



Common BUTTERFLIES of Sri Lanka

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Declaration of Our Core Commitment to Sustainability

Dilmah owes its success to the quality of Ceylon Tea. Our business was founded therefore on an enduring connection to the land and the communities in which we operate. We have pioneered a comprehensive commitment to minimising our impact on the planet, fostering respect for the environment and ensuring its protection by encouraging a harmonious coexistence of man and nature. We believe that conservation is ultimately about people and the future of the human race, that efforts in conservation have associated human well-being and poverty reduction outcomes. These core values allow us to meet and exceed our customers' expectations of sustainability.

Our Commitment

We reinforce our commitment to the principle of making business a matter of human service and to the core values of Dilmah, which are embodied in the Six Pillars of Dilmah.

We will strive to conduct our activities in accordance with the highest standards of corporate best practice and in compliance with all applicable local and international regulatory requirements and conventions.

We recognise that conservation of the environment is an extension of our founding commitment to human service.

We will assess and monitor the quality and environmental impact of its operations, services and products whilst striving to include its supply chain partners and customers, where relevant and to the extent possible.

We are committed to transparency and open communication about our environmental and social practices.

We promote the same transparency and open communication from our partners and customers.

We strive to be an employer of choice by providing a safe, secure and non-discriminatory working environment for its employees whose rights are fully safeguarded and who can have equal opportunity to realise their full potential.

We promote good relationships with all communities of which we are a part and we commit to enhance their quality of life and opportunities whilst respecting their culture, way of life and heritage.



1. Introduction

Butterflies have always been a source of great fascination to us due to their delicate, colourful wings. According to scientific classification, these insects belong to the Phylum Arthropoda, sharing the characteristics of a segmented body, jointed appendages and an external skeleton made of chitin. Crabs, lobsters, prawns, scorpions, spiders and millipedes are some other animals that belong to this phylum. Butterflies are further categorised under the Class Insecta owing to specific characteristics such as having three pairs of legs and body segments which are grouped into three main parts: head, thorax and abdomen. Insects also have a respiratory system of divided air tubes (tracheae) that are open to the surface of the body through openings known as spiracles. At the adult stage insects do not have legs attached to their abdomen but those restricted to their thorax. The aforementioned physical features are shared by butterflies and other insects such as dragonflies, beetles, bees, ants, mantises, cockroaches and mosquitoes.

Butterflies and moths are further sub-categorised under the Order Lepidoptera. As such moths and butterflies have two pairs of membranous wings that are covered in broad scales together with the body and legs, and mouth parts modified to form a proboscis, an elongated tubular appendage originating from its head, which is used to feed. Other mouth parts such as mandibles are highly reduced or absent. The Order Lepidoptera comprises of 134 living families of moths and butterflies. Sri Lankan butterflies are represented across six families: Papilionidae, Pieridae, Nymphalidae, Lycaenidae and Riodinidae which are known as true butterflies and Hesperidae which are known as skipper butterflies. All these families belong to the Superfamily Papilionoidea.

◀ 4th Instar Larva

Tailed Jay *Graphium agamemnon menides*

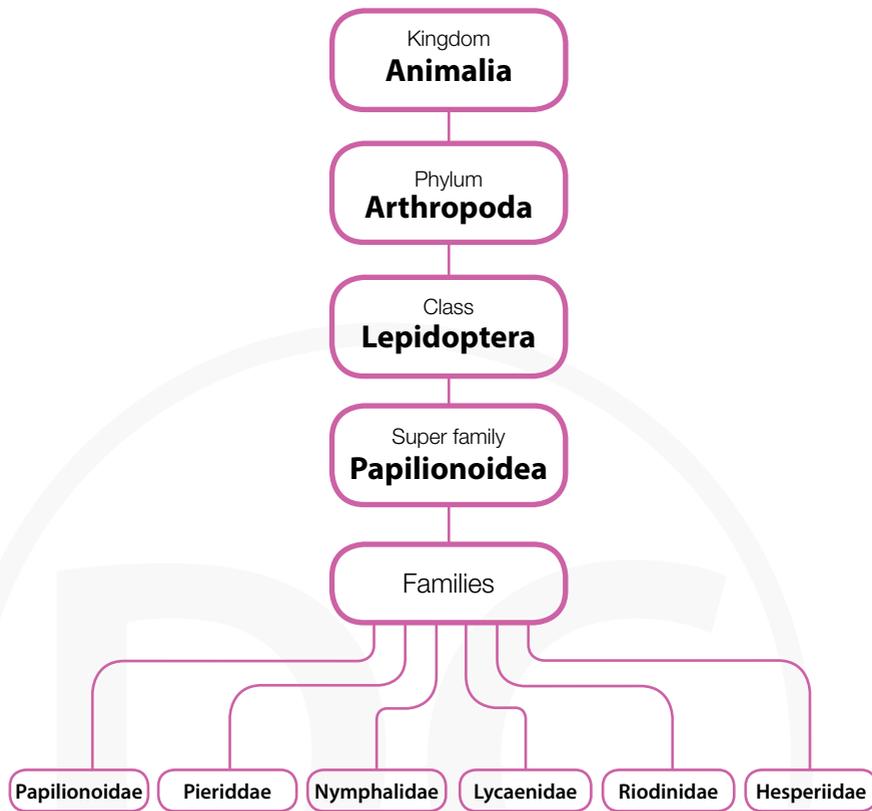


Chart. 1 Classification of Butterflies

The most effective way to differentiate butterflies from moths is the shape of their antenna. Papilionidae, Pieridae, Nymphalidae, Lycaenidae and Riodinidae butterflies have club shaped antennae tips, while those of Hesperidae are hook shaped. These front-projecting antennae slightly vary in shape and size according to the family. While the antennae of moths can take various shapes, they never have club-shaped antennae tips. As some moths hold their antennae along their bodies these cannot always be easily observed. Moths can be further distinguished from butterflies by the numerous scales on their bodies that resemble hair, their large abdomens, and other minor features that are only visible under high magnification. While some moths have very small hind wings which are concealed at rest, the hindwing of butterflies are clearly visible.



Figure 1a antennae of a butterfly (Lycaenidae), **1b** antennae of a Hesperiid, **1c,1d,1e,1f** antennae of moths

2. Life Cycle

Butterflies and moths undergo a physical transformation known as complete metamorphosis. This means that they have four distinct morphological stages in life: egg, larva, pupa and adult butterfly. Generally, the duration of each of these phases varies according to species and weather conditions. Variations have also been observed among different individuals hatched from the same set of eggs and it is assumed that this is related to ensuring the survival of their species. For example, during drought conditions the pupal stage tends to last longer to assure that the butterfly is able to survive after emerging.

2.1 Egg

The first stage of the butterfly life cycle is the egg, which varies in size, shape, colour and surface texture depending on the species they belong to. However, these characteristics are quite similar within distinct groups of butterflies. A butterfly egg has a distinct depression at the top with small pores within, which is called the Microphylet Pit. During fertilisation, sperm enter the egg through these pores. Once ready, the larva emerges from the egg shell by breaking through this fragile area, which generally occurs 3-4 days after the eggs are laid.



Figure 2a Papilionidae, **2b** Pieridae, **2c** Danainae, **2d** Nymphalinae

2.2 Larva (Caterpillar)

Generally the larval phase lasts between 15-20 days. After coming out of the egg, the larva rids itself of its external skin about 5-6 times in a process known as moulting, growing larger with each shedding. The three groupings of their body segments are visible even at this stage. Larvae also have additional pro legs (see **Figure 4** below) to maneuver the abdomen, which disappear by the time it reaches adult stage. In this larval phase it only has simple eyes, and its antennae are highly reduced. Further, unlike in the adult stage, butterfly larvae have chewing appendages which they use to feed on solid materials.

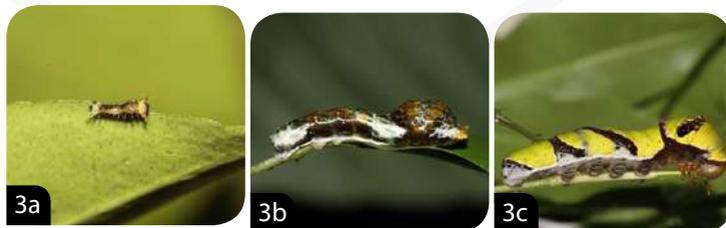


Figure 3. Red Helen *Papilio helenus*
3a 1st Instar Larva, **3b** 3rd Instar Larva, **3c** 5th Instar Larva

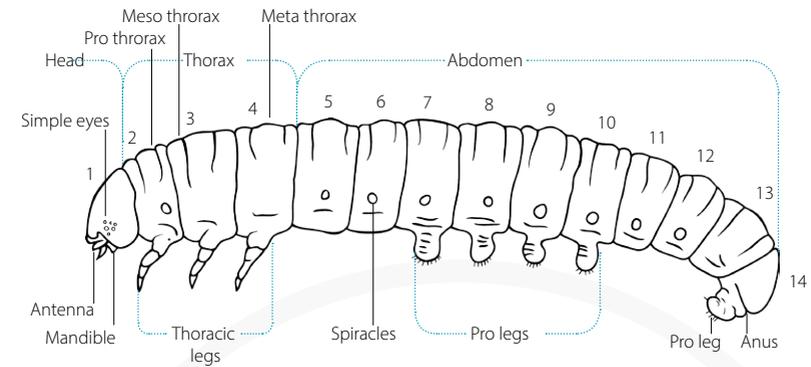


Figure 4 structure of the larva

2.2.1 Food

The first meal of the larva is its own egg shell which contains very high nutritional value including calcium and protein. Large butterfly larvae (e.g. Family Papilionidae) devour the whole egg shell, while small butterfly larvae (e.g. Family Lycaenidae) only partially eat the shell. Some species also consume their moulted external skin.

Larvae obtain most of their food from plant materials, except for a few carnivorous species such as the Ape Fly (*Spalgis epeus*). Butterfly larvae only feed on specific plants which contain the the nutritional and chemical components required for their growth and survival. Such species-specific plants are called 'butterfly larval food plants' (**LFPs**). Most butterfly larvae feed on immature leaves, but some feed on mature leaves, flowers, flower buds, fruits, seeds and aerial roots.

Some species are able to take up toxins into their bodies from these materials and retain them throughout their life cycle as a protection mechanism as these toxins make them unpalatable to predators. This is seen among species such as the Glassy Tiger (*Parantica aglea*) and the Common Rose (*Pachliopta aristolochiae*).

2.2.2 Protective mechanisms

Butterfly larvae use several methods to overcome threats from parasitoids such as wasps and predators such as birds. Parasitoids lay eggs on butterfly larvae and in turn, the parasitoid larvae devour internal parts of the butterfly larvae. When they pupate, the butterfly larvae die. Therefore, butterfly larvae use their body shape, colour and pattern along with their habits and habitats to overcome these threats.

Many nocturnal butterfly larvae are very darkly coloured and live under leaf litter during the day (e.g. Grey Pansy *Junonia atlites*). Some species such as the Sri Lankan Rose (*Pachliopta jophon*) tend to live under the surface of the leaves. Those that live on the upper surface of the leaves are green in colour to camouflage themselves against their backdrop (e.g. Lemon Migrant *Catopsilia pomona*). Others employ vibrant colours as warning to predators (e.g. Mime *Papilio clytia*). Moreover, Lycaenid larvae adopt a mutually-beneficial relationship with ants. The larvae provide the ants with 'honeydew' in return for protection from predators such as birds and lizards, and parasitoids.

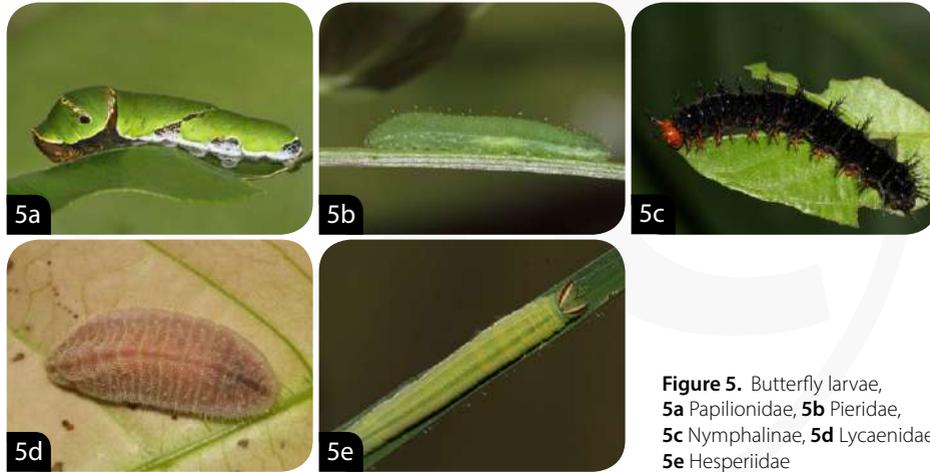


Figure 5. Butterfly larvae, **5a** Papilionidae, **5b** Pieridae, **5c** Nymphalidae, **5d** Lycaenidae, **5e** Hesperidae

2.3 Pupa

After the larva moults for the final time, it transforms into a sedentary form known as the pupa. After completing its consumption of food, the larva rests for about a day becoming shorter than before by expelling all digested materials out of its body. It uses the last segment of its body to attach itself onto a surface.

Some species even weave a thread across its thorax for additional support to reinforce its attachment to the surface. Subsequently, it moults its skin and forms a new layer of skin which encases all its bodily appendages. This process usually occurs at night time and the new skin hardens after about an hour. This pupal stage generally lasts about 10 days. As the pupae are sedentary and have a thick, protective outer skin, threats from predators during this phase are lower. Even so, some species also adopt precautions such as camouflage and hiding within woven leaf cells (i.e. Hesperids).

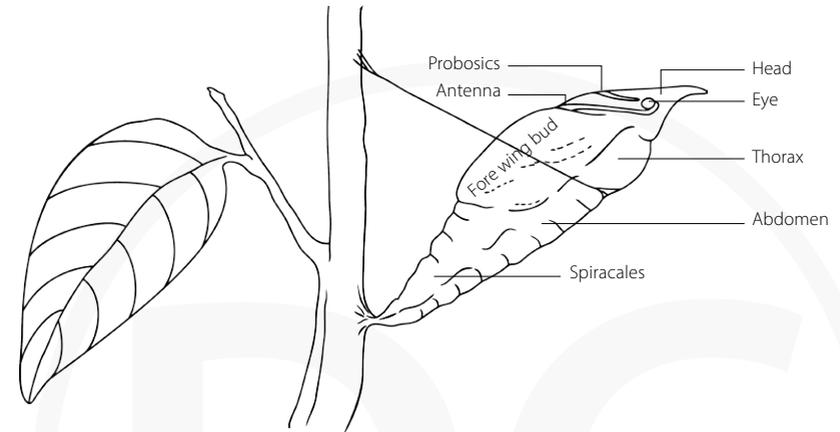


Figure 6 structure of the pupa

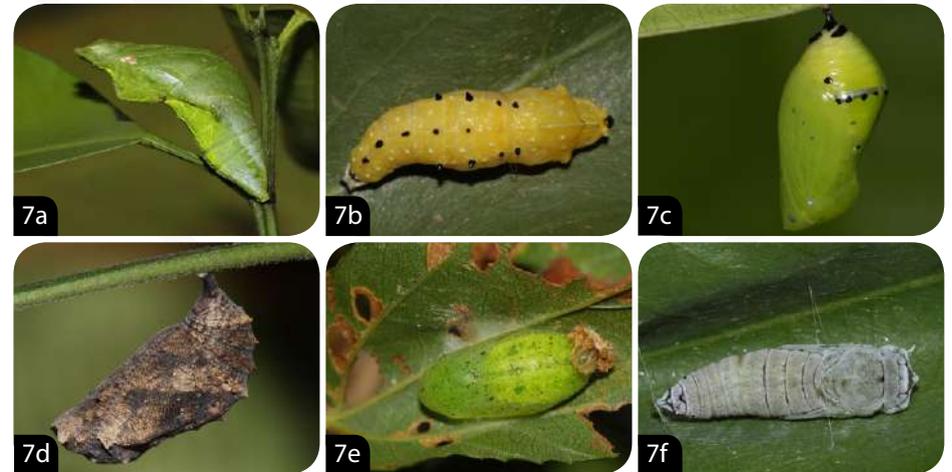


Figure 7. Butterfly pupae, **7a** Papilionidae, **7b** Pieridae, **7c** Danainae, **7d** Nymphalidae, **7e** Lycaenidae, **7f** Hesperidae

2.4 Adult butterfly (Imago)

Following a series of dramatic changes which takes place within the pupa, the adult butterfly is ready for emergence. The wings and other appendages of the adult butterfly become visible through the pupal case when it is ready to come out in a process which is known as eclosion. The butterfly splits open the pupal case, typically in the early hours of the morning before predators become active. Initially, the butterfly looks peculiar due to its large abdomen and shrunken wings. The butterfly is also especially vulnerable during this period as it cannot fly yet. After emerging from the pupa, it latches onto the pupal case or any other viable surface to hang down from. This position allows for the butterfly's abdomen to deflate as its liquid contents are pumped into the veins of the wings. The butterfly then spreads its wings and the pumped liquid is solidified, giving strength to the wings. After about an hour, the butterfly is ready to fly.

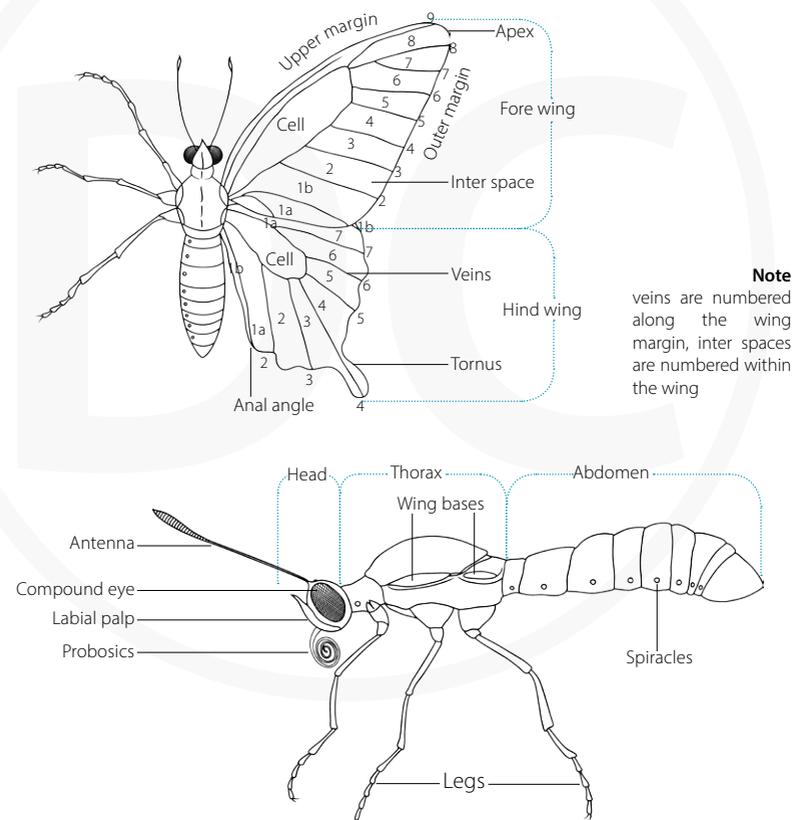


Figure 8. parts of the body of an adult butterfly

2.4.1 Food

In its final stage the butterfly mainly seeks to breed and propagate its generation while prevailing over threats from predators. Energy from food consumed by the butterfly in its final stage is channeled towards these activities rather than for physical growth. Their food intake is entirely comprised of liquid except for tiny pollen grains that may have mixed in the nectar. While butterflies are mostly seen to feed on flower nectar, they also eagerly suck on rotting fruit, tree sap, dead animals, human sweat, bird droppings and other fecal material.

Even though species have not been observed to exclusively feed on specific nectar plants, many butterflies do display a food preference. For example, the Sri Lankan Birdwing (*Troides darsius*) especially favours *Mussaenda frondosa* (මස්සවැටි) flowers. The selection of species of flowers by butterflies depends on various parameters such as flying height, feeding behavior, the length of the proboscis of the butterfly and various differences in flowers such as the length of the corolla tube, alignment and the period of anthesis (the time for which the flower is in full bloom). Butterflies also show another feeding habit dubbed mud puddling whereby they suck on wet soil to obtain minerals. While this habit is largely restricted to males, some females that belong to species which are long distance fliers also mud puddle (e.g. Sri Lankan Lesser Albatross *Appias galene*).

2.4.2 Protective Mechanisms

Even though they are sometimes brilliantly coloured, butterflies use camouflage techniques to a great extent to protect themselves against predators (e.g. Sri Lankan Blue Oakleaf *Kallima philarchus*). 'Eye spots' (Ocelli) which feature on the wings of butterflies also complement their survival in two ways. Many Nymphalid butterflies use these 'eye spots' to threaten predators, for these create the illusion of a large predator's face.

Secondly, species such as Lycaenids use the 'eye spots' to deceive predators. This spot located at the tornus (the posterior corner of the hind wing) coupled with the minute tail that resembles antennae give the misleading impression of a false head, while the butterfly's real head remains concealed. This false head is further exaggerated by the rubbing of the butterfly's wings, giving momentum to the false antennae. Predators attack this false head and if caught the butterfly is able to fly away leaving a part of its wing in the predator's mouth.

'Mimicry' is another method of deception used by butterflies for survival. These species mimic poisonous butterflies in both colouration and habits even though they are not poisonous in reality (e.g. Mimes (*Papilio clytia*) mimic Crows and Tigers). Usually, birds keep away from these butterflies.

2.4.3 Mating

Typically, depending on their species, males use three methods to find mates. The most common method is to search in proximity to their larval food plants as female butterflies do not stray far away from these (e.g. Tamil Yeoman *Cirrochroa thais*). The second is known as the 'wait and see' method, whereby the male perches in a place with a clear view of the surrounding area, and when another butterfly flies past, the male pursues the newcomer to seek out whether it is suited (e.g. Sri Lankan Blue Oakleaf *Kallima philarchus*). The most interesting of these methods, is 'hill topping' which is practiced by species that have low population numbers. These butterflies climb up an isolated hill that is surrounded by plains and meet at the summit (e.g. Tawny Rajah *Charaxes psaphon*). This is a variation from usual butterfly migration, a phenomenon which is still not completely understood. Butterfly migration is mainly seen to follow the North-East monsoon, when large swarms of butterflies fly towards the same direction within the island. It starts in the dry zone and spreads into the wet zone and the highest hills. Some butterflies can even be seen far away from their breeding grounds during this season. Migratory species are categorised as such in the detailed species profiles.

After a male locates a female, some species exhibit striking displays of courtship prior to mating. While the role of the male butterfly is complete after mating, the female still has the important task of finding the right larval food plant to lay its eggs. This plant searching behaviour can be recognised by an experienced butterfly enthusiast. When the butterfly has found a suitable plant, it chooses an appropriate place to lay its eggs; a location which varies according to species. Certain species lie on the ground nearby to protect eggs from parasitoids (e.g. Chocolate Soldier *Junonia iphita*). Eggs are attached to the surface by a sort of glue that the butterfly discharges when it lays its eggs. While many butterfly species lay multiple single eggs, some others lay eggs in batches. Even though these butterflies lay a lot of eggs, only a few survive to adulthood, as many are eaten by predators and parasitoids during the course of their lifecycle.

3. Butterflies of Sri Lanka

As Sri Lanka is an island that is geographically isolated by the Indian Ocean, there is a perceived absence of migrant butterflies from other ecologically different landmasses, which is a fairly distinct feature of countries such as India and Singapore. Some species such as the Crimson Rose have been seen flying out into sea in the outskirts of the coast, even though their final destination has not yet been identified. Due to this reason, a number of butterfly species in the country do not see an annual increase, as in the case of birds. Nevertheless, two new

species, the Yellow Palm Dart (*Cephrenes trichopepla*) and the Orange Migrant (*Catopsilia scylla*), were observed to have colonised the island recently. As the homelands of these species are quite far apart, it is suspected that these species found their way to Sri Lanka through the ornamental plant trade, in the import of various palm species and *Cassia surattensis* respectively.

At present, Sri Lanka is inhabited by 246 butterfly species, 26 of which are endemic to the island.

The classification of families used in this book is from the recent phylogenetic analysis conducted by van Nieukerken et. al. (2011), which merged three previously known Superfamilies of butterflies, skippers and moth butterflies into a single Superfamily: Papilionoidea. All the Papilionoidea families are represented in Sri Lanka, except for Hedyliidae. The arrangement of families and the species within the those families is adopted from d'Abrera (1998), since no phylogenetic sequences have been published at species level. The nomenclature of the species was adopted from van der Poorten (2014). Subsequent to a major change made in the 2012 Red Data List, the scientific name of the Beak was changed after Kawhara (2013), as it was previously identified incorrectly as *Libythea celtis* (Laicharting 1728) which referred to a butterfly from Southern Europe, Northwestern Africa, Southern Russia and Western India. Also the previously identified *Pelopidas thrax subochracea* is now classified as *P. subochracea*, *Potanthus confuscus* as *P. satra*, and *Telicota ancilla* as *T. bambusae*. The taxonomic analysis of species is still an ongoing process and some names will be subject to change. Included also is the Tamil Oakblue (*Arhopala bazaloides lanka*), a species that was long thought to be extinct, which was recently re-discovered in the wet zone lowland forests of Sinharaja and Kanneliya.

3.1 List of Butterflies of Sri Lanka

*Endemic species are denoted as (E)

Papilionidae

| | | |
|----|---|-------------------------|
| 1 | <i>Troides darsius</i> (Gray, [1853]) | Sri Lankan Birdwing (E) |
| 2 | <i>Pachliopta hector</i> (Linnaeus, 1758) | Crimson Rose |
| 3 | <i>Pachliopta jophon</i> (Gray, [1853]) | Sri Lankan Rose (E) |
| 4 | <i>Pachliopta aristolochiae</i> (Fabricius, 1775) | Common Rose |
| 5 | <i>Papilio crino</i> Fabricius, 1793 | Banded Peacock |
| 6 | <i>Papilio demoleus</i> Linnaeus, 1758 | Lime Butterfly |
| 7 | <i>Papilio helenus</i> Linnaeus, 1758 | Red Helen |
| 8 | <i>Papilio polytes</i> Linnaeus, 1758 | Common Mormon |
| 9 | <i>Papilio polymnestor</i> Cramer, [1775] | Blue Mormon |
| 10 | <i>Papilio clytia</i> Linnaeus, 1758 | Mime |

- 11 *Graphium sarpedon* (Linnaeus, 1758)
- 12 *Graphium doson* (C. & R. Felder, 1864)
- 13 *Graphium agamemnon* (Linnaeus, 1758)
- 14 *Graphium nomius* (Esper, 1785)
- 15 *Graphium antiphates* (Cramer, [1775])

- Bluebottle
- Common Jay
- Tailed Jay
- Spot Swordtail
- Five bar Swordtail

Pieridae

- 16 *Leptosia nina* Fabricius, 1793
- 17 *Delias eucharis* Drury, 1773
- 18 *Prioneris sita* (C. & R. Felder, 1865)
- 19 *Belenois aurota* (Fabricius, 1793)
- 20 *Cepora nerissa* (Fabricius, 1775)
- 21 *Cepora nadina* (Lucas, 1852)
- 22 *Appias indra* (Moore, 1857)
- 23 *Appias libythea* (Fabricius, 1775)
- 24 *Appias lycinda* (Cramer, [1777])
- 25 *Appias albina* (Boisduval, 1836)
- 26 *Appias galene* (C. & R. Felder, 1865)
- 27 *Ixias marianne* Cramer, 1779
- 28 *Ixias pyrene* Linnaeus, 1764
- 29 *Hebomoia glaucippe* Linnaeus, 1758
- 30 *Catopsilia pyranthe* (Linnaeus, 1758)
- 31 *Catopsilia pomona* (Fabricius, 1775)
- 32 *Catopsilia scylla* (Linnaeus, 1763)
- 33 *Pareronia ceylanica* C. & R. Felder, 1865
- 34 *Colotis amata* (Fabricius, 1775)
- 35 *Colotis fausta* (Olivier, 1804)
- 36 *Colotis danae* (Fabricius, 1775)
- 37 *Colotis aurora* (Cramer, 1780)
- 38 *Colotis etrida* (Boisduval, 1836)
- 39 *Eurema brigitta* (Stoll, [1780])
- 40 *Eurema laeta* (Boisduval, 1836)
- 41 *Eurema hecabe* (Linnaeus, 1758)
- 42 *Eurema blanda* (Boisduval, 1836)
- 43 *Eurema ormistoni* (Watkins, 1925)

- Psyche
- Jezebel
- Painted Sawtooth
- Pioneer
- Common Gull
- Lesser Gull
- Plain Puffin
- Striped Albatross
- Chocolate Albatross
- Common Albatross
- Sri Lankan Lesser Albatross (E)
- White Orange Tip
- Yellow Orange Tip
- Great Orange Tip
- Mottled Emigrant
- Lemon Emigrant
- Orange Migrant
- Dark Wanderer
- Small Salmon Arab
- Large Salmon Arab
- Crimson Tip
- Plain Orange Tip
- Little Orange Tip
- Small Grass Yellow
- Spotless Grass Yellow
- Common Grass Yellow
- Three Spot Grass Yellow
- Sri Lankan One-Spot Grass Yellow (E)

Nymphalidae

- 44 *Idea iasonia* (Westwood, 1848)
- 45 *Ideopsis similis* (Linnaeus, 1758)
- 46 *Tirumala limniace* (Cramer, 1775)
- 47 *Tirumala septentrionis* (Butler, 1874)
- 48 *Parantica aglea* (Stoll, 1782)
- 49 *Parantica taprobana* (C. & R. Felder, [1865])

- Sri Lankan Tree Nymph (E)
- Blue Glassy Tiger
- Blue Tiger
- Dark Blue Tiger
- Glassy Tiger
- Sri Lankan Tiger (E)

- 50 *Danaus chrysippus* (Linnaeus, 1758)
- 51 *Danaus genutia* (Cramer, [1779])
- 52 *Euploea core* (Cramer, 1780)
- 53 *Euploea sylvester* (Fabricius, 1793)
- 54 *Euploea phaenareta* (Schaller, 1785)
- 55 *Euploea klugii* Moore, [1858]
- 56 *Ariadne ariadne* (Linnaeus, 1763)
- 57 *Ariadne merione* (Cramer, 1777)
- 58 *Byblia ilithyia* (Drury, 1773)
- 59 *Cupha erymanthis* (Drury, 1773)
- 60 *Phalanta phalantha* (Drury, 1773)
- 61 *Phalanta alcippe* (Stoll, 1782)
- 62 *Vindula erota* (Fabricius, 1793)
- 63 *Cirrochroa thais* (Fabricius, 1787)
- 64 *Cethosia nietneri* C. & R. Felder, [1867]
- 65 *Argynnis hyperbius* (Linnaeus, 1763)
- 66 *Vanessa indica* (Herbst, 1794)
- 67 *Vanessa cardui* (Linnaeus, 1758)
- 68 *Kaniska canace* (Linnaeus, 1763)
- 69 *Junonia lemonias* (Linnaeus, 1758)
- 70 *Junonia orithya* (Linnaeus, 1758)
- 71 *Junonia hierta* (Linnaeus, 1798)
- 72 *Junonia atlites* (Linnaeus, 1763)
- 73 *Junonia iphita* (Cramer, 1779)
- 74 *Junonia almana* (Linnaeus, 1758)
- 75 *Hypolimnas bolina* (Linnaeus, 1758)
- 76 *Hypolimnas misippus* (Linnaeus, 1764)
- 77 *Doleschallia bisaltide* (Cramer, 1777)
- 78 *Kallima philarchus* (Westwood, 1848)
- 79 *Pantoporia hordonia* (Stoll, 1790)
- 80 *Neptis hylas* (Linnaeus, 1758)
- 81 *Neptis jumbah* Moore, [1858]
- 82 *Moduza procris* (Cramer, 1777)
- 83 *Parthenos sylvia* (Cramer, [1776])
- 84 *Symphaedra nais* (Forster, 1771)
- 85 *Dophla evelina* (Stoll, 1790)
- 86 *Euthalia lubentina* (Cramer, 1777)
- 87 *Euthalia aconthea* (Cramer, 1777)
- 88 *Rohana parisatis* (Westwood, 1850)
- 89 *Polyura athamas* (Drury, [1773])
- 90 *Charaxes solon* (Fabricius, 1793)
- 91 *Charaxes psaphon* Westwood, 1847
- 92 *Libythea laius* Trimen, 1879
- 93 *Libythea myrrha* Godart, 1819
- 94 *Acraea violae* (Fabricius, 1793)

- Plain Tiger
- Common Tiger
- Common Crow
- Double Branded Crow
- Great Crow / King Crow
- Brown King Crow
- Angled Castor
- Common Castor
- Joker
- Rustic
- Leopard
- Small Leopard
- Cruiser
- Tamil Yeoman
- Ceylon Lace Wing
- Indian Fritillary
- Indian Red Admiral
- Painted Lady
- Blue Admiral
- Lemon Pansy
- Blue Pansy
- Yellow Pansy
- Grey Pansy
- Chocolate Soldier
- Peacock Pansy
- Great Eggfly / Common Eggfly
- Danaid Eggfly
- Autumn Leaf
- Sri Lankan Blue Oak Leaf (E)
- Common Lascar
- Common Sailor
- Chestnut Streaked Sailor
- Commander
- Clipper
- Baronet
- Red spot Duke
- Gaudy Baron
- Baron
- Black Prince
- Nawab
- Black Rajah
- Tawny Rajah
- Beak
- Club Beak
- Tawny Coster

- 95 *Discophora lepida* (Moore, 1857)
 96 *Melanitis leda* (Linnaeus, 1758)
 97 *Melanitis phedima* (Cramer, [1780])
 98 *Lethe drypetis* (Hewitson, 1863)
 99 *Lethe daretis* (Hewitson, 1863)
 100 *Lethe dynsate* (Hewitson, 1863)
 101 *Lethe rohria* (Fabricius, 1787)
 102 *Orsotriaena medus* (Fabricius, 1775)
 103 *Mycalesis subdita* (Moore, 1892)
 104 *Mycalesis mineus* (Linnaeus, 1758)
 105 *Mycalesis perseus* (Fabricius, 1775)
 106 *Mycalesis rama* (Moore, 1892)
 107 *Mycalesis patnia* Moore, 1857
 108 *Ypthima ceylonica* Hewitson, 1864
 109 *Ypthima singala* R. Felder, 1868
 110 *Elymnias hypermnestra* (Linnaeus, 1763)
 111 *Elymnias singhala* Moore, [1875]

- Southern Duffer
 Common Evening Brown
 Dark Evening Brown
 Tamil Treebrown
 Sri Lankan Treebrown (E)
 Sri Lankan Forester (E)
 Common Treebrown
 Nigger / Medus Brown
 Sri Lankan Tamil Bushbrown (E)
 Dark-Brand Bushbrown
 Common Bushbrown
 Sri Lankan Bushbrown (E)
 Gladeye Bushbrown
 White Four-ring
 Sri Lankan Jewel Four-ring (E)
 Common Palmfly
 Sri Lankan Palmfly (E)

Lycaenidae

- 112 *Spalgis epeus* (Westwood, 1851)
 113 *Curetis thetis* (Drury, 1773)
 114 *Arhopala abseus* (Hewitson, 1862)
 115 *Arhopala amantes* (Hewitson, 1862)
 116 *Arhopala bazaloides* Hewitson, 1878
 117 *Arhopala ormistoni* Riley, 1920
 118 *Arhopala centaurus* (Fabricius, 1775)
 119 *Surendra quercetorum* (Moore, [1858])
 120 *Zesius chrysomallus* Hübner, 1821
 121 *Amblypodia anita* Hewitson, 1862
 122 *Iraota timoleon* (Stoll, 1790)
 123 *Catapaecilma major* Druce, 1895
 124 *Loxura atymnus* (Stoll, 1780)
 125 *Rathinda amor* (Fabricius, 1775)
 126 *Horaga onyx* (Moore, [1858])
 127 *Horaga albimaculata* Wood-Mason & de Nicéville, 1881
 128 *Cheritra freja* (Fabricius, 1793)
 129 *Spindasis lohita* (Horsfield, [1829])
 130 *Spindasis vulcanus* (Fabricius, 1775)
 131 *Spindasis schistacea* (Moore, 1881)
 132 *Spindasis ictis* (Hewitson, 1865)
 133 *Spindasis elima* (Moore, 1877)
 134 *Spindasis nubilus* (Moore, [1887])
 135 *Spindasis greeni* Heron, 1896
 136 *Tajuria cippus* (Fabricius, 1798)
- Apefly
 Indian Sunbeam
 Aberrant Bushblue
 Large Oakblue
 Tamil Oakblue
 Sri Lankan Ormiston's Oakblue (E)
 Centaur Oakblue
 Common Acacia Blue
 Redspot
 Purple Leaf Blue
 Silver Streak Blue
 Common Tinsel
 Yamfly
 Monkey-puzzle
 Blue Onyx
 Brown Onyx
 Common Imperial
 Long-banded Silverline
 Common Silverline
 Plumbeous Silverline
 Common Shot Silverline
 Scarce Shot Silverline
 Sri Lankan Clouded Silverline (E)
 Sri Lankan Green's Silverline (E)
 Peacock Royal

- 137 *Tajuria jehana* Moore, [1884]
 138 *Tajuria arida* Riley, 1923
 139 *Pratapa deva* (Moore, [1858])
 140 *Hypolycaena nilgirica* Moore, [1884]
 141 *Bindahara phocides* (Fabricius, 1793)
 142 *Virachola perse* (Hewitson, 1863)
 143 *Virachola isocrates* (Fabricius, 1793)
 144 *Rapala iarbus* (Fabricius, 1787)
 145 *Rapala manea* (Hewitson, 1863)
 146 *Rapala varuna* (Horsfield, [1829])
 147 *Rapala lankana* Moore, 1879
 148 *Deudorix epijarbas* (Moore, 1857)
 149 *Anthene lycaenina* (R. Felder, 1868)
 150 *Petrelaea dana* (de Nicéville, [1884])
 151 *Nacaduba pactolus* (C. Felder, 1860)
 152 *Nacaduba hermus* (C. Felder, 1860)
 153 *Nacaduba ollyetti* Corbet, 1947
 154 *Nacaduba berenice* (Herrich-Schäffer, 1869)
 155 *Nacaduba sinhala* Ormiston, 1924
 156 *Nacaduba kurava* (Moore, [1858])
 157 *Nacaduba beroe* (C. & R. Felder, [1865])
 158 *Nacaduba calauria* (C. Felder, 1860)
 159 *Prosotas nora* (C. Felder, 1860)
 160 *Prosotas dubiosa* (Semper, [1879])
 161 *Prosotas noreia* (R. Felder, 1868)
 162 *Ionolyce helicon* (C. Felder, 1860)
 163 *Jamides bochus* (Stoll, [1782])
 164 *Jamides coruscans* (Moore, 1877)
 165 *Jamides lacteata* (de Nicéville, 1895)
 166 *Jamides alecto* (C. Felder, 1860)
 167 *Jamides celeno* (Cramer, [1775])
 168 *Catochrysops panormus* (C. Felder, 1860)
 169 *Catochrysops strabo* (Fabricius, 1793)
 170 *Lampides boeticus* (Linnaeus, 1767)
 171 *Leptotes plinius* (Fabricius, 1793)
 172 *Castalius rosimon* (Fabricius, 1775)
 173 *Discolampa ethion* (Westwood, 1851)
 174 *Caleta decidia* (Hewitson, 1876)
 175 *Tarucus callinara* Butler, 1886
 176 *Tarucus nara* (Kollar, 1848)
 177 *Freyeria putli* (Kollar, [1844])
 178 *Zizeeria karsandra* (Moore, 1865)
 179 *Zizina otis* (Fabricius, 1787)
 180 *Zizula hylax* (Fabricius, 1775)
 181 *Talicauda nyseus* (Guérin-Ménéville, 1843)

- Plains Blue Royal
 Sri Lankan Indigo Royal (E)
 White Royal
 Nilgiri Tit
 Plane
 Large Guava Blue
 Common Guava Blue
 Indian Red Flash
 Slate Flash
 Indigo Flash
 Malabar Flash
 Cornelian
 Pointed Ciliate Blue
 Dingy Lineblue
 Large Four Lineblue
 Pale Four Lineblue
 Sri Lankan Woodhouse's Four Lineblue (E)
 Rounded Six Lineblue
 Sri Lankan Pale Six Lineblue (E)
 Transparent Six Lineblue
 Opaque Six Lineblue
 Dark Ceylon Six Lineblue
 Common Lineblue
 Tailless Lineblue
 White-tipped Lineblue
 Pointed Lineblue
 Dark Cerulean
 Sri Lankan Cerulean (E)
 Sri Lankan Milky Cerulean (E)
 Metallic Cerulean
 Common Cerulean
 Silver Forget-me-not
 Forget-me-not
 Pea Blue
 Zebra Blue
 Common Pierrot
 Banded Blue Pierrot
 Angled Pierrot
 Buttler's Spotted Pierrot
 Striped Pierrot
 Grass Jewel
 Dark Grass Blue
 Lesser Grass Blue
 Tiny Grass Blue
 Red Pierrot

- 182 *Everes lacturnus* (Godart, 1824)
 183 *Azanus ubaldus* (Stoll, [1782])
 184 *Azanus jesous* Guérin-Méneville, 1849
 185 *Acytolepis lilacea* (Hampson, 1889)
 186 *Acytolepis puspa* (Horsfield, 1828)
 187 *Celastrina lavendularis* (Moore, 1877)
 188 *Udara singalensis* (R. Felder, 1868)
 189 *Udara akasa mavis* (Horsfield, [1828])
 190 *Udara lanka* (Moore, 1877)
 191 *Neopithicops zalmora* (Butler, [1870])
 192 *Megisba malaya* (Horsfield, [1828])
 193 *Euchrysops cnejus* (Fabricius, 1798)
 194 *Chilades pandava* (Horsfield, 1829)
 195 *Chilades lajus* (Stoll, 1780)
 196 *Chilades parrhasius* (Fabricius, 1793)

Riodinidae

- 197 *Abisara echerius* (Stoll, 1790)

Hesperiidae

- 198 *Burara oedipodea* (Swainson, [1820])
 199 *Bibasis sena* (Moore, [1865])
 200 *Badamia exclamationis* (Fabricius, 1775)
 201 *Choaspes benjaminii* (Guérin-Méneville, 1843)
 202 *Gangara thyrus* (Fabricius, 1775)
 203 *Gangara lebadea* (Hewiston, 1868)
 204 *Hasora chromus* (Cramer, [1780])
 205 *Hasora taminatus* (Hübner, [1818])
 206 *Hasora badra* (Moore, [1858])
 207 *Celaenorrhinus spilothyrus* (R. Felder, 1868)
 208 *Coladenia indrani* (Moore, [1866])
 209 *Sarangesa dasahara* Moore, 1886
 210 *Tapena thwaitesi* Moore, [1881]
 211 *Tagiades japetus* (Stoll, [1781])
 212 *Tagiades litigiosa* Möschler, 1878
 213 *Caprona ransonnettii* (R. Felder, 1868)
 214 *Caprona alida* (de Nicéville, 1891)
 215 *Gomalia elma* (Trimen, 1862)
 216 *Baracus vittatus* (C. Felder, 1862)
 217 *Ampittia dioscorides* Fabricius, 1793
 218 *Thoressa decorata* (Moore, 1881)
 219 *Halpe egena* R. Felder, 1868
 220 *Halpe ceylonica* Moore, 1878

- Indian Cupid
 Bright Babul Blue
 African Babul Blue
 Hampson's Hedge Blue
 Common Hedge Blue
 Plain Hedge Blue
 Singalese Hedge Blue
 White Hedge Blue
 Sri Lankan Hedge Blue (E)
 Quaker
 Malayan
 Gram Blue
 Plains Cupid
 Lime Blue
 Small Cupid

- Plum Judy

- Branded Orange Awlet
 Orange-Tailed Awl
 Brown Awl
 Indian Awl King
 Giant Red Eye
 Banded Red Eye
 Common Banded Awl
 White Banded Awl
 Ceylon Awl
 Sri Lankan Black Flat (E)
 Tricolour Pied Flat
 Common Small Flat
 Black Angle
 Ceylon Snow Flat
 Water Snow Flat
 Golden Angle
 Ceylon Golden Angle
 African Marbled Skipper
 Sri Lankan Hedge Hopper (E)
 Bush Hopper
 Sri Lankan Decorated Ace (E)
 Rare Ace
 Ceylon Ace

- 221 *Suastus gremius* (Fabricius, 1798)
 222 *Suastus minuta* (Moore, 1877)
 223 *Iambrix salsala* (Moore, [1866])
 224 *Udaspes folus* (Cramer, [1775])
 225 *Notocrypta paralysos* (Wood-Mason & de Nicéville, 1881) Common Banded Demon
 226 *Notocrypta curvifascia* (C. & R. Felder, 1862) Restricted Demon
 227 *Hyarotis adrastus* (Stoll, [1780]) Tree Flitter
 228 *Matapa aria* (Moore, [1866]) Common Red Eye
 229 *Spialia galba* (Fabricius, 1793) Indian Skipper
 230 *Taractropera maevius* (Fabricius, 1793) Common Grass Dart
 231 *Oriens goloides* (Moore, [1881]) Common Dartlet
 232 *Potanthus pallida* (Evans, 1932) Indian Dart
 233 *Potanthus pseudomaesa* (Moore, [1881]) Common Dart
 234 *Potanthus satra* Fruhstorfer, 1911 Tropic Dart
 235 *Telicota colon* (Fabricius, 1775) Pale Palm Dart
 236 *Telicota bambusae* (Moore, 1878) Dark Palm Dart
 237 *Cephrenes trichopepla* (Lower, 1908) Yellow Palm Dart
 238 *Borbo cinnara* Wallace, 1866 Wallace's Swift
 239 *Pelopidas agna* (Moore, [1866]) Little Branded Swift
 240 *Pelopidas mathias* (Fabricius, 1798) Small Branded Swift
 241 *Pelopidas subochracea* Moore, 1878 Large Branded Swift
 242 *Pelopidas conjuncta* (Herrich-Schäffer, 1869) Conjoined Swift
 243 *Baoris penicillata* Moore, [1881] Sri Lankan Paint Brush Swift (E)
 244 *Caltoris kumara* (Moore, 1878) Blank Swift
 245 *Caltoris philippina* (Herrich-Schäffer, 1869) Philippine Swift
 246 *Parnara bada* (Moore, 1878) Smallest Swift

3.2 Distribution of Butterflies in Sri Lanka

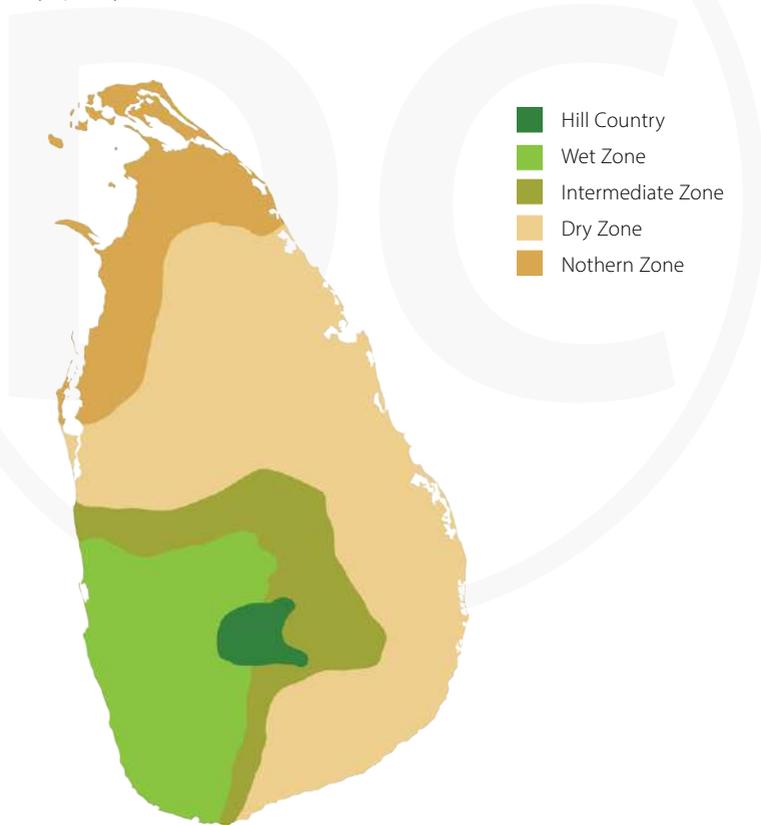
The Distribution of butterflies within Sri Lanka is predominantly determined by the distribution of larval food plants, coupled with some other secondary considerations. Sri Lanka can be divided into five major zones in relation to the distribution of butterflies.

While the hill country and wet zone bear the highest number of endemic species, an absence of endemic species in the coastal belt of the wet zone has been observed due to increased urbanisation. As such, the population variations in butterflies in the wet zone are hardly noticeable, with only a slight drop in numbers during May to July, when the rainfall is at its highest. Meanwhile, in the hill country, the butterfly population is distinctly high in the first half of the year, diminishing in the later months, and sometimes vanishing entirely during misty spells.

The dry zone is inhabited by a different set of butterflies that also show marked seasonal population fluctuations. In this area, butterflies start to fly en masse after the North-Eastern monsoonal rains begin in late October. This peak remains until the end of March and keep decreasing until August-September, when it becomes difficult to find butterflies except in wet forest habitats such as in the immediate catchment area of reservoirs.

The intermediate zone, where the three aforementioned wet, dry and hill country zones merge, bears the highest number of butterfly species. This zone contains species that are found in the other zones, save for those species adapted to specific conditions. Some species prefer this confluence habitat far more than the the other zones (e.g. Autumn Leaf - *Doleschallia bisaltide*, Beak - *Libythea laius*). A favorable season also persists in this area from late October, lasting until late May and sometimes extending up to June.

Sri Lanka's northern region is inhabited by dry zone butterflies together with some species that are confined to thorny scrublands habitats. As in the dry zone, the butterfly season in this zone peaks with the beginning of the rains, but ends fairly quickly.



3.3 Threats to Butterflies and their Conservation

The main threat to butterflies, along with other wildlife at large, is the loss of their natural habitat. While the complete destruction of a habitat is apparent to any person, habitat degradation also poses a considerable threat to small species like butterflies. These delicate butterflies require tremendously specific micro habitat conditions for their survival. Over-exposure to sunlight caused by tree felling, adjustments to the chemical composition of their feeding material due to pesticides, changes to population dynamics caused by unexpected weather conditions, and alterations to habitats caused by invasive plant species inherently influence the survival of these species.

From a conservation point of view, butterflies can be divided into two categories. The most significant of these are the category of butterflies that need very specific habitat requirements in pristine forest habitats. In Sri Lanka, these habitats are consistently diminishing, and the conservation of these spaces is of prime importance. The second category of butterflies does not need such specific conditions, and these can be conserved even within human habitations through the introduction of slight adjustments to the environment.

Any butterfly enthusiast can easily take part in conservation processes focused on the second category. Firstly, one could gather knowledge about the butterflies in and around ones area, both by reference and more importantly, individual field studies. These activities can help with gaining a considerable understanding of butterflies and how one's home garden can be adapted to attract them by planting suitable larval food plants and nectar plants, and avoiding the use of chemical pesticides. Through this, one can carry on learning about butterflies even at home, and will no doubt provide extraordinary satisfaction. Those who are interested in further engaging with the protection of butterflies can actively participate in conservation processes for threatened species.

3.4 The Study of Butterflies

The most important thing one needs to study butterflies is the desire and commitment to learn about these tiny, fascinating creatures. Keen eyes and an analytical mind are necessary to further explore ones observations and environment. If a butterfly is disturbed, the chance of studying its activities is lost and any efforts at doing so will come to an end. It is important to wear dull-coloured clothing to better blend into the environment. It is also good practice to bring a note book and a pencil to the field note down any observations. This will no doubt help in analysing data collected, and in comparing field notes with published information, or even discussing observations with fellow-enthusiasts.

3.5 How to use this Book

This book contains individual descriptions of 100 selected species of butterflies. Many of these species are found in human settlements, while a few others are found in the wild. Descriptions contain information on how to identify adult butterflies including distinguishing features, sexual and seasonal differences, and their habits and habitats. Some details on larval food plants have also been provided, and the distribution of these butterflies has been illustrated with the use of maps. It is also necessary to note that butterflies are not evenly distributed in the areas shown in the maps, but are found in suitable habitats within these marked areas.

Sizes

- L Large**: Wing span \geq 100 mm
- M Medium**: 100 mm $>$ wingspan \leq 60 mm
- S Small**: 60 mm $>$ wingspan \leq 30 mm
- T Tiny**: 30 mm $>$ wingspan

Colour Code

- Papilionidae
- Pieridae
- Nymphalidae
- Lycaenidae
- Riodinidae
- Hesperiidae
- Endemic
- LFPs

Red Data Status

The following data for the species have been included based on records for 2012
EX Extinct, **CR** Critically Endangered, **EN** Endangered, **VU** Vulnerable,
NT Near Threatened, **LC** Least Concerned, **DD** Data Deficient, **NE** Not Evaluated

Extinct | Threatened | Lower Risk

Upper
Male
Female
Lower
Captions of illustrations

Illustrations

Endemic

Family name
Family colour code

Size

Red Data Status

Common name
Scientific name
Physical characteristics
Habits
Habitats and distribution

LFPs
Larval food plants
Scientific name
Common Sinhala name

Distribution map
More Abundant
Absent
Less Abundant



An active researcher in the field of ecology, Himesh Jayasinghe BSc. Engineering (Hons.) is a graduate of the University of Moratuwa. Encouraged by his father, a wildlife enthusiast, Himesh cultivated a special interest in butterflies and their conservation from a young age as a member of numerous environmental associations. Himesh is the founder and president of the Butterfly Conservation Society of Sri Lanka (2013-14), the first author of 'A Pocket Guide to the Butterflies of Sri Lanka' and The Story of Sri Lankan Butterflies website.

Dilmah Conservation was initiated in 2007 by Dilmah to incorporate environmental conservation efforts into the MJF Charitable Foundation, which focuses on social justice. Dilmah Conservation works towards the sustainable use of the environment in partnership with various governmental and non-governmental organisations. The pledge made by Dilmah founder Merrill J. Fernando to make business a matter of human service is deeply ingrained in the work carried out by Dilmah Conservation. For additional information visit our website at:

www.dilmahconservation.org



ISBN 978-955-0081-13-4

