

## SURVEY OF THE BUTTERFLY FAUNA OF UDAWALAWA NATIONAL PARK

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### Abstract

*The survey found 136 species, which are listed by families with their Latin and English names. They include 16 endemic, 45 threatened, 20 rare, and 3 very rare species. Some of their habitat preferences are briefly discussed, and the importance of the park butterfly fauna in relation to that of Sri Lanka as a whole is made clear.*

### Introduction

#### *Description of the area*

The Udawalawa National Park was established on 30th July 1972. It is in the lower catchment of the Udawalawa Reservoir in the low-country intermediate rainfall zone. On the right bank of the Walawe Ganga it is in Ratnapura District of the Sabaragamuwa Province, and on the left bank in Moneragala District of the Uva Province. The park lies between about 6°25' to 6°35' N and 80°45' to 81°0' E (Fig. 1).

The land area of the park is about 28,910 ha. The Udawalawa reservoir is included; its area when full is 3405 ha. The total area within the declared boundary of the park is therefore 32,315 ha.

#### *Environmental factors*

The climate is characterized by seasonal rainfall and uniformly high temperature.

The mean annual rainfall is about 1500 mm in the south, and gradually increases towards the north. There are two rainfall peaks, in April-May and October-November. A short dry spell comes in February-March, and there is a prolonged dry period from mid-May to the end of September. The main rainy season begins with convectional thunder storms in September-October, which are followed by monsoon rains in November to mid-January. The April-May rainfall (the *vala* rains) is entirely due to convectional activity.

The mean annual temperature is about 32°C, and is fairly uniform throughout the year; there are no extreme fluctuations and the difference between the means for the hot season and the cool season months is less than 5°. The mean monthly maximum temperature varies from 30.0 to 37.2° and the mean monthly minimum from 17.7 to 30°.

The relative humidity at 8.30 hours varies from 61 to 94 and at 15.30 hours from 31 to 95%. The wind speeds recorded at Angunakolapelessa, the nearest meteorological station to the park, are relatively low in the rainy seasons. In May, June and July they are high. In March and April and again during the north-east monsoon (November-January) they are relatively low. Throughout the year the winds speeds in the park are lower than they are near the south coast, which is not very far away.

The vegetation includes both grassland and different stages of forest succession. The forest has largely been cleared for shifting cultivation (*chena*), leading to anthropogenic grassland and scrub communities. Ten major land-use types were observed during this study. They are shown on the map in Fig. 2, and Table 1 gives their areas.

Although most of the vegetation in the park is secondary, it nevertheless supports an extensive range of fauna: 21 species of fishes, 12 amphibians, 18 snakes, 15 tetrapod reptiles, at least 184 birds and 39 mammals. This are high numbers in relation to the total of 108 species of fishes, 48 amphibians, 87 snakes, 75 tetrapod reptiles, 419 birds, and 89 mammals recorded in Sri Lanka. That it has 23 endemic and 48 threatened vertebrate species (IUCN, 1995) shows its importance for the biodiversity of the country. Six of the species are listed in the IUCN Red Data book as globally threatened.

**Table 1 :Area of major habitat types**

Land-use type	Area (ha)	Land-use type	Area (ha)
1 – Forest	5227	6 – Scrub with grassland	3718
2 – Secondary forest with closed canopy	2216	7 – Medium height scrub	1683
3 – Degraded/ secondary open forest	1949	9 – Secondary forest	3719
4 – Highly grazed grassland/ abandoned chena	1486	10 – Teak plantation	1076
5 – Guinea grass/savannah	7662	11 – Abandoned paddy land	174

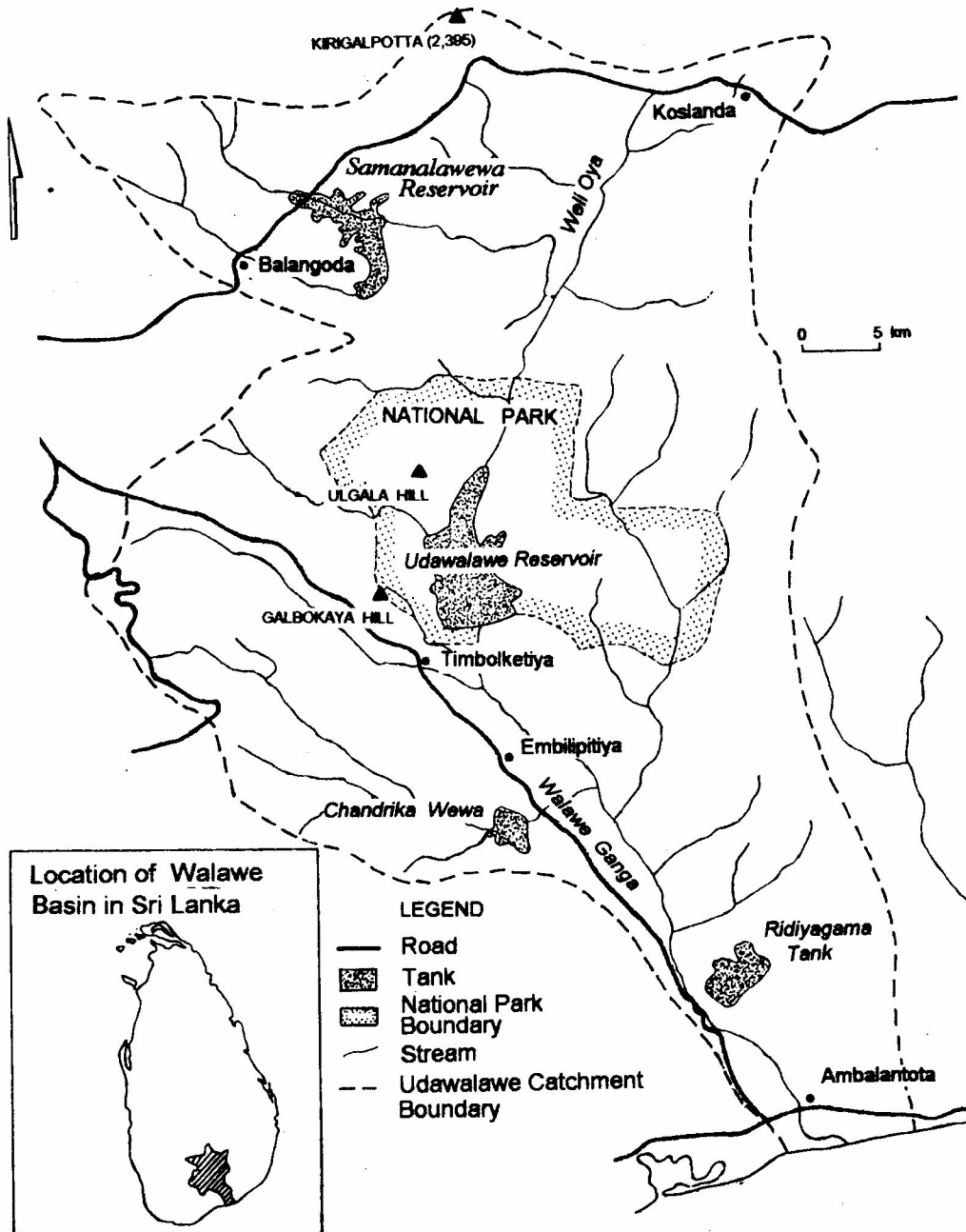
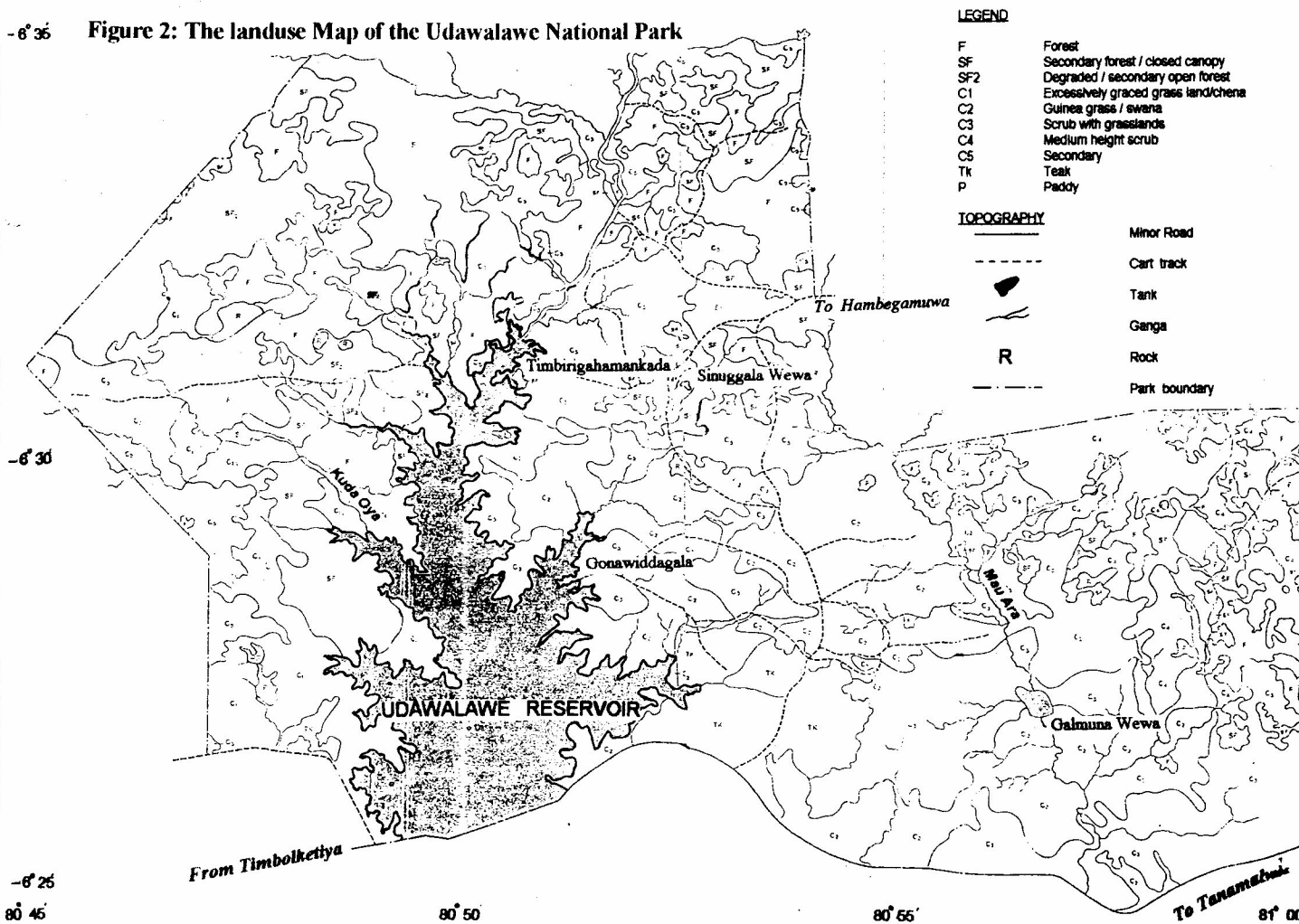


Figure 1: The location map of Udawalawe National Park

Figure 2: The landuse Map of the Udawalawe National Park



### Methods

In January to August 1995 a field survey was carried out to identify the butterfly fauna of the park. Observations were made in each of the ten habitat types. Data were collected in daylight hours in a total of 20 days.

Butterflies were captured with a home made net (small-mesh type, 50 cm diameter, 60 cm deep, and 1-m handle). Collections were made along 100-m line transects in each habitat. Preserved specimens were deposited at the Department of Agricultural Biology, University of Peradeniya.

### Results and discussion

According to Woodhouse (1950) 242 butterflies belonging to 9 families have been recorded from Sri Lanka (Table 2). Among them there are 42 endemic, 11 very rare and 41 rare species. The IUCN considers that they include 81 threatened species and 4 red-listed threatened species (Table 4).

The present study shows that a total of 136 species of butterflies belonging to 9 families have been recorded in the park. The number of species observed in each family is given in Table 3. Among them, there are 16 endemic, 45 threatened, 20 rare, and 3 very rare species (Table 5).

**Table 2 : Butterfly fauna of Sri Lanka**

Families	Species
Danaidae	12
Satyridae	16
Amathusiidae	1
Bymphalidae	37
Erycinidae	3
Lycaenidae	81
Pieridae	29
Papilionidae	15
Hesperiidae	48
Total	242

The dominant land-use types in the park belong to categories 4, 5, 6, 7 and 10 of Table 1. These represent habitats with much open grassland and scrub vegetation. The dominant butterfly family is therefore the Lycaenidae. Their dominant plant species are *Lantana camara* (Verbenaceae), *Chromolaena odorata* (Asteraceae), *Tephrosia purpurea* (Fabaceae), and grasses. These are the preferred food plants of the Lycaenidae. Some of this and other families, such as *Papilio demoleus* (lime butterfly), *Eurema hecabe simulata* (common grass yellow), *Danaus chrysippus* (plain tiger), *Euploea coreasela* (common Indian crow butterfly) are also found here because they prefer to live in open habitats.

**Table 3 : Butterfly fauna of Udawalawa National Park**

Families	Species
Danaidae	4
Satyridae	6
Amathusiidae	1
Nymphalidae	23
Erycinidae	2
Lycaenidae	45
Pieridae	17
Papilionidae	7
Hesperiidae	31
Total	136

**Table 4 : Status of the butterfly fauna of Sri Lanka**

Families	9
Species	242
Endemic	42
Very rare	11
Rare	41
Threatened species	81
IUCN red list of threatened species	4

**Table 5 : Status of the butterfly fauna of Udawalawa National Park**

Families	8
Species	136
Endemic	16
Very rare	3
Rare	20
Threatened species	43
IUCN red list of threatened species	2

The butterflies belonging to the family Papilionidae very much prefer to live in canopy layer of the forests. Therefore the species *Papilio polymnestor parinda* (blue mormon), *Troides helena darsius* (common bird-wing) and *Papilio crino* (common banded peacock butterfly) were more dominant in land-use categories 1, 2, 3 and 8.

The commonest species was *Euploea coreasela* (the common Indian crow butterfly), and the next commonest were *Danaus chrysippus* (plain tiger), *Ypthima ceylonica* (white four-ring), *Orsotriaena medus mandata* (nigger), *Neptis hylas varmon* (common sailor), *Jamides celenotissama* (common cerulean), and *Leptosia nina nina* (Psyche). Species observed in all the main land-use types were *Appias albina darada* (common albatross butterfly), *Eurema hecabe simulata* (common gross yellow), and *Papilio demoleus* (lime butterfly).

The butterfly population of the country has decreased to a considerable extent because of the use of agro-chemicals, mainly pesticides. It is now very hard to see a single butterfly in paddy land. Only a very few studies have been made of this attractive “super family” of the animal kingdom. It is very important to conserve their habitats and to make further studies of them. It is strongly recommended that the wildlife authorities should encourage visitors, both local and foreign, to practice butterfly watching, as they already practice bird watching in the National Parks, as an important eco-tourism activity.

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#### References

- IUCN (1995).  
Woodhouse, L.G.O. (1950). *The butterfly fauna of Ceylon*.

#### Appendix – Systematic list of butterfly fauna of Udawalawa National Park

Kingdom	– Animalia
Phylum	– Arthropoda
Class	– Insecta
Order	– Lepidoptera
Sub-order	– Heteroneura
Super family	– Papilionoidea

#### Family Danaidae

1. *Idea lynceus jasonia* Wd. (Ceylon tree nymph)<sup>En,Th</sup>
2. *Danaus aglea aglea* Cr. (glassy tiger)
3. *Danaus chrysippus* L. (plain tiger)
4. *Euploea core asela* M. (common Indian crow)<sup>E</sup>

#### Family Satyridae

5. *Mycalesis perseus typhlus* Fr. (common bushbrown)
6. *Lathe rohria nilgiriensis* Guer. (common treebrown)
7. *Ypthima ceylonica* Hew. (white four-ring)
8. *Orsotriaena medus mandata* M. (nigger)
9. *Melanitis leda ismene* Cr. (common evening brown)
10. *Elymnias hypermnestra fraterna* But. (common palm fly)<sup>En</sup>

#### Family Amathusiidae

11. *Discophora lepida ceylonica* Fr. (southern rajah)<sup>Th</sup>

#### Family Nymphalidae

12. *Charaxes polyxena psaphon* Wd. (tawny rajah)<sup>Th</sup>

13. *Murwareda athamas madeus* Roth. (common nawab)<sup>Th</sup>
14. *Apatura parisatis camiba* M. (black prince)
15. *Euthalia aconthea vasanta* M. (baron)
16. *Parthenos sylvia cyaneus* M. (clipper)<sup>En, Th</sup>
17. *Limenitis procris* M. (commander)<sup>En, Th</sup>
18. *Neptis jumbah* Fr. (chestnut-streaked sailor)
19. *Neptis hylas varmona* M. (common sailor)
20. *Hypolimnas misippus* L. (Danaid eggfly)
21. *Doleschallia hylas vanmora* M. (common sailor)
22. *Kallima philanctus* Wd. (blue oak leaf)<sup>En, Th</sup>
23. *Precis lintingensis* F. (yellow pansy)
24. *Percis almana almana* L. (peacock pansy)
25. *Vanessa cardui* L. (painted lady)
26. *Angynnys hyperbius taprobana* M. (Indian fritillary)
27. *Cupha erymanthis placida* M. (rustic)
28. *Phalanta phalanta* Dry. (common leopard)
29. *Vindula erota asela* M. (cruiser)<sup>En, Th</sup>
30. *Cirroocharoa thais lanka* M. (Tamil yeoman)
31. *Cethosia nietneri nietneri* Fd. (Tamil lace wing)<sup>En, Th</sup>
32. *Byblia ilithyia* Dry. (joker)<sup>R, Th</sup>
33. *Ariadne minorata* M. (angled Castor)
34. *Telchinia violae* F. (tawny Castor)

#### Family Erycinidae

35. *Lepia lepitoides* M. (beak Libythea)<sup>R, Th</sup>
36. *Abisara acherius prunosa* M. (plum Judy)

#### Family Lycaenidae

37. *Spalgis epeus epeus* Ed. (apefly)
38. *Talicauda nyseus nyseus* Guer. (red pierrot)
39. *Castalius rosimon rosimon* F. (common pierrot)
40. *Tarucus nara* Koll. (striped pierrot)<sup>R, Th</sup>
41. *Syntarucus plinius* F. (zebra blue)
42. *Azanus ubaldus* Cr. (bright babul blue)<sup>R, Th</sup>
43. *Neopithecops zalmora* But. (quaker)
44. *Everes lacturnus parrhasius* F. (Indian cupid)
45. *Megisba malaya thwaitesi* M. (Malayan)
46. *Celastrina puspa felderi* Toxopeus. (common hedge blue)
47. *Chilades lajus lajus* Cr. (lime blue)
48. *Zizeeria trochilus putli* Koll. (grass jewel)
49. *Zizula hylax hylax* F. (tiny grass blue)
50. *Zizina otis decreta* But. (lesser grass blue)
51. *Euchrysops cnejus* F. (gram blue)
52. *Anthene lycaenina* Fd. (pointed ciliate blue)
53. *Catochrysops straho* F. (forget-me-not)
54. *Lampides boeticus* L. (pea blue)



55. *Jamides bochus bochus* Cr. (dark cerulean)  
 56. *Jamides celeno tissama* Fr. (common cerulean)  
 57. *Jamides alecto melichius* Fr. (metallic cerulean)  
 58. *Nacaduba pactolus ceylonica* Fr. (large four-line blue)<sup>R</sup>  
 59. *Nacaduba nabo sidoma* Fr. (pale four-line blue)<sup>R</sup>  
 60. *Nacaduba sinhala* Ormiston. (Ceylon six-line blue)  
 61. *Nacaduba nora ardates* M. (common line blue)  
 62. *Petrelea dana adima* Rh'ePhil. (gingy line blue)  
 63. *Curetis thetis* Dry. (Indian sunbeam)  
 64. *Iraota timoleon nicevillei* But. (silver streak blue)<sup>R, Th</sup>  
 65. *Amblypodia anita naradoides* M. (purple leaf blue)  
 66. *Arhopala centaurus pirama* M. (centaur oakblue)  
 67. *Surendra quercetorum discalis* M. (common acacia blue)  
 68. *Atymnus arcuata* M. (yam fly loxura)  
 69. *Spindasis vulcanus fasca* M. (common silverline)  
 70. *Zesius chrysomallus* Hub. (redspot)  
 71. *Pratapa deva deva* M. (white royal)<sup>R, Th</sup>  
 72. *Tajuria jehana* M. (plains blue royal)<sup>R, Th</sup>  
 73. *Cheritra freja pseudojaffra* M. (common imperial)  
 74. *Rathinda amor* F. (monkey puzzle)  
 75. *Horaga onyx cingalensis* M. (common onyx)<sup>R</sup>  
 76. *Catapaecilma major myositina* Fr. (common tinsel)<sup>Th</sup>  
 77. *Hypolycaena nilgirica* M. (Nilgiri tit)<sup>Th</sup>  
 78. *Deudorix epijarbas epijarbas* M. (cornelian)  
 79. *Virachola isocrates* F. (guava blue)<sup>Th</sup>  
 80. *Rapala lankana* M. (Malabar flash)<sup>Vr, Th</sup>  
 81. *Phocides moorei* Fr. (plane bindahara)<sup>Th</sup>

#### Family Pieridae

82. *Leptosia nina nina* F. (Psyche)  
 83. *Delias euch aris* Dry. (common Jezebel)  
 84. *Prioneris sita* Fd. (painted saw-tooth)<sup>R, Th</sup>  
 85. *Anapheisaurota taprobana* M. (pioneer)  
 86. *Huphina narssa phryne* F. (common gull)  
 87. *Appias indra narendra* M. (plain puffin)<sup>Vr, Th</sup>  
 88. *Appias albina darata* Fd. (common albatross)  
 89. *Catopsilia crocale crocale* Cr. (common emigrant)  
 90. *Eurema vrigitta rubella* Wallace. (small grass yellow)  
 91. *Eurema blanda silhetana* Wallace. (tree-spot grass yellow)  
 92. *Eurema hecabe simulata* M. (common grass yellow)  
 93. *Lxias marianne* Cr. (white orange tip)  
 94. *Colotis calais modestus* But. (small salmon Arab)  
 95. *Colotis etrida limbatus* But. (little orange tip)<sup>En</sup>  
 96. *Colotis danae danae* F. (crimson tip)  
 97. *Hebomoia glaucippe australis* But. (great orange tip)  
 98. *Valeria ceylanica ceylanica* Fd. (dark wanderer)

**Family Papilionidae**

99. *Troides helena darsius* Gray. (common birdwing)<sup>En, Th</sup>
100. *Polydonus jophon jophon* Gray. (Ceylon rose)<sup>En, R, Th</sup>
101. *Chilasa clytia tankeswara* M. (common mime)<sup>En</sup>
102. *Papilio polymnestor parinda* M. (The Blue Mormon)<sup>En, Th</sup>
103. *Graphium nomius nomius* Esp. (spot swordtail)<sup>Th</sup>
104. *Papilio crino* F. (common banded peacock)<sup>Th</sup>
105. *Papilio demoleus demoleus* L. (lime butterfly)

**Family HesperIIDae**

106. *Hasora padra lanka* Evans. (Ceylon awl)<sup>R, Th</sup>
107. *Bibasis oedipodea ataphus* Watson. (branded orange awlet)<sup>Th</sup>
108. *Choaspes benjaminii benjaminii* Guer. (Indian awl king)
109. *Badamia exclamations* F. (brown awl)
110. *Celaenorrhinus spilothyrus* Fd. (black flat)
111. *Tagiades gapetus obscurus* Mab. (Ceylon snow flat)<sup>En, Th</sup>
112. *Coladenia indrani tissa* M. (tricolour pied flat)
113. *Sarangesa dasahara albicilia* M. (common small flat)
114. *Tapena thwaitesi thwaitesi* M. (black angle)<sup>R, Th</sup>
115. *Caprona ransonnettii ransonnettii* Fd. (golden angle)<sup>Th</sup>
116. *Gomalia elma albofasciata* M. (African marbled skipper)<sup>Vr, Th</sup>
117. *Spalia galba* F. (Indian skipper)
118. *Baracus vittatus vittatus* Fd. (hedge hopper)<sup>En</sup>
119. *Ampittia dioscorides singa* Evans. (bush hopper)
120. *Lambrix salsala luteipalpus* Pl. (chestnut bob)
121. *Suastus gremius subgrisea* M. (Indian palm bob)<sup>Th</sup>
122. *Udaspes folus* Cr. (grass demon)<sup>Vr, Th</sup>
123. *Notocrypta paralysos lysia* Evans. (common banded demon)
124. *Gangara thyrsis clothilda* Herrich-Schaffer. (giant redeye)<sup>Th</sup>
125. *Matapa aria* M. (common redeye)
126. *Hyarotis adrastus adrastus* Cr. (tree filter)
127. *Halpe deocrata* M. (decorated ace)<sup>En, R</sup>
128. *Halpe homolea scylonica* M. (Ceylon ace)
129. *Taractrocera maevius maevius* F. (common grass dart)
130. *Oriens goloides* M. (common dartlet)
131. *Potanthus augusta satra* Fr. (tropic dart)
132. *Telicota colon amba* Evans. (pale palm dart)
133. *Baoris farri penicillata* M. (paint brush swift)<sup>R, Th</sup>
134. *Caltoris kumara lanka* Evans. (blank swift)
135. *Pelopidas conjuncta narooa* M. (conjoined swift)
136. *Parnara bada bada* M. (smallest swift)

<sup>En</sup> = Endemic, <sup>Vr</sup> = Very rare, <sup>R</sup> = Rare,  
<sup>Th</sup> = Threatened, <sup>RI</sup> = IUCN Red-Book threatened species