

# George M. van der Poorten and Nancy E. van der Poorten (2016). THE BUTTERFLY FAUNA OF SRI LANKA.

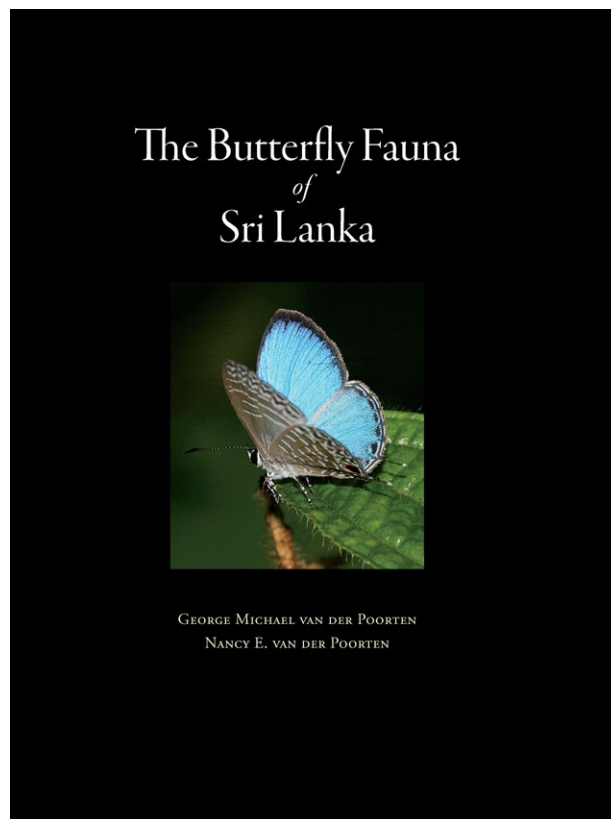
Lepodon Books, Toronto, Canada. vi + 418 pp, 416 figs. (see note in text), 3 tables

The small island of Sri Lanka lies only 30 km from the southeastern coast of India, yet out of its 247 species of butterflies, 31 are endemic and 84 are represented by endemic subspecies. With a dense human population that has lived there for thousands of years, the conservation of this fauna is a challenge. Thus, despite the existence of several books on the island's butterfly fauna (e.g., Woodhouse, 1949; D'Abrera, 2000), the authors decided that an additional book, with a particular focus on the biology and conservation of the fauna, was warranted. The result is a richly illustrated book that draws upon the authors' many years of field research, during which time they documented at least some information for every species on the island, compiled a distribution database of 30,000 records, and compiled immature stage information for 219 species.

The book begins with a series of introductory chapters before tackling the six families of butterflies present in Sri Lanka. Chapter 1 briefly reviews the age of butterflies and the possible origins of Sri Lanka's fauna, followed by the history of study of Sri Lankan butterflies. The authors note that butterflies have likely been declining in the region for many years, and describe several eye-witness reports from early last century of vast swarms of migrating butterflies that would be 'unimaginable today'. They describe the island's topography and climate, and habitats where butterflies occur. Chapter 2 briefly touches on the origins of common and scientific names of butterflies, and concludes with a much longer, thorough, absorbing and splendidly illustrated discussion of the butterfly life cycle and biology.

Chapter 3 focuses on conservation, describing the threats butterflies face and the recent assessments of Sri Lankan butterfly threat status using IUCN categories. Evidently the most recent assessment was conducted by the Sri Lankan Ministry of Environment, resulting in a total of 108 species being listed as threatened. This assessment was apparently based just on the status of the species in Sri Lanka – many widely distributed species that happen to be local or rare in Sri Lanka are considered threatened, whereas I assume that only a small fraction of those, which are endemic to the island, are globally threatened. The chapter concludes with an encouraging section on butterfly gardening.

Chapter 4 introduces the species accounts which occupy the remaining 90% of the book. Each family receives an introduction of several pages summarizing the distinguishing characters, biology, taxonomic diversity and conservation issues of the group. Subsequently, each species is treated on a full page, illustrated by photographs of live butterflies showing dorsal and ventral surfaces. Supplementary images of the immature stages, hostplants, nectar sources, and habitats, make many accounts extend onto additional pages. The images are simply stunning, crisp, beautifully color-balanced, well organized and reflecting an extraordinary amount of time and dedication in the field.



Gaudy Baron (*Euthalia lubentina psittacus*)



Fig. 7-48. Gaudy Baron (*Euthalia lubentina psittacus*). a) male feeding on fallen jak fruit (*Artocarpus heterophyllus*), upperside; b) male feeding on fallen jak fruit, underside; c) female feeding on fallen jak fruit, upperside; d) female, underside; e) female, upperside; f) female laying egg on leaf of *Dendrothopha falcata*; g) final instar larva on scarred leaf of *D. falcata*; h) beetle feeding on young leaf of *D. falcata*.

Wingspan: 60–80 mm

■ **Description (Fig. 7-48):** This gorgeous butterfly is seldom seen despite the abundance of its larval food plants, the mistletoes (Loranthaceae). Fresh individuals of both sexes show a lovely iridescent sheen on the upperside. Its brilliant colors are not evident in flight because the butterfly flies so swiftly. Even when settled, the colors take life only when viewed at the appropriate angle in the proper light. Both sexes appear grayish-blue or grayish-green when viewed at other angles. The male is much smaller than the female.

■ **Similar species:** In flight it may be mistaken for the Baron.

■ **Status, distribution and habitat:** This endemic subspecies is rare (1) and though a few fly throughout the year, most sightings have been from July to September. It is widely distributed in the intermediate zone and the wet zone up to about 1500 m asl. It favors mid-elevations from 400–700 m asl and inhabits forests and well-wooded home gardens. Threat status: VU.

■ **Adult behavior:** Its behavior is similar to that of the Baron, but it prefers to live higher up in the canopy or subcanopy where it is often difficult to see, which also contributes to its scarcity. Both sexes descend to the ground now and again to feed on fallen fruits, or to suck up moisture from seepages and edges of streams when conditions are very dry. When settled, it is shy and any sudden movement nearby drives it away instantly.

■ **Immature stages:** The female lays its eggs singly on the upperside of a leaf of the larval food plants, usually 3–5 m above the ground. Plants that grow high up in the canopy where winds are strong are seldom used for egg-laying, probably because branches

of mistletoe, being brittle, break off easily. In the intermediate zone, the female selects tattered and scarred leaves for egg-laying. The scarring of the mature leaf is brought about by a small beetle when it feeds on the expanding leaves. As the leaves age, the grooves and holes left behind dry up and turn brown to give the leaves their characteristic scarred appearance—these are the leaves the female eagerly seeks for egg-laying. Leaves without beetle injury are seldom used. Whether the female uses mostly scarred leaves of mistletoe in the other climatic zones is not known. Once a suitable leaf is found, the female clings to the leaf, vertically or nearly so, with its head pointing up, and lays a single egg. The egg is superbly camouflaged and almost indistinguishable from the myriad blotches on the leaves. Under a hand lens, however, the egg is seen to be a beautifully sculptured multi-faceted dome with amber-colored projections that terminate in sticky droplets. The droplets probably act as a defense against parasitoids by trapping them on contact.

The newly emerged larva is armed with four rows of long black spines and two rows of light-colored knobby spines along the length of its amber-colored body. It feeds on its eggshell on emergence, and in the first instar, it rests in a characteristic manner with its body curled up and its head touching the thorax, or nearly so. The dorsal spines of the larva, like the droplets of the egg, are sticky, and probably trap small parasitoids and prevent eggs being laid on the larva, as they do for the egg. Reared larvae often had their droppings attached to these spines, but we were unable to determine if this was accidental or if the larva deliberately placed them for better camouflage.

In the third instar, the larva develops long much-branched black and yellow dorsolateral spines, and a row of brown dorsal spots which are retained until the larva pupates. At this stage,

**Pale Palmdart (*Telicota colon kala*)**

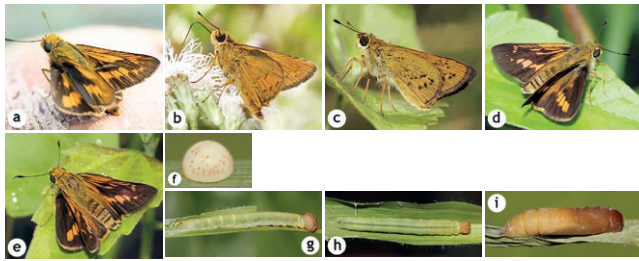


Fig. 5-49. Pale Palmdart (*Telicota colon kala*). a) male, upperside; b) male feeding on nectar of *Chromolaena odorata*, underside; c) female, upperside; d) female, underside; e) egg; f) larva, final instar, lateral view; g) larva, final instar, dorsal view; h) pupa.

Wingspan: 32–36 mm

■ **Description (Figs. 5-49, 5-50c, d):** It is very similar in appearance to the Dark Palmdart. In the male, the sex brand on the upperside of the forewing consists of three broad streaks that are situated closer to the upper margin of the black band within which they lie; on the upperside of the forewing, the yellow streaks from the postdiscal band run along the veins to the termen. In the female, these yellow streaks do not extend to the termen along the veins, but the markings in the cells below vein M3 have their lower edges produced slightly; the markings on the upperside are much smaller, enhancing the black ground color and making the butterfly appear darker.

■ **Similar species:** Dark Palmdart—see under that species. All other Darts are smaller.

■ **Status, distribution and habitat:** The species is rare (5), but appears to fly year-round. It is confined to the hills of the Uva, Sabaragamuwa provinces and the drier parts of the Central province. A few are occasionally encountered at lower elevations. Ormiston (1924) recorded it as “plentiful” in Haldummulla and had observed it in Galle and Wellawaya. Woodhouse (1949) wrote that it was found “all over the island, all the year round, below 5000 feet”. Its range within the island has certainly contracted since historical times. Threat status: NT.

■ **Adult behavior:** Its behavior is similar to that of the Tropic Dart except that it inhabits grasslands and large open meadows.

■ **Immature stages:** Its immature stages are similar to those of the Dark Palmdart except that it feeds on grasses instead of bamboo

though the species of grass has not yet been identified. Ormiston (1924) recorded that it fed on sugarcane. The mature larva has a light brown head and is more yellowish than the larva of the Dark Palmdart, while the pupa is paler.

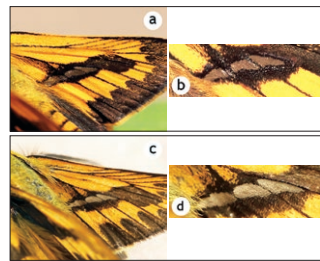
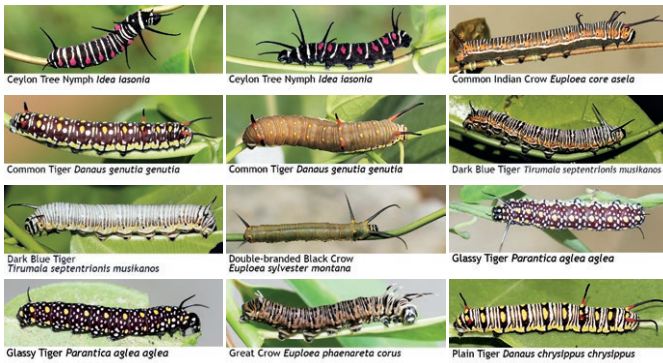
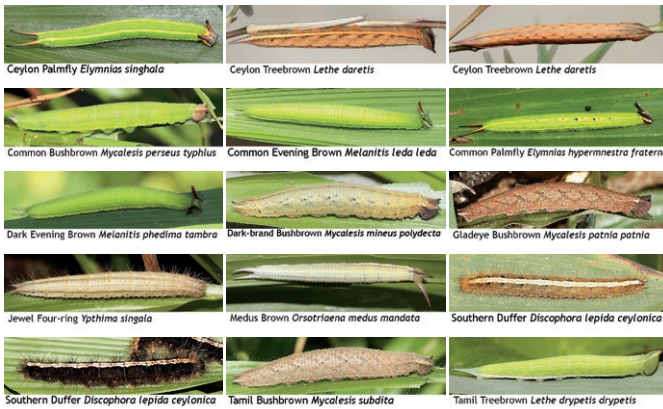


Fig. 5-50. Differentiating male Dark Palmdart and male Pale Palmdart by wing pattern and sex brand. a)–b) Dark Palmdart (*Telicota bambusae ianka*); orange-colored scales do not extend to margin; sex brand lies closer to the lower margin of the black band within which it lies. c)–d) Pale Palmdart (*Telicota colon kala*); orange-colored scales extend to margin; sex brand lies closer to the upper margin of the black band within which it lies.

**Larvae: Nymphalidae: Danainae (Fig. F-11) (continued)**



**Larvae: Nymphalidae: Satyrinae (Fig. F-12)**



Each ‘figure’ actually contains multiple photographs, such that the 416 figures in the book contain many thousands of different images. My guess is that most or all of the immature stage images represent newly documented life histories, in which case this book contains a treasure trove of new data, especially for the Hesperidae and Lycaenidae. The accounts include concise, informative sections on identification, status, distribution and habitat, with a number indicating the approximate number of individuals that might be seen in one day, an intriguing and potentially very useful quantitative measure of abundance. Further sections describe adult behavior, immature stages, and conservation issues. An extremely welcome and valuable feature is the frequent presentation of plates comparing similar species in complex groups such as the skippers and blues, with arrows indicating diagnostic characters.

Following the species accounts are *ca.* 70 pages of Appendices. An annotated list indicates the habitats and endemic status of each species, followed by a notes section which explains the taxonomy adopted wherever potentially controversial. There follow lists of works on Sri Lankan butterflies, larval hostplants and the species that feed on them, nectar sources, and fascinating historical accounts of large numbers of Sri Lankan butterflies. Then, tucked away almost at the end of the book, is Appendix F, consisting of 30 plates with probably more than a thousand images of eggs, larvae and pupae. This gorgeous compilation of flawless images is just astounding, breath-taking. Standardized views allow easy comparison among species, either for identification or potentially for coding characters for a phylogenetic study. Finally, the book concludes with glossary, reference list and index.

In summary, this is a beautifully crafted, fabulously illustrated work on the biology, conservation and identification of Sri Lankan butterflies, with an absolute wealth of information. For those with broader interests in the immature stages and the natural history of Asian butterflies, it will prove invaluable.

LITERATURE CITED

D’Abrera, B. 1998. *The Butterflies of Ceylon*. Wildlife Heritage Trust, Colombo. 224 pp.  
 Woodhouse, L. G. O. 1949. *The Butterfly Fauna of Ceylon*. Second Complete Edition. The Colombo Apothecaries’ Co. Ltd., Colombo.

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