linnaeus, 1758): Throughout India, including the Andaman and Nicobar Islands.

**19. *Eurema blanda*, Boisduval, 1836** (Common name: Three-spot Grass Yellow)

**Three-spot Grass Yellow *Eurema blanda* (Boisduval, 1836)**

**Materials examined:** India: Tamil Nadu, Tiruchirappalli Sathanur, 1♂♂ 1♀♀, 16.x.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Cassia* spp., Gulmohar *Delonix regia*, *Moulluva spicata* (Family Caesalpinaceae), *Albizia* spp., *Pithecellobium dulce* (Family Mimosaceae).

**Distribution:** India: *E. b. davidsoni* Moore, 1906: Gujarat to Kerala.

**20. *Eurema nilgirensis*, C & R Felder**

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Sathanur, 2♂♂ 2♀♀, 16.x.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** Leguminous plants such as *Butea monosperma*, *Pisum sativa*, *Vigna sinensis*, *Crotalaria* sp.

**Distribution:** India

**21. *Belenois aurota* (Fabricius, 1793)** (Indian Pioneer)

*Papilio aurota* Fabricius, 1793; *Ent. Syst.* 3 (1): 197; TL: Tranquebar, S. India

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Kallipatti 2♂♂2♀♀, 20.vii.2017, C. Kanimozhi and V. Ramesh.

**Distribution:** India, Sri Lanka, Pakistan, Afghanistan, Baluchistan, Tropical Africa (dry zones), Arabia (Savela, 2018)

**Host plants:** *Cadaba frutcosa*, *Capparis baducca*, *Capparis decidua* (Kunte 2000; Robinson et al., 2010), *Capparis brevispina* (Kalesh and Prakash 2015).

**22. *Pareronia valeria*, Fabricius, 1793.** (Common name: Common Wanderer)

**Common Wanderer *Pareronia valeria* (Cramer, 1776)**

**Materials examined:** India: Tamil Nadu, Tiruchirappalli, Peramangalam, 1♂♂ 2♀♀, 16.xi.2017, C. Kanimozhi and V. Ramesh.

**Host plant:** *Capparis zeylanica*, *C. rheedii* (Family Capparaceae).

**Distribution:** India: *P. v. hippia* (Fabricius, 1787): Throughout India except Jammu & Kashmir, Punjab and Rajasthan.

Table 1. Details of recorded genera/species

| S. No. | Family             | Number of genera | Number of species |
|--------|--------------------|------------------|-------------------|
| I.     | Papilionidae       | 04               | 08                |
| II.    | Pieridae           | 13               | 22                |
| III.   | Nymphalidae        | 13               | 23                |
| IV.    | Lycaenidae         | 10               | 12                |
| V.     | Hesperiidae        | 14               | 15                |
|        | <b>05 families</b> | <b>54 Genera</b> | <b>80 Species</b> |

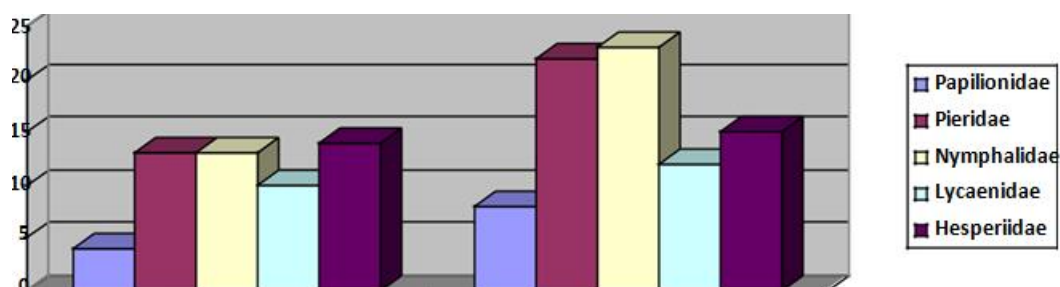


Fig 1. Chart showing the highest and lowest number of species of different families

Table 2. List of butterflies species recorded from various agro-ecosystems from Tiruchirappali district

| S. no     | Common name                                 | Zoological name                                   | Status |
|-----------|---------------------------------------------|---------------------------------------------------|--------|
| <b>I</b>  | <b>Family Papilionidae (Swallowtails)</b>   |                                                   |        |
| 1.        | Common Jay                                  | <i>Graphium doson</i> (C. & R. Felder, 1864)      | C      |
| 2.        | Tailed Jay                                  | <i>Graphium agamemnon</i> (Linnaeus, 1758)        | C      |
| 3.        | Common Rose                                 | <i>Pachliopta aristolochiae</i> (Fabricius, 1775) | C      |
| 4.        | Crimson Rose                                | <i>Pachliopta hector</i> (Linnaeus, 1758)         | C      |
| 5.        | Southern Birdwing                           | <i>Troides minos</i> (Cramer, 1779)               | C      |
| 6.        | Common Mormon                               | <i>Papilio polytes</i> (Linnaeus, 1758)           | C      |
| 7         | Lime butterfly                              | <i>Papilio demoleus</i> (Linnaeus, 1758)          | C      |
| 8         | Blue Mormon                                 | <i>Papilio polymnestor</i> (Cramer, 1775)         | UC     |
| <b>II</b> | <b>Family Pieridae (Whites and Yellows)</b> |                                                   |        |
| 9         | Indian cabbage white                        | <i>Pieris canidia</i> (Sparrman, 1768)            | UC     |
| 10        | Common gull                                 | <i>Cepora nerissa</i> Fabricius, 1775             | C      |
| 11        | White orange tip                            | <i>Ixias marianne</i> (Cramer, 1779)              | C      |
| 12        | Yellow orange tip                           | <i>Ixias pyrene</i> (Linnaeus 1764)               | UC     |
| 13        | Common jezebel                              | <i>Delias eucharis</i> (Drury, 1773)              | C      |
| 14        | Painted sawtooth                            | <i>Prioneris sita</i> (C. Felder, 1865)           | UC     |
| 15        | Great Orange Tip                            | <i>Hebomoia glaucippe</i> (Linnaeus, 1758)        | UC     |
| 16        | Common albatross                            | <i>Appias albina</i> (Boisduval, 1836)            | C      |
| 17        | Psyche                                      | <i>Leptosia nina</i> (Fabricius, 1793)            | C      |
| 18        | Small Salmon Arab                           | <i>Colotis amata</i> (Fabricius, 1775)            | C      |
| 19        | Plain Orange Tip                            | <i>Colotis eucharis</i> (Fabricius, 1775)         | C      |
| 20        | Crimson –Tip                                | <i>Colotis danae</i> (Fabricius, 1775)            | UC     |
| 21        | Common Wanderer                             | <i>Pareronia valeria</i> (Fabricius, 1793)        | C      |
| 22        | Common Emigrant                             | <i>Catopsilia pomona</i> (Fabricius, 1775)        | C      |
| 23        | Mottled Emigrant                            | <i>Catopsilia pyranthe</i> (Linnaeus, 1758)       | C      |
| 24        | Small Grass Yellow                          | <i>Eurema brigitta</i> (Cramer, 1780)             | C      |
| 25        | One -Spot Grass Yellow                      | <i>Eurema andersoni</i> (Moore, 1886)             | C      |
| 26        | Common Grass Yellow                         | <i>Eurema hecabe</i> (Linnaeus, 1758)             | C      |
| 27        | Three – Spot grass Yellow                   | <i>Eurema blanda</i> (Boisduval, 1836)            | C      |
| 28        | Nilgiri Grass Yellow                        | <i>Eurema nilgiriensis</i> (C & R Felder)         | UC     |
| 29        | Indian pioneer                              | <i>Belenois aurota</i> (Fabricius, 1793)          | C      |
| 30        | Small Orange Tip                            | <i>Colotis etrida</i> (Boisduval, 1836)           | C      |

| S. no      | Common name                                          | Zoological name                                    | Status |
|------------|------------------------------------------------------|----------------------------------------------------|--------|
| <b>III</b> | <b>Family Nymphalidae (Brush-footed Butterflies)</b> |                                                    |        |
| 31         | Danaid eggfly                                        | <i>Hypolimnas misippus</i> (Linnaeus, 1764)        | UC     |
| 32         | Great fly                                            | <i>Hypolimnas bolina</i> (Linnaeus, 1758)          | UC     |
| 33         | Lemon pansy                                          | <i>Junonia lemonias</i> (Linnaeus, 1758)           | C      |
| 34         | Peacock pansy                                        | <i>Junonia almana</i> (Linnaeus, 1758)             | C      |
| 35         | Yellow pansy                                         | <i>Junonia hierta</i> (Fabricius, 1798)            | C      |
| 36         | Grey Pansy                                           | <i>Junonia atlites</i> (Linnaeus, 1763)            | UC     |
| 37         | Chocolate Pansy                                      | <i>Junonia iphita</i> (Cramer, 1779)               | C      |
| 38         | Dark blue tiger                                      | <i>Tirumala septentrionis</i> (Butler, 1874)       | UC     |
| 39         | Blue tiger                                           | <i>Tirumala limniace</i> (Cramer, 1775)            | C      |
| 40         | Plain tiger                                          | <i>Danaus chrysippus</i> (Linnaeus, 1758)          | C      |
| 41         | Striped tiger                                        | <i>Danaus genutia</i> (Cramer, 1779)               | C      |
| 42         | Common crow                                          | <i>Euploea core</i> (Cramer, 1780)                 | C      |
| 43         | Tamil Bushbrown                                      | <i>Mycalesis subdita</i> (Moore, 1890)             | C      |
| 44         | Common bush brown                                    | <i>Mycalesis perseus typhlus</i> (Fabricius, 1793) | C      |
| 45         | Dark Branded Bushbrown                               | <i>Mycalesis mineus</i> (Linnaeus, 1758)           | C      |
| 46         | Common evening brown                                 | <i>Melanitis leda</i> (Linnaeus, 1758)             | C      |
| 47         | Leopard                                              | <i>Phalanta phalantha</i> (Drury, 1773)            | C      |
| 48         | Tawny Coster                                         | <i>Acraea terpsicore</i> (Linnaeus, 1758)          | C      |
| 49         | Common Castor                                        | <i>Ariadne merione</i> (Cramer, 1777)              | C      |
| 50         | Angled Castor                                        | <i>Ariadne ariadne</i> (Linnaeus, 1763)            | UC     |
| 51         | Black Rajah                                          | <i>Charaxes solon</i> (Fabricius, 1793)            | UC     |
| 52         | Rustic                                               | <i>Cupa erymanthis</i> (Drury, 1773)               | UC     |
| 53         | Common Sailer                                        | <i>Neptis hylas</i> (Linnaeus, 1758)               | C      |
| <b>IV</b>  | <b>Family Lycaenidae (Blues)</b>                     |                                                    |        |
| 54         | Pea blue                                             | <i>Lampides boeticus</i> (Linnaeus, 1767)          | C      |
| 55         | Small cupid                                          | <i>Chilades parrhasius</i> (Fabricius 1793)        | C      |
| 56         | Lime blue                                            | <i>Chilades lajus</i> (Cramer 1782)                | C      |
| 57         | Plains cupid                                         | <i>Chilades pandava</i> (Horsfield, 1829)          | C      |
| 58         | Lesser grass blue                                    | <i>Zizina otis</i> (Fabricius, 1787)               | UC     |
| 59         | Gram blue                                            | <i>Euchrysops cnejus</i> (Fabricius, 1798)         | C      |
| 60         | Forget me not                                        | <i>Catochrysops Strabo</i> (Fabricius, 1793)       | C      |
| 61         | Orange Crowned Cupid                                 | <i>Everes lacturnus</i> (Godart, 1824)             | C      |
| 62         | Indian Sunbeam                                       | <i>Curetis thetis</i> (Drury, 1773)                | UC     |
| 63         | Common Pierrot                                       | <i>Castalius rosimon</i> (Fabricius, 1775)         | C      |
| 64         | Pointed Ciliate Blue                                 | <i>Anthene lycaenina</i> (Felder, 1868)            | C      |
| 65         | Common Cerulean                                      | <i>Jamides celeno</i> (Cramer, 1775)               | C      |
| <b>V</b>   | <b>Family: Hesperidae (Skippers)</b>                 |                                                    |        |
| 66         | Common Banded Awl                                    | <i>Hasora chromus</i> (Cramer, 1782)               | C      |
| 67         | Brown Awl                                            | <i>Badamia exclamationis</i> (Fabricius, 1775)     | C      |
| 68         | African Marbled Skipper                              | <i>Gomaliaelma</i> (Trimen, 1862)                  | C      |
| 69         | Bevans Swift                                         | <i>Pseudoborbo bevani</i> (Moore, 1878)            | C      |
| 70         | Oriental Swift                                       | <i>Parnara bada</i> (Moore, 1878)                  | C      |
| 71         | Grass demon                                          | <i>Udaspes folus</i> (Cramer, 1775)                | C      |
| 72         | Indian palm bob                                      | <i>Suastus gremius</i> (Fabricius, 1798)           | C      |
| 73         | Paint brush swift                                    | <i>Baoris farri</i> (Moore, 1878)                  | C      |
| 74         | Rice swift                                           | <i>Borbo cinnara</i> (Wallace, 1866)               | C      |
| 75         | Small branded swift                                  | <i>Pelopidas mathias</i> (Fabricius, 1798)         | C      |
| 76         | Dark palm dart                                       | <i>Telicota ancilla</i> (Herrich-Schäffer, 1869)   | C      |
| 77         | Indian Skippers                                      | <i>Spialia galba</i> (Fabricius, 1793)             | C      |
| 78         | Common dartlet                                       | <i>Oriens gola pseudolus</i> (Mabille, 1883)       | C      |
| 79         | Continental Swift                                    | <i>Parnara ganga</i> (Evans, 1937)                 | C      |
| 80         | Pale Palm Dart                                       | <i>Telicota colon</i> (Fabricius, 1775)            | C      |

Photographs of the adults are provided

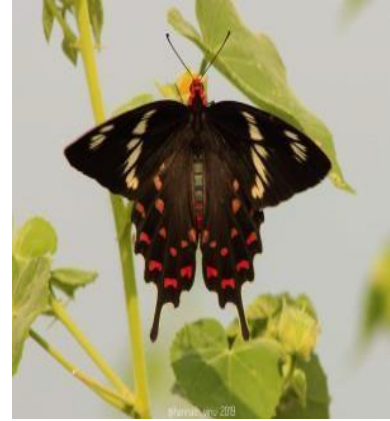
Family: Papilionidae



*Graphium doson*



*Graphium agamemnon*



*Pachliopta hector*



*Pachliopta aristolochiae*



*Papilio polytes*



*Papilio polytes*



*Papilio polymnester*

Plate 1.

**Family: Nymphalidae**



*Hypolimnas misippus*



*Hypolimnas bolina*



*Junonia lemonias*



*Junonia almanac*



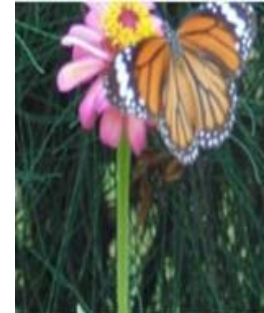
*Tirumala septentrionis*



*Tirumala limniace*



*Danaus chrysippus*



*Danaus genutia*



*Euploea core*



*Mycalesis mineus*



*Melanitis idea*



*Ariadne ariadne*



*Mycalesis subdita*



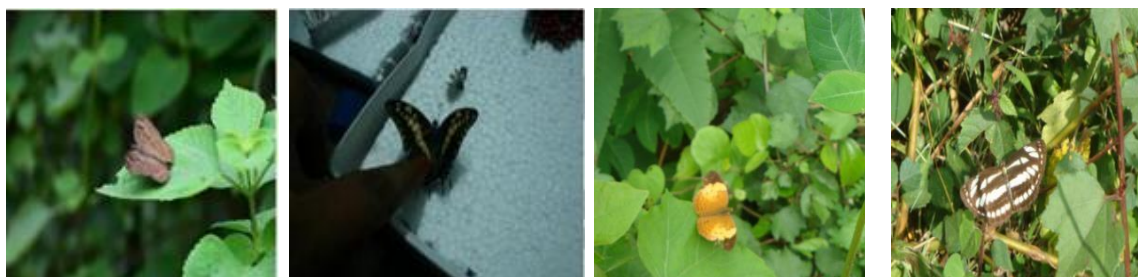
*Phalanta phalanta*



*Acraea terpsicore*



*Ariadne merione*



*Junonia iphita*

*Charaxes solon*

*Cupa erymanthis*

*Neptis hylas*

Plate 2.

#### 4. DISCUSSION AND CONCLUSION

Butterflies are one of the conspicuous insects; these are particularly useful in monitoring the changes in both ecological and economic terms, and play a vital role in pollinators [13]. Our sampling localities present transition zones from manmade ecosystems i.e., agriculture ecosystems, gardens and grassland. This may minimize cases of villages and towns, situated away from the agricultural ecosystems located at more remote places. In the present study, butterflies from five families of Lepidoptera were recorded; among them, family Nymphalidae outnumbered with the maximum species throughout the study period; this because of their ecological

adaptation, speciation and high dispersal ability [14]. Family Nymphalidae is the largest family representing nearly one-third of the known butterflies of the world. Family Nymphalidae was followed by Pieridae, Papilionidae, and Hesperidia in the total number of species observed. Similar findings were reported by Mathew and Rahamathulla [15] from the Western Ghats. We also observed maximum species diversity and abundance in the months of January to June, and October-November and there was a gradual decrease during the early summer from the month of March and it reached maximum in the May. Butterflies in all the habitats have flight periods, and their abundance strongly correlates with their different flight periods [16,17].

#### Family: Lycaenidae



*Lampides boetieus*



*Chilades parrhasius*



*Chilades pandava*



*Zizeeria otis*



*Catochrysops strabo*



*Taraka Hamada*



*Jamides celeno*

**Plate 3.**

The relative abundance of butterflies at closely related to the wide range of temperature to other spaces pretty similar to the Lepidoptera families among all the open grassy areas and the fields. Butterflies are more heterogeneity and feeding resources and consequently to an increase in their abundance and

species richness. A key issue to is the enhancement of vegetation heterogeneity, so that policy framework and management practices that promote the diversity of farming systems and landscape heterogeneity have been seen as the key to restore and sustain a biodiversity in livestock farming systems [18].

**Family: Pieridae**



*Cepora nerissa*



*Ixias Marianne*



*Delias eucharis*



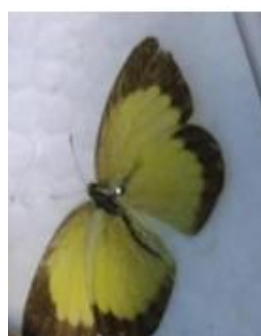
*Catopsilia pyranthe*



*Colotis amata*



*Eurema hecabe*



*Eurema brigittia*



*Hebomoia glaucippe*



*Belenois aurota*



*Colotis danae*



*Colotis etrida*

Plate 4.

**Family: Hesperiiidae**



*Telicota ancilla*



*Oriens gola pseudolus*



*Borbo cinnara*



*Spialia galba*



*Parnara ganga*



*Telicota colon*

Plate 5.

Butterfly families site selection could be by the availability of some factors such as food, access to solar light to regulate their body temperature also open space to away from predators or some others to use the breeze to flight to other places [19]. Butterflies can indicate, anticipate and monitor chemicals and physical changes in the environment, especially in the open grassy areas, because butterflies are to different

factors especially temperature they will restrict their biological activities.

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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