

A checklist of butterflies of Sálím Ali Centre for Ornithology and Natural History (SACON) campus, Anaikatty, Western Ghats, India

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ABSTRACT: An updated checklist of butterfly species recorded from the Sálím Ali Centre for Ornithology and Natural History (SACON) campus, constitute a total of 178 species of butterflies, including previous records of 101 species. The butterfly species represent Papilionidae (17), Pieridae (22), Nymphalidae (55), Lycaenidae (54), Riodinidae (1) and Hesperidae (29). Seventy-seven species are new additions. Among the 178 species, 56 (31.46%) were found to be very common, 74 (41.57%) were moderately common, 42 (23.60%) were rare and 6 (3.37%) as very rare in sightings. Ninety plant species belonging to 33 families as larval host plants of 160 butterfly species were also recorded in the present study. Host plants of 18 species of butterflies were not available in the study area.

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KEY WORDS: Lepidoptera-Rhopalocera, species, updated, new additions, larval host plants, abundance

INTRODUCTION

Butterflies are one of the major taxonomic groups belonging to the insect order Lepidoptera, and one of the most important components of biodiversity. They play vital ecological functions in pollination, forest food chain as well as urban ecosystems (Mac and Fleishman, 2004). Globally, around 19,238 species of butterflies are described under seven

families and account for about 12 per cent of the known Lepidopteran species (Heppner, 1998). In India, there are numerous studies on the diversity and distribution of butterflies, which account for one fifth of the global butterfly species (Wynter-Blyth, 1957). About 1,501 species of butterflies have been reported from India (Kunte, 2000), out of which 335 species have been reported in the

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Western Ghats (Gaonkar, 1996), and 327 species in Tamil Nadu (Pavendhan *et al.*, 2022).

The campus of Sálím Ali Centre for Ornithology and Natural History (SACON), in Anaikatty hills, Coimbatore (11°05'30.9"N; 76°47'36.2"E), is located towards the north of Palghat gap on the eastern slopes of Western Ghats at 600 m ASL. SACON campus was established in early 2000. The area surrounded by degraded forest land with rocky slopes, where planting of native and ornamental species in and around the campus in later years enhanced the vegetation and attracted several pollinators as well as numerous wildlife. This region experiences annual temperature of minimum 20°C and maximum 41°C, and the area receive both southwest and northeast monsoon, with annual rainfall up to 700 mm. SACON campus is surrounded by reserve forest covering 180 sq.km with southern tropical mixed deciduous and southern tropical dry mixed deciduous forest (Champion and Seth, 1968), and grassland patches at the hills of nearby Dumanur village. The campus is rich in floristic diversity with 402 species of flowering plants belonging to 84 families (Balasubramanian *et al.*, 2015). A total of 93 species of butterflies were recorded in the study area (Eswaran and Pramod, 2005; Eswaran, 2006) and in 2014 recorded 91 butterfly species along with 13 new additions compared to the previous studies in the SACON campus (Kumar and Arun, 2014) making the butterfly diversity of the campus to 106 species. There has been no long-term monitoring of insect populations, their diversity and distribution in India even for species like butterflies that are given more importance in citizen science (Sondhi and Kunte, 2020). Since it has been almost a decade after the last checklist, more species have been reported from the region and there is a need to update the information on the butterfly diversity of the area. In this context, an updated checklist with new additions to the butterflies in the area becomes significant and will help in collating and providing a database of the diversity of butterflies and larval host plants for the region.

MATERIALS AND METHODS

The field data on butterflies recorded by authors

from the Sálím Ali Centre were compiled and updated with new additions (Fig. 1), Regular fortnight surveys were carried out from 2016 to 2022 on fixed routes with different zones inside campus and adjoining areas using standard methods (Pollard, 1977). The butterflies were observed and recorded directly in the field. Sampling was done between 09 00-11 00 h and 15 00-17 00 h, and more than 100 aggregate visits were made for collection of butterfly data. The species were identified using literature and standard keys (Yates, 1935; Wynter-Blyth, 1957), field guides (Kehimkar, 2016; Bhakare and Ogale, 2018; Kunte *et al.*, 2024). Based on their abundance and sighting frequency in SACON campus, the species were classified into four categories; Very Common (VC), Common (C), Rare (R) and Very Rare (VR) (Tiple and Khurad, 2009). Doubtful species were excluded from the list. The photographs of butterflies were taken using Canon 70D with Tamron 180mm macro lens and Nikon D3500 with 70-300mm lens. In addition, butterfly larval host plants, migration, and congregation were also recorded during the study period.

RESULTS AND DISCUSSION

A total of 178 butterfly species belonging to six families were recorded, and among these, 77 species are new additions to SACON campus. The 178 species reported from the study comprise family Papilionidae with 17 species, Pieridae with 22, Nymphalidae with 55, Lycaenidae with 54, Riodinidae with one, and Hesperidae with 29 (Table 1). Based on the frequency of occurrence, 56 (31.46%) species were VC, 74 (41.57%) were C, 42 (23.60%) as R and 6 (3.37%) VR in the SACON campus. *Charaxes psaphon*, *Phaedyma columella*, *Zinaspia todara*, *Horaga onyx*, *Bibasis sena*, and *Burara jaina* were found to be very rare in the campus. In addition to the occurrence of rare endemic species from Western Ghats parts of Kerala and Tamil Nadu, some endemic records and range extensions have also occurred in the study area. Eight out of the 178 recorded species in SACON campus are endemic to Western Ghats, such as *Troides minos*, *Pachliopta pandiyana*, *Papilio dravidarum*,

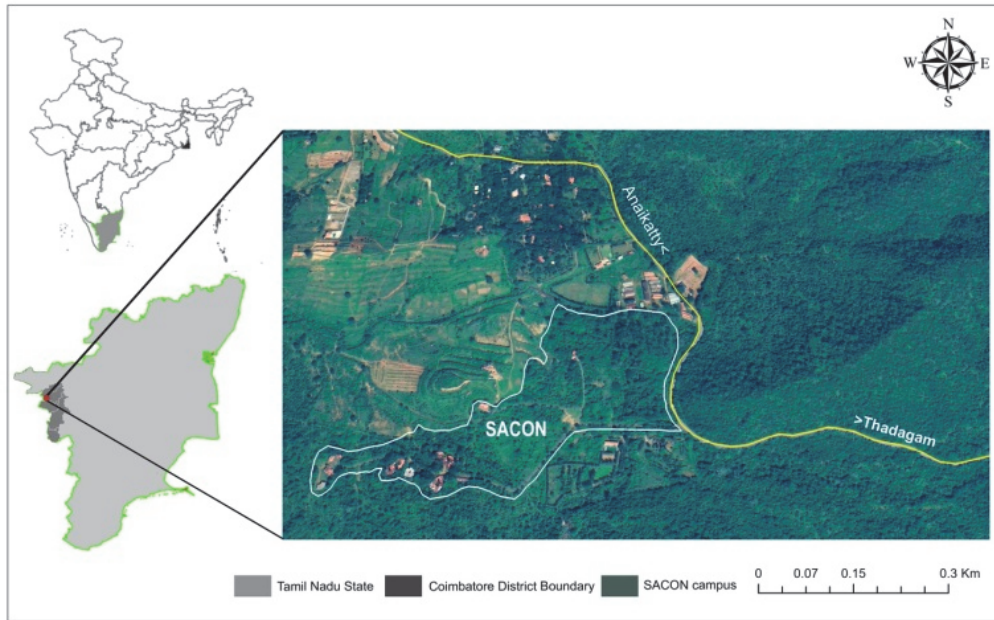


Fig. 1 Location of the campus - Sálím Ali Centre for Ornithology and Natural History (SACON), Coimbatore District, Tamil Nadu

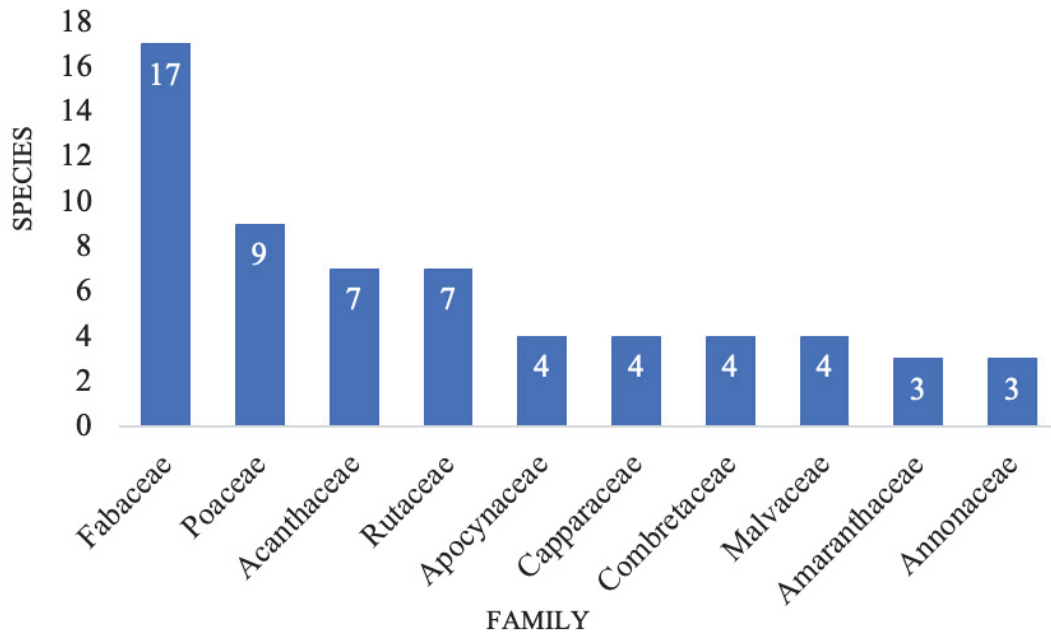


Fig. 2 Dominant family of butterfly larval host plants in SACON campus



Fig. 3 Some selected butterflies of SACON; A. Malabar Banded Peacock, B. Malabar Raven (Papilionidae); C. Pioneer, D. Chocolate Albatross (Pieridae); E. Chestnut Streaked Sailer, F. Commander, G. Bamboo Tree Brown, H. Dark Evening Brown (Nymphalidae). (Photographs of A, B © P.P. Ashiq, and other images, © S. Jeevith)

Papilio buddha, *Pareronia ceylanica*, *Parantica nilgiriensis*, *Ancema sudica* and *Hypolycaena nilgirica*. The records of new additions in the recent survey are as follows; *Papilio paris* is the new addition among the 17 species in family Papilionidae. In Pieridae, 7 out of 22 species were new additions namely, *Eurema brigitta*, *Cepora nadina*, *Colotis fausta*, *Colotis danae*, *Colotis etrida*, and *Colotis aurora*, and *Pareronia ceylanica*.

Family Nymphalidae is represented with 55 species, with 20 new additions; *Melanitis phedima*, *Melanitis zitenius*, *Lethe rohria*, *Lethe drypetis*, *Mycalesis mineus*, *Mycalesis subdita*, *Ypthima baldus*, *Ypthima asterope*, *Ariadne ariadne*, *Byblia ilithyia*, *Charaxes agrarius*, *Moduza procris*, *Neptis jumbah*, *Junonia atlites*, *Pantoporia sandaka*, *Euthalia aconthea*, *Euploea klugii*, *Tirumala limniace*, *Tirumala septentrionis*, and *Parantica aglea*. Thirty-one new species were added to the Family Lycaenidae making the total species count as 54 species. The additional species recorded are, *Spalgis epius*, *Anthene lycaenina*, *Acytolepis puspa*, *Caleta decidia*, *Tarucus ananda*, *Everes lacturnus*, *Chilades parrhasius*, *Freyeria putli*, *Prosotas nora*, *Prosotas dubiosa*, *Petrelaea dana*, *Pseudozizeeria maha*, *Zizula hylax*, *Azanus ubaldus*, *Azanus jesous*, *Surendra quercetorum*, *Zinaspia todara*, *Spindasis lohita*, *Spindasis schistacea*, *Spindasis ictis*, *Horaga onyx*, *Ancema sudica*, *Hypolycaena nilgirica*, *Virachola isocrates*, *Virachola perse*, *Deudorix epijarbas*, *Catochrysops strabo*, *Amblypodia anita*, *Zesius chrysomallus* and *Curetis acuta*.

In Western Ghats, only two species belonging to family Riodinidae are reported (Sadasivan *et al.*, 2023; Kunte *et al.*, 2024), and among them only *Abisara bifasciata* was recorded in the study area. Family Hesperidae was represented by 29 species in total from the study area and 17 species were newly recorded in the campus and they are *Bibasis sena*, *Burara jaina*, *Hasora vitta*, *Sarangesa dasahara*, *Coladenia indrani*, *Tagiades japetus*, *Celaenorrhinus ambareesa*, *Ampittia dioscorides*, *Gangara thyrsis*, *Matapa aria*, *Taractrocera maevius*, *Cephrenes acalle*, *Oriens gola*, *Oriens goloides*, *Halpe hindu*, and *Borbo*

cinnara. Eswaran and Pramod (2005) and Eswaran (2006) reported 93 species of butterflies in and around the SACON campus, followed by 106 species with 13 new additions recorded by Kumar and Arun (2014), and 81 species by Monica Sri (2019). Sony and Arun (2015) studied butterfly road kills along a stretch of road in Anaikatty hills and reported 12 species, out of the 135 individuals of butterfly road kills. In 1995, 104 butterfly species were reported from Coimbatore district (Gunathilagaraj *et al.*, 1997) and 75 species from Siruvani forests (Arun, 2003). Recently, 170 butterfly species were reported in a three days annual butterfly survey at Coimbatore region conducted by the Tamil Nadu Forest Department with TNBS, CNS, WWF (Anonymous, 2022).

The geographical area of campus is close to Silent Valley National Park with an aerial distance of 40 km towards the north of Palghat gap and with 80 kms from Nilgiris. All of these areas are major hotspots, which attract a huge diversity of butterfly species in different seasons including their local migration period. The earlier records of butterfly species in Nilgiris were 260 species recorded by Hampson (1888), followed by 282 species reported by Yates (1935), 290 species by Wynter-Blyth (1957) and later Larsen (1987a, b, c, 1988) reported 300 species from the district. Mathew and Rahamathulla (1993) reported 100 species from Silent Valley National Park and recently, Sadasivan *et al.* (2023) reported 290 species, which includes high altitude grassland species and Western Ghats endemism after two decades. In this survey, larval host plants present in the SACON campus were also identified and included in addition to butterfly checklist (Table 1). The plant species were identified by utilizing vegetative and reproductive characters along with utilizing regional floras and field guides (Balasubramanian *et al.*, 2015; Nitin *et al.*, 2018), and the database POWO (<https://powo.science.kew.org>). A total of 90 plant species belonging to 33 families were recorded as larval host plants for the 160 species, whereas host plants were either not available or unknown in the campus surroundings for the remaining 18 species. Among plants, Fabaceae dominated with 17 species followed by Poaceae with nine, and Acanthaceae and Rutaceae with seven each (Fig. 2).

Table 1. Checklist of Butterflies in SACON campus, Anaikatty, Western Ghats

No	Common Name - Scientific Name	Occ	Rec	Larvae Host plant in the campus
Family: Papilionidae				
1	Southern Birdwing - <i>Troides minos</i> (Cramer, 1779)*	C	A	<i>Aristolochia indica</i> L (Aristolochiaceae)
2	Common Rose - <i>Pachliopta aristolochiae</i> (Fab, 1775)	VC	A	<i>Aristolochia indica</i> L (Aristolochiaceae)
3	Crimson Rose - <i>Pachliopta hector</i> (Linnaeus, 1758)	VC	A	<i>Aristolochia indica</i> L (Aristolochiaceae)
4	Malabar Rose - <i>Pachliopta pandiyana</i> (Moore, 1881)*	R	A	Not available
5	Tailed Jay - <i>Graphium agamemnon</i> (Linn, 1758)	C	A	<i>Annona squamosa</i> L.; <i>A. muricata</i> L. (Annonaceae)
6	Common Jay - <i>Graphium doson</i> (C. & R. Felder, 1864)	C	A	<i>Annona squamosa</i> L.; <i>A. muricata</i> L. (Annonaceae)
7	Spot Swordtail - <i>Graphium nomius</i> (Esper, 1799)	C	A	<i>Monoon longifolium</i> (Sonn.) B.Xue & R.M.K.Saunders (Annonaceae)
8	Common Bluebottle - <i>Graphium sarpedon</i> (Linnaeus, 1758)	VC	A	<i>Magnolia champaca</i> (L.) Baill. ex Pierre (Magnoliaceae)
9	Lime Swallowtail - <i>Papilio demoleus</i> (Linnaeus, 1758)	VC	A	<i>Glycosmis pentaphylla</i> (Retz.) DC., <i>Zanthoxylum asiaticum</i> (L.) Appelhans, Groppo & J.Wen (Rutaceae)
10	Malabar Raven - <i>Papilio dravidarum</i> Wood-Mason, 1880*	R	EP, RS	<i>Glycosmis pentaphylla</i> (Retz.) DC., <i>Citrus maxima</i>
11	Red Helen - <i>Papilio helenus</i> Linnaeus, 1758	C	A	<i>Glycosmis pentaphylla</i> (Retz.) DC.; <i>Zanthoxylum asiaticum</i> (L.) Appelhans, Groppo & J.Wen (Rutaceae)
12	Common Mormon - <i>Papilio polytes</i> (Linnaeus, 1758)	VC	A	<i>Bergera koenigii</i> L.; <i>Murraya paniculata</i> (L.) Jack (Rutaceae)
13	Blue Mormon - <i>Papilio polymnestor</i> (Cramer, 1775)	VC	A	<i>Atalantia monophylla</i> DC.; <i>Bergera koenigii</i> L. (Rutaceae)
14	Common Mime - <i>Papilio clytia</i> Linnaeus, 1758	C	A	Not available
15	Common Banded Peacock - <i>Papilio crino</i> (Fabricius, 1792)	VC	A	<i>Chloroxylon swietenia</i> DC. (Rutaceae)
16	Malabar Banded Peacock - <i>Papilio buddha</i> (Westwood, 1872)*	R	EP, RS	Not available
17	Paris Peacock - <i>Papilio paris</i> Linnaeus, 1758	R	RS	<i>Zanthoxylum asiaticum</i> (L.) Appelhans, Groppo & J.Wen (Rutaceae)
Family: Pieridae				
18	Common Emigrant - <i>Catopsilia pomona</i> (Fabricius, 1775)	VC	A	<i>Cassia fistula</i> L.; <i>Senna tora</i> (L.) Roxb. (Fabaceae)

19	Mottled Emigrant - <i>Catopsilia pyranthe</i> (Latreille, 1758)	VC	A	<i>Cassia fistula</i> L.; <i>Senna tora</i> (L.) Roxb. (Fabaceae)
20	Common Grass Yellow - <i>Eurema hecabe</i> (Linnaeus, 1758)	VC	A	<i>Cassia fistula</i> L.; <i>Moullava spicata</i> (Dalzell ex Wight) Nicolson (Fabaceae)
21	Three-spot Grass Yellow - <i>Eurema blanda</i> (Boisduval, 1836)	VC	A	<i>Cassia fistula</i> L.; <i>Moullava spicata</i> (Dalzell ex Wight) Nicolson (Fabaceae)
22	Small Grass Yellow - <i>Eurema brigitta</i> (Stoll, 1780)	C	RS	Not available
23	Common Jezebel - <i>Delias eucharis</i> (Drury, 1773)	VC	A	<i>Butea monosperma</i> (Lam.) Kuntze (Fabaceae); <i>Loranthus</i> sp. (Loranthaceae)
24	Common Gull - <i>Cepora nerissa</i> (Fabricius, 1775)	VC	A	<i>Capparis grandiflora</i> Wall. ex Hook.f. & Thomson; <i>C. zeylanica</i> L. (Capparaceae)
25	Lesser Gull - <i>Cepora nadina</i> (Lucas, 1852)	R	RS	<i>Capparis divaricata</i> Lam. (Capparaceae)
26	Pioneer - <i>Belenois aurota</i> (Fabricius, 1793)	C	A	<i>Capparis divaricata</i> Lam. (Capparaceae)
27	Common Albatross - <i>Appias albina</i> (Boisduval, 1836)	C	A	Not available
28	Chocolate Albatross - <i>Appias lyncida</i> (Cramer, 1777)	R	EP,RS	<i>Bombax ceiba</i> L. (Malvaceae); <i>Capparis zeylanica</i> L. (Capparaceae)
29	Psyche - <i>Leptosia nina</i> (Fabricius, 1793)	VC	A	<i>Cleome viscosa</i> L. (Cleomaceae)
30	Large Salmon Arab - <i>Colotis fausta</i> (Olivier, 1804)	C	RS	<i>Capparis grandiflora</i> Wall. ex Hook.f. & Thomson (Capparaceae)
31	Small Salmon Arab - <i>Colotis amata</i> (Fabricius, 1775)	C	A	<i>Zanthoxylum asiaticum</i> (L.) Appelhans, Groppo & J.Wen (Rutaceae)
32	Crimson-tip - <i>Colotis danae</i> (Fabricius, 1775)	C	RS	<i>Capparis divaricata</i> Lam. (Capparaceae)
33	Small Orange-tip - <i>Colotis etrida</i> (Boisduval, 1836)	C	RS	<i>Capparis grandiflora</i> Wall. ex Hook.f. & Thomson; <i>C. zeylanica</i> L. (Capparaceae)
34	Plain Orange-tip - <i>Colotis aurora</i> (Cramer, 1780)	C	RS	<i>Cadaba fruticosa</i> (L.) Druce (Capparaceae)
35	White Orange-tip - <i>Ixias marianne</i> (Cramer, 1779)	VC	A	<i>Capparis grandiflora</i> Wall. ex Hook.f. & Thomson; <i>C. zeylanica</i> L. (Capparaceae)
36	Yellow Orange-tip - <i>Ixias pyrene</i> (Linnaeus, 1764)	VC	A	<i>Capparis grandiflora</i> Wall. ex Hook.f. & Thomson; <i>C. zeylanica</i> L. (Capparaceae)
37	Great Orange-tip - <i>Hebomoia glaucippe</i> (Linnaeus, 1758)	VC	A	<i>Capparis grandiflora</i> Wall. ex Hook.f. & Thomson.; <i>C. zeylanica</i> L. (Capparaceae)
38	Common Wanderer - <i>Pareronia hippia</i> (Fabricius, 1787)	VC	A	<i>Capparis divaricata</i> Lam.; <i>C. zeylanica</i> L. (Capparaceae)
39	Dark Wanderer - <i>Pareronia ceylanica</i> (C. & R. Felder, 1865)*	C	RS	<i>Capparis divaricata</i> Lam.; <i>C. zeylanica</i> L. (Capparaceae)

Family: Nymphalidae				
40	Common Evening Brown - <i>Melanitis leda</i> (Linnaeus, 1758)	VC	A	<i>Bambusa bambos</i> (L.) Voss; (Poaceae)
41	Dark Evening Brown - <i>Melanitis phedima</i> (Cramer, 1780)	C	RS	<i>Bambusa bambos</i> (L.) Voss; <i>Bambusa vulgaris</i> Schrad. ex J.C.Wendl. (Poaceae)
42	Great Evening Brown - <i>Melanitis zitenius</i> (Herbst, 1796)	R	RS	<i>Bambusa bambos</i> (L.) Voss; <i>Bambusa vulgaris</i> Schrad. ex J.C.Wendl. (Poaceae)
43	Common Treebrown - <i>Lethe rohria</i> (Fabricius, 1787)	C	RS	<i>Bambusa bambos</i> (L.) Voss; <i>Bambusa vulgaris</i> Schrad. ex J.C.Wendl. (Poaceae)
44	Tamil Treebrown - <i>Lethe drypetis</i> (Hewitson, 1863)	R	RS	<i>Bambusa bambos</i> (L.) Voss (Poaceae)
45	Bamboo Treebrown - <i>Lethe europa</i> (Fabricius, 1775)	C	A	<i>Bambusa bambos</i> (L.) Voss; <i>Bambusa vulgaris</i> Schrad. ex J.C.Wendl. (Poaceae)
46	Gladeye Bushbrown - <i>Mycalesis junonia</i> Butler, 1868	C	A	Not available
47	Common Bushbrown - <i>Mycalesis perseus</i> (Fabricius, 1775)	VC	A	<i>Echinochloa colonum</i> (L.) Link (Poaceae)
48	Dark-branded Bushbrown - <i>Mycalesis mineus</i> (Linnaeus, 1758)	R	RS	<i>Echinochloa colonum</i> (L.) Link (Poaceae)
49	Tamil Bushbrown - <i>Mycalesis subdita</i> (Moore, 1890)	R	RS	<i>Echinochloa colonum</i> (L.) Link (Poaceae)
50	Common Five-ring - <i>Ypthima baldus</i> (Fabricius, 1775)	VC	RS	<i>Imperata cylindrica</i> (L.) Raeusch.; <i>Setaria barbata</i> (Lam.) Kunth (Poaceae)
51	Common Four-ring - <i>Ypthima huebneri</i> Kirby, 1871	VC	A	<i>Axonopus compressus</i> (Sw.) P.Beauv. (Poaceae)
52	Common Three-ring - <i>Ypthima asterope</i> (Klug, 1832)	C	RS	<i>Setaria barbata</i> (Lam.) Kunth (Poaceae)
53	White Four-ring - <i>Ypthima ceylonica</i> Hewitson, (1865)	VC	A	<i>Cynodon dactylon</i> (L.) Pers. (Poaceae)
54	Common Castor - <i>Ariadne merione</i> (Cramer, 1777)	VC	A	<i>Ricinus communis</i> L. (Euphorbiaceae)
55	Angled Castor - <i>Ariadne ariadne</i> Linnaeus, 1763	VC	RS	<i>Ricinus communis</i> L. (Euphorbiaceae)
56	Joker - <i>Byblia ilithyia</i> (Drury, 1773)	R	RS	<i>Tragia involucrata</i> L. (Euphorbiaceae)
57	Common Nawab - <i>Charaxes bharata</i> C. & R. Felder, (1867)	C	A	<i>Vachellia farnesiana</i> (L.) Wight & Arn (Fabaceae)
58	Anomalous Nawab - <i>Charaxes agrarius</i> Swinhoe, (1887)	R	RS	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. (Fabaceae)
59	Black Rajah - <i>Charaxes solon</i> (Fabricius, 1793)	R	EP, RS	<i>Tamarindus indica</i> L. (Fabaceae)

60	Tawny Rajah – <i>Charaxes psaphon</i> Westwood, 1847	VR	KA, RS	<i>Tamarindus indica</i> L. (Fabaceae)
61	Common Map - <i>Cyrestis thyodamas</i> Doyère, (1840)	R	EP, RS	<i>Ficus benghalensis</i> L.; <i>Ficus religiosa</i> L. (Moraceae)
62	Common Leopard - <i>Phalanta phalantha</i> (Drury, 1773)	VC	A	Not available
63	Baronet - <i>Symphaedra nais</i> (Forster, 1771)	R	EP, RS	<i>Mangifera indica</i> L. (Anacardiaceae)
64	Lobed Beak - <i>Libythea laius</i> Trimen, 1879	C	A	Not available
65	Tamil Yeoman - <i>Cirrochroa thais</i> (Fabricius, 1787)	R	A	Not available
66	Commander - <i>Moduza procris</i> (Cramer, 1777)	R	RS	<i>Neolamarckia cadamba</i> (Roxb.) Bosser (Rubiaceae)
67	Common Sailer - <i>Neptis hylas</i> (Linnaeus, 1758)	VC	A	<i>Dalbergia latifolia</i> Roxb. (Fabaceae)
68	Chestnut-streaked Sailer - <i>Neptis jumbah</i> Moore, (1858)	C	RS	<i>Dalbergia latifolia</i> Roxb. (Fabaceae)
69	Short-banded Sailer - <i>Phaedyma columella</i> (Cramer, 1780)	VR	KA, RS	<i>Dalbergia latifolia</i> Roxb. (Fabaceae)
70	Great Eggfly - <i>Hypolimnas bolina</i> (Linnaeus, 1758)	VC	A	<i>Sida rhombifolia</i> L. (Malvaceae)
71	Danaid eggfly - <i>Hypolimnas misippus</i> (Linnaeus, 1764)	VC	A	<i>Barleria cristata</i> L. (Acanthaceae)
72	Blue Pansy - <i>Junonia orithya</i> (Linnaeus, 1758)	C	A	<i>Barleria mysorensis</i> Roth; <i>Rostellularia procumbens</i> (L.) Nees (Acanthaceae)
73	Lemon Pansy - <i>Junonia lemonias</i> (Linnaeus, 1758)	C	A	<i>Mimosa pudica</i> L. (Fabaceae), <i>Hygrophila auriculata</i> (Schumach.) Heine (Acanthaceae)
74	Peacock Pansy - <i>Junonia almana</i> (Linnaeus, 1758)	C	A	<i>Hygrophila auriculata</i> (Schumach.) Heine (Acanthaceae)
75	Grey Pansy - <i>Junonia atlites</i> (Linnaeus, 1763)	R	RS	<i>Hygrophila auriculata</i> (Schumach.) Heine (Acanthaceae)
76	Chocolate Pansy - <i>Junonia iphita</i> (Cramer, 1779)	VC	A	<i>Ruellia simplex</i> C.Wright (Acanthaceae)
77	Yellow Pansy - <i>Junonia hierta</i> (Fabricius, 1798)	VC	A	<i>Ruellia simplex</i> C.Wright (Acanthaceae)
78	Painted Lady - <i>Vanessa cardui</i> (Linnaeus, 1758)	R	EP, RS	<i>Argemone mexicana</i> L. (Papaveraceae)
79	Tawny Coaster - <i>Acraea terpsicore</i> (Linnaeus, 1758)	VC	A	<i>Passiflora subpeltata</i> Ortega (Passifloraceae)

80	Tailed Palmfly - <i>Elymnias caudata</i> Butler, 1871	C	A	<i>Cocos nucifera</i> L. (Arecaceae)
81	Common Lascar - <i>Pantoporia hordonia</i> (Stoll, 1790)	VC	A	<i>Vachellia farnesiana</i> (L.) Wight & Arn (Fabaceae)
82	Extra Lascar - <i>Pantoporia sandaka</i> (Butler, 1892)	R	RS	<i>Vachellia farnesiana</i> (L.) Wight & Arn (Fabaceae)
83	Rustic - <i>Cupha erymanthis</i> (Drury, 1773)	C	A	Not available
84	Common Baron - <i>Euthalia aconthea</i> (Cramer, 1777)	C	RS	<i>Mangifera indica</i> L. (Anacardiaceae)
85	Clipper - <i>Parthenos sylvia</i> (Cramer, 1775)	R	EP,RS	Not available
86	Common Crow - <i>Euploea core</i> (Cramer, 1780)	VC	A	<i>Ficus benghalensis</i> L. (Moraceae); <i>Asclepias curassavica</i> L. (Apocynaceae)
87	Double-branded Crow - <i>Euploea sylvester</i> (Fabricius, 1793)	C	A	<i>Ficus benghalensis</i> L. (Moraceae); <i>Asclepias curassavica</i> L. (Apocynaceae)
88	Brown King Corw - <i>Euploea klugii</i> Moore, (1858)	R	RS	<i>Streblus asper</i> Lour. (Moraceae)
89	Blue Tiger - <i>Tirumala limniace</i> (Cramer, 1775)	VC	RS	<i>Asclepias curassavica</i> L.; <i>Calotropis gigantea</i> (L.) W.T.Aiton (Apocynaceae)
90	Dark Blue Tiger - <i>Tirumala septentrionis</i> (Butler, 1874)	VC	RS	<i>Wattakaka volubilis</i> (L.f.) Stapf (Apocynaceae)
91	Plain Tiger - <i>Danaus chrysippus</i> (Linnaeus, 1758)	VC	A	<i>Asclepias curassavica</i> L.; <i>Calotropis gigantea</i> (L.) W.T.Aiton (Apocynaceae)
92	Striped Tiger - <i>Danaus genutia</i> (Cramer, 1779)	VC	A	<i>Asclepias curassavica</i> L.; <i>Calotropis gigantea</i> (L.) W.T.Aiton (Apocynaceae)
93	Glassy Tiger - <i>Parantica aglea</i> (Stoll, 1782)	C	RS	<i>Asclepias curassavica</i> L.; <i>Calotropis gigantea</i> (L.) W.T.Aiton (Apocynaceae)
94	Nilgiri Tiger - <i>Parantica nilgiriensis</i> (Moore, 1877)*	R	EP,RS	<i>Vincetoxicum indicum</i> (Burm.f.) Mabb. (Apocynaceae)
Family: Lycaenidae				
95	Apefly - <i>Spalgis epius</i> (Westwood, 1851)	C	RS	Unknown / larvae feeds on mealy bugs
96	Pointed Ciliate Blue - <i>Anthene lycaenina</i> (R. Felder, 1868)	C	RS	<i>Leucaena leucocephala</i> (Lam.) de Wit; <i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. (Fabaceae)
97	Common Hedge Blue - <i>Acytolepis puspa</i> (Horsfield, 1828)	R	RS	<i>Peltophorum pterocarpum</i> (DC.) Backer ex K.Heyne (Fabaceae)
98	Common Pierrot - <i>Castalius rosimon</i> (Fabricius, 1775)	VC	A	<i>Ziziphus mauritiana</i> Lam.; <i>Ziziphus oenoplia</i> (L.) Mill. (Rhamnaceae)
99	Angled Pierrot - <i>Caleta decidia</i> (Hewitson, 1876)	VC	RS	<i>Ziziphus oenoplia</i> (L.) Mill. (Rhamnaceae)

100	Banded Blue Pierrot - <i>Discolampa ethion</i> (Westwood, 1851)	C	A	<i>Ziziphus mauritiana</i> Lam.; <i>Ziziphus oenopolia</i> (L.) Mill. (Rhamnaceae)
101	Stripped Pierrot - <i>Tarucus nara</i> (Kollar, 1848)	C	A	<i>Ziziphus mauritiana</i> Lam.; <i>Ziziphus oenopolia</i> (L.) Mill. (Rhamnaceae)
102	Dark Pierrot - <i>Tarucus ananda</i> (de Nicéville, 1884)	R	RS	<i>Ziziphus oenopolia</i> (L.) Mill. (Rhamnaceae); <i>Loranthus</i> sp. (Loranthaceae)
103	Lime Blue - <i>Chilades lajus</i> (Stoll, 1780)	VC	A	<i>Citrus × limon</i> (L.) Osbeck (Rutaceae)
104	Plains Cupid - <i>Chilades pandava</i> (Horsfield, 1829)	C	A	<i>Cycas revoluta</i> Thunb. (Cycadaceae)
105	Small Cupid - <i>Chilades parrhasius</i> (Fabricius, 1793)	C	RS	<i>Dichrostachys cinerea</i> (L.) Wight & Arn. (Fabaceae)
106	Indian Cupid - <i>Everes lacturnus</i> (Godart, 1824)	C	RS	<i>Dichrostachys cinerea</i> (L.) Wight & Arn. (Fabaceae)
107	Gram Blue - <i>Euchrysops cnejus</i> (Fabricius, 1798)	C	A	<i>Crotalaria pallida</i> Aiton (Fabaceae)
108	Grass Jewel - <i>Freyeria trochylus</i> (Freyer, 1845)	C	A	<i>Trichodesma indicum</i> (L.) Sm. (Boraginaceae)
109	Oriental Grass Jewel - <i>Freyeria putli</i> (Kollar, 1844)	VC	RS	<i>Trichodesma indicum</i> (L.) Sm. (Boraginaceae)
110	Common Cerulean - <i>Jamides celeno</i> (Cramer, 1775)	VC	A	<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)
111	Dark Cerulean - <i>Jamides bochus</i> (Stoll, 1782)	C	A	<i>Pongamia pinnata</i> (L.) Pierre; <i>Gliricidia sepium</i> (Jacq.) Kunth (Fabaceae)
112	Metallic Cerulean - <i>Jamides alecto</i> (C. Felder, 1860)	R	A	<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)
113	Pea Blue - <i>Lampides boeticus</i> (Linnaeus, 1767)	VC	A	<i>Gliricidia sepium</i> (Jacq.) Kunth (Fabaceae)
114	Zebra Blue - <i>Leptotes plinius</i> (Fabricius, 1793)	VC	A	<i>Plumbago zeylanica</i> L. (Plumbaginaceae)
115	Common Lineblue - <i>Prosotas nora</i> (C. Felder, 1860)	VC	RS	<i>Mimosa pudica</i> L.; <i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. (Fabaceae)
116	Tailless Lineblue - <i>Prosotas dubiosa</i> (Semper, 1879)	VC	RS	<i>Mimosa pudica</i> L. (Fabaceae)
117	Dingy Lineblue - <i>Petrelaea dana</i> (de Nicéville, 1884)	VC	RS	<i>Terminalia catappa</i> L. (Combretaceae)
118	Dark Grass Blue - <i>Zizeeria karsandra</i> (Moore, 1865)	C	A	<i>Amaranthus spinosus</i> L.; <i>A. viridis</i> L. (Amaranthaceae)
119	Pale Grass Blue - <i>Pseudozizeeria maha</i> (Kollar, 1848)	C	RS	<i>Oxalis corniculata</i> L. (Oxalidaceae)
120	Lesser Grass Blue - <i>Zizina otis</i> (Fabricius, 1787)	C	A	<i>Oxalis corniculata</i> L. (Oxalidaceae); <i>Amaranthus spinosus</i> L. (Amaranthaceae)

121	Tiny Grass Blue - <i>Zizula hylax</i> (Fabricius, 1775)	VC	RS	<i>Tribulus terrestris</i> L. (Zygophyllaceae)
122	Bright Babul Blue - <i>Azonus ubaldus</i> (Stoll, 1782)	C	RS	<i>Mimosa pudica</i> L.; <i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. (Fabaceae)
123	African Babul Blue - <i>Azonus jesous</i> (Guérin-Méneville, 1849)	C	RS	<i>Mimosa pudica</i> L.; <i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. (Fabaceae)
124	Common Acacia Blue - <i>Surendra quercetorum</i> (Moore, 1858)	R	RS	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. (Fabaceae)
125	Silver Streaked Acacia Blue - <i>Zinaspa todara</i> (Moore, 1884)	VR	RS	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. (Fabaceae)
126	Common Silverline - <i>Spindasis vulcanus</i> (Fabricius, 1775)	C	A	<i>Cassia fistula</i> L. (Fabaceae); <i>Ziziphus</i> <i>mauritiana</i> Lam. (Rhamnaceae);
127	Long-banded Silverline - <i>Spindasis lohita</i> (Horsfield, [1829])	R	RS	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby (Fabaceae); <i>Terminalia paniculata</i> B.Heyne ex Roth (Combretaceae)
128	Plumbeous Silverline - <i>Spindasis schistacea</i> (Moore, 1881)	R	RS	<i>Vachellia nilotica</i> (L.) P.J.H.Hurter & Mabb. (Fabaceae)
129	Common Shot Silverline - <i>Spindasis ictis</i> (Hewitson, 1865)	R	RS	<i>Senna siamea</i> (Lam.) H.S.Irwin & Barneby (Fabaceae); <i>Terminalia paniculata</i> B.Heyne ex Roth (Combretaceae)
130	Red Pierrot - <i>Talicada nyseus</i> (Guérin-Méneville, 1843)	VC	A	<i>Kalanchoe delagoensis</i> Eckl. & Zeyh. (Crassulaceae)
131	Common Onyx - <i>Horaga onyx</i> (Moore, 1858)	VR	RS	<i>Mangifera indica</i> L. (Anacardiaceae)
132	Blue-bordered Plane - <i>Bindahara moorei</i> Fruhstorfer, 1904	C	A	<i>Salacia fruticosa</i> Wall. ex M.A.Lawson (Celastraceae)
133	Yam Fly - <i>Loxura atymnus</i> (Stoll, 1780)	C	A	<i>Dioscorea pentaphylla</i> L. (Dioscoreaceae)
134	Monkey Puzzle - <i>Rathinda amor</i> (Fabricius, 1775)	VC	A	<i>Mangifera indica</i> L. (Anacardiaceae); <i>Ixora coccinea</i> L. (Rubiaceae)
135	Peacock Royal - <i>Tajuria cippus</i> (Fabricius, 1798)	C	A	<i>Loranthus sp.</i> (Loranthaceae)
136	Silver Royal - <i>Ancema sudica</i> (Evans, 1926)*	R	RS	<i>Loranthus sp.</i> (Loranthaceae)
137	Nilgiri Tit - <i>Hypolycaena nilgirica</i> Moore, (1884)*	R	RS	<i>Eulophia graminea</i> Lindl. (Orchidaceae)
138	Common Guava Blue - <i>Virachola</i> <i>isocrates</i> (Fabricius, 1793)	R	RS	<i>Psidium guajava</i> L. (Myrtaceae)
139	Large Guava Blue - <i>Virachola perse</i> (Hewitson, 1863)	R	RS	<i>Psidium guajava</i> L. (Myrtaceae)
140	Cornelian - <i>Deudorix epijarbas</i> (Moore, 1858)	R	RS	<i>Sapindus emarginatus</i> Vahl (Sapindaceae)

141	Slate Flash - <i>Rapala manea</i> (Hewitson, 1863)	C	KA, RS	<i>Mangifera indica</i> L. (Anacardiaceae); <i>Senegalia torta</i> (Roxb.) Maslin, Seigler & Ebinger (Fabaceae)
142	Forget-me-not - <i>Catochrysops strabo</i> (Fabricius, 1793)	C	RS	<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)
143	Purple Leaf Blue - <i>Amblypodia anita</i> (Hewitson, 1862)	R	RS	Not available
144	Common Quaker - <i>Neopithecopis zalmora</i> (Butler, 1870)	VC	EP, RS	<i>Glycosmis pentaphylla</i> (Retz.) DC. (Rutaceae)
145	Redspot - <i>Zesius chrysomallus</i> Hübner, (1819)	R	RS	Not available
146	Large Oakblue - <i>Arhopala amantes</i> (Hewitson, 1862)	R	RS	<i>Terminalia paniculata</i> B.Heyne ex Roth (Combretaceae)
147	Indian Sunbeam - <i>Curetis thetis</i> (Drury, 1773)	C	KA, RS	<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)
148	Acute Sunbeam - <i>Curetis acuta</i> Moore, 1877	C	RS	<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)
Family: Riordinidae				
149	Double-banded Judy - <i>Abisara bifasciata</i> Moore, 1877	R	RS	Not available
Family: Hesperidae				
150	Orange-tailed Awl - <i>Bibasis sena</i> (Moore, 1866)	VR	RS	<i>Combretum</i> sp. (Combretaceae)
151	Common Orange Awlet - <i>Burara jaina</i> (Moore, 1866)	VR	RS	Not available
152	Common Banded Awl - <i>Hasora chromus</i> (Cramer, 1780)	C	A	<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)
153	Plain Banded Awl - <i>Hasora vitta</i> (Butler, 1870)	C	RS	<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)
154	White-banded Awl - <i>Hasora taminatus</i> (Hübner, 1818)	C	A	<i>Pongamia pinnata</i> (L.) Pierre (Fabaceae)
155	Brown Awl - <i>Badamia exclamationis</i> (Fabricius, 1775)	C	A	<i>Terminalia bellirica</i> (Gaertn.) Roxb. (Combretaceae)
156	Common Small Flat - <i>Sarangesa dasahara</i> (Moore, 1866)	C	RS	<i>Lepidagathis cuspidata</i> Nees (Acanthaceae)
157	Fulvous Pied Flat - <i>Pseudocoladenia dan</i> (Fabricius, 1787)	C	A	<i>Achyranthes aspera</i> L. (Amaranthaceae)
158	Tricolour Pied Flat - <i>Coladenia indrani</i> (Moore, 1866)	R	RS	<i>Dalbergia latifolia</i> Roxb. (Fabaceae)
159	Water Snow Flat - <i>Tagiades litigiosa</i> Möschler, 1878	VC	KA, RS	<i>Dioscorea pentaphylla</i> L. (Dioscoreaceae)

160	Common Snow Flat - <i>Tagiades japetus</i> (Stoll, 1781)	VC	RS	<i>Dioscorea pentaphylla</i> L. (Dioscoreaceae)
161	Malabar Spotted Flat - <i>Celaenorrhinus ambareesa</i> (Moore, 1866)	C	RS	<i>Strobilanthes</i> sp. (Acanthaceae)
162	Suffused Snow Flat - <i>Tagiades gana</i> (Moore, 1866)	R	A	<i>Dioscorea pentaphylla</i> L. (Dioscoreaceae)
163	Golden Angle - <i>Caprona ransonnettii</i> (R. Felder, 1868)	C	KA, RS	<i>Triumfetta rhomboidea</i> Jacq. (Malvaceae)
164	Indian Bush Hopper - <i>Ampittia dioscorides</i> (Fabricius, 1793)	C	RS	<i>Imperata cylindrica</i> (L.) Raeusch. (Poaceae)
165	Chestnut Bob - <i>Iambrix salsala</i> (Moore, 1866)	VC	EP, RS	<i>Bambusa bambos</i> (L.) Voss (Poaceae)
166	Giant Redeye - <i>Gangara thyrasis</i> (Fabricius, 1775)	C	RS	<i>Bambusa bambos</i> (L.) Voss (Poaceae)
167	Common Branded Redeye - <i>Matapa aria</i> (Moore, 1866)	C	RS	<i>Bambusa bambos</i> (L.) Voss (Poaceae)
168	Grass Demon - <i>Udaspes folus</i> (Cramer, 1775)	VC	RS	Not available
169	Common Grass Dart - <i>Taractrocera maevius</i> (Fabricius, 1793)	C	RS	Not available
170	Plain Palm Dart - <i>Cephrenes acalle</i> (Höppfer, 1874)	C	RS	<i>Bambusa bambos</i> (L.) Voss (Poaceae)
171	Dark Palm Dart - <i>Telicota bambusae</i> (Moore, 1878)	C	KA, RS	<i>Bambusa bambos</i> (L.) Voss (Poaceae)
172	Common Dartlet - <i>Oriens gola</i> (Moore, 1877)	C	RS	<i>Oplismenus compositus</i> (L.) P.Beauv. (Poaceae)
173	Smaller Dartlet - <i>Oriens goloides</i> (Moore, 1881)	C	RS	<i>Oplismenus compositus</i> (L.) P.Beauv. (Poaceae)
174	Indian Grizzled Skipper - <i>Spialia galba</i> (Fabricius, 1793)	C	A	<i>Sida rhombifolia</i> L. (Malvaceae)
175	African Mar bled Skipper - <i>Gomalia elma</i> (Trimen, 1862)	C	KA, RS	<i>Abutilon indicum</i> (L.) Sweet (Malvaceae)
176	Indian Ace - <i>Halpe hindu</i> Evans, 1937	C	RS	<i>Bambusa bambos</i> (L.) Voss (Poaceae)
177	Small Branded Swift - <i>Pelopidas mathias</i> (Fabricius, 1798)	R	KA, RS	<i>Imperata cylindrica</i> (L.) Raeusch. (Poaceae)
178	Rice Swift - <i>Borbo cinnara</i> (Wallace, 1866)	C	RS	<i>Setaria verticillata</i> (L.) P.Beauv. (Poaceae)

Note: Occ-Ocurrence in SACON campus; Rec-Records; (*) Endemic to Western Ghats;

VC-Very Common; C-Common; R-Rare; VR-Very Rare;

EP-Eswaran and Pramod (2005); KA-Kumar and Arun (2014); A-All authors; RS - Recent Survey.

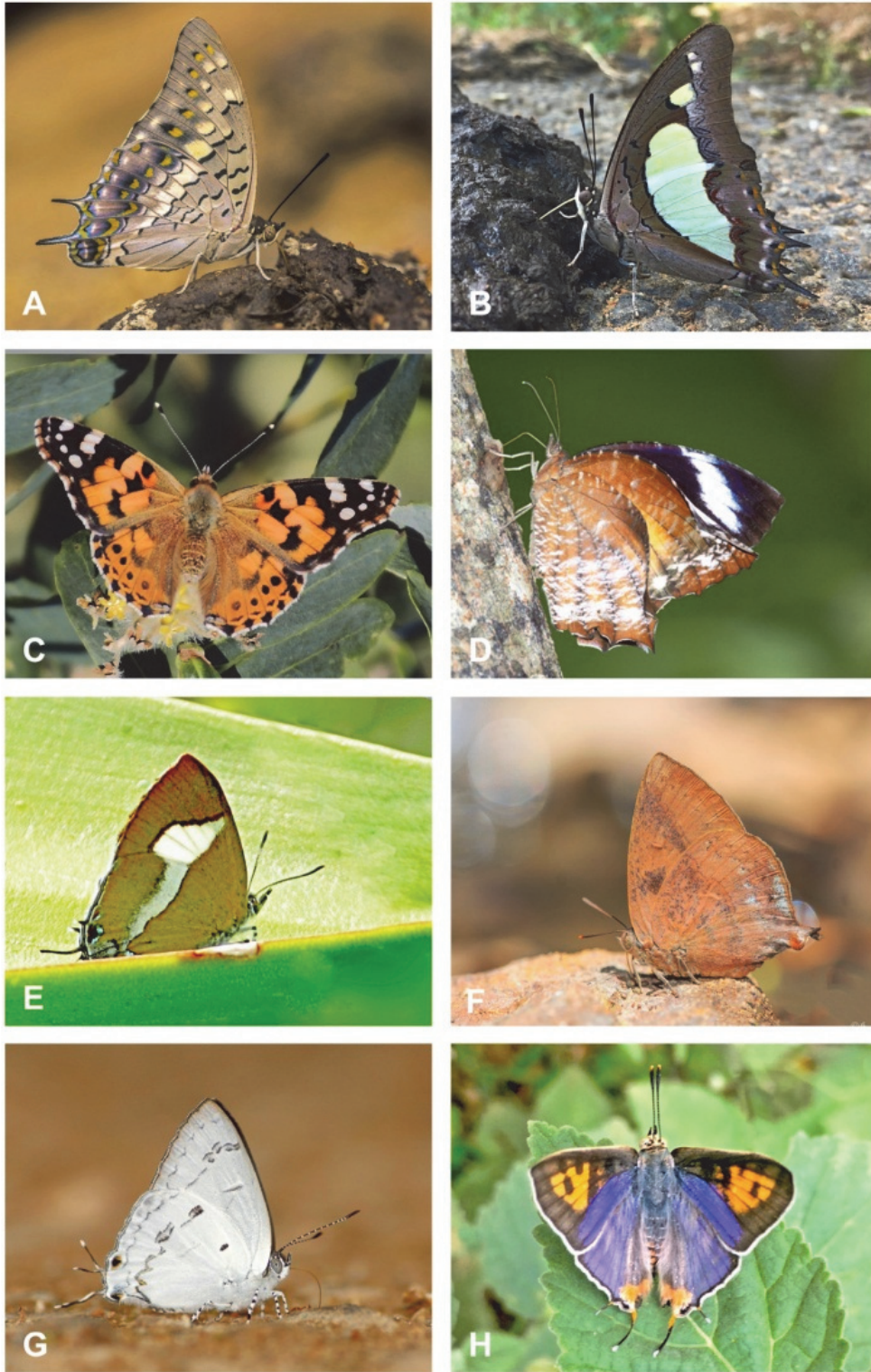


Fig. 4 Some selected butterflies in SACON; A. Black Rajah, B. Anomalous Nawab, C. Painted Lady, D. Tailed Palmfly (Nymphalidae); E. Common Onyx; F. Purple Leaf Blue; G. Nilgiri Tit; H. Common Shot Silverline (Lycaenidae). (All images © S. Jeevith)



Fig. 5 Some selected butterflies in SACON; A. Silver Streaked Acacia Blue, B. Common Acacia Blue, C. Dark Pierrot (*Lycaenidae*); D. Orange-tail Awl; E. Common Orange Awlet; F. Tricoloured Flat, G. Rice Swift, H. Suffused Snow Flat (*Hesperiidae*). (Photographs of D, G - ©Chaitra Shree, and other images © S. Jeevith)

Looking at the habit-wise representation of larval host plants, both herbs and trees were represented with 32 species each, followed by 19 shrubs and seven climbers. The campus is rich in plant diversity with a reported 402 plants belonging to 84 families as reported by Balasubramanian *et al.* (2015), and Prakash *et al.* (2022) reported 98 invasive alien plant species from Anaikatty hills, of which, 26 species of invasive plants served as nectar food plant for 42 butterfly species (Monica Sri, 2019).

The present study provides detailed information about the species composition and a significant increase in the species richness of butterflies indicate the success of habitat conservation efforts by SACON and the resultant improvement in floral and faunal diversity over the years. The selected images of butterfly species are given in figures 3 to 5. The information regarding the butterfly host plants in the study area will also help to understand the vegetation structure of the area which will further the conservation efforts to conserve these biodiversity rich habitat zones.

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