

New distribution and larval food plant records of the Bright Forest-blue (*Paradipsas cephenes* (Hewitson, 1874)) from eastern Australia

Michael F. Braby^{A,B}, Ethan P. Beaver^{A,B} and Cleveland D. Herd^C

^AThe Australian National Insect Collection, CSIRO, Canberra ACT 2601, Australia. Email: michael.braby@anu.edu.au

^BDivision of Ecology and Evolution, Research School of Biology, The Australian National University, Acton ACT 2601, Australia.

^C170 Wairere Rd, Boorolite Vic 3723, Australia.

Abstract

The Bright Forest-blue (*Paradipsas cephenes* (Hewitson, 1874)) (Lepidoptera: Lycaenidae) is endemic to eastern Australia and has an obligatory association with the ant *Anonychomyrma gilberti*. The butterfly was recorded from Mackay in central Queensland 126 years ago, but has not been observed there since 1899. However, in 2025 we recorded it from a new location at Eungella, ~70 km W of Mackay, providing confirmation of this important intervening central population in the geographical range of the species. The shrub *Clerodendrum floribundum* R.Br. (Lamiaceae) is recorded as a larval food plant from Kuranda, Qld. This new host record adds to the list of six other families of plants eaten by the larvae of this polyphagous species.

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The Bright Forest-blue (*Paradipsas cephenes* (Hewitson, 1874)) (Theclinae: Luciini) (Fig. 1) is endemic to eastern Australia. It was previously known by the scientific name *Pseudodipsas cephenes* (Hewitson, 1874), but was transferred to the monotypic genus *Paradipsas* Braby, 2025 by Braby *et al.* (2025) on morphological and phylogenetic grounds. The species has a disjunct distribution, with a northern population restricted to upland and montane areas in the Wet Tropics biome of north-eastern Queensland (Valentine & Johnson 1988; Eastwood 1995), and a southern population confined to the lowland subtropics of south-eastern Queensland and north-eastern New South Wales (Miller & Morhaus 1975; Braby 2000). Braby *et al.* (2025) listed an intervening central population at Mackay, Qld, based on three historical specimens collected in 1899, but noted that there had been no positive records of the species from this area for over 120 years. Thus, these authors suggested that the central population

may no longer be extant. Here, we record the species from a new location approximately 70 km W of Mackay.

A female was photographed by EPB on the Eungella Dam Road approximately 3.5 km SSE of Eungella, QLD (-21.16167, 148.50070) on 13 February 2025 at 1044 hrs AEST. The following day we re-visited the site and a female (Fig. 1), presumably the same specimen observed the previous day, was collected by MFB at 1030 hrs AEST. She had settled low down on foliage in a narrow roadside strip of degraded upland rainforest along a ridge at 750 m asl with invasive plants. The site was surrounded by cleared farmland, but substantial patches of remnant rainforest grew on the adjacent slopes within 800 m to the east and west of the site. No attendant ants were present at the site, and it is suspected that the female had dispersed from the nearby patches of rainforest. The specimen was of



Figure 1. Female Bright Forest-blue (*Paradipsas cephenes*) collected from 3.5 km SSE of Eungella, QLD, 750 m asl, 14 February 2025 (ANIC Database No. 31 085470): (A) dorsal surface; (B) ventral surface. Scale bar = 5 mm.

the summer, or wet season, form (see Braby *et al.* 2025).

Comparison of this specimen with material from the Wet Tropics and subtropics indicates that it most closely resembles the northern rather than the southern population in that the iridescent blue areas are more extensive on both wings. We were not able to locate a breeding population of *P. cephenes* at Eungella, but colonies of the attendant ant *Anonychomyrma gilberti* were found breeding in intermediate-growth trees of *Eucalyptus saligna* Sm. (dbh: 200–320 mm) and *Eucalyptus grandis* W.Hill (dbh: 300–400 mm) (Myrtaceae) growing in mixed tall open-forest at Crediton State Forest 5 km S and 6.5 km SSE of Eungella, respectively. The butterfly specimen is accessioned in the Australian National Insect Collection, Canberra (ANIC Database No. 31 085470; DNA voucher sample NULS746690, MFB-24-D12).

The record of *P. cephenes* from Eungella provides an important intervening population in its disjunct occurrence along eastern Australia. It is not entirely clear where the original specimens of *P. cephenes* further east at Mackay were collected from by R.E. Turner during the late nineteenth century. Much of the lowland vegetation around Mackay has been cleared, primarily for sugar cane farms, so it is unlikely that the species is still extant in the lowland district.

Further work is needed to determine the larval food plant of this isolated central population. Monteith (1974) and Braby (1994, 1995) noted that

the mountains of the Clarke Range have been neglected by butterfly collectors, and this still very much remains the case. For example, the Coral Jewel (*Hypochrysops miskini* Waterhouse, 1903) is obligatorily associated with the same ant, *Anonychomyrma gilberti*, and has a similar disjunct distribution to *P. cephenes*, but the species is currently not known from Mackay or the Clarke Range hinterland (Tennent & Müller 2025).

The larvae of *P. cephenes* feed on soft, new leaves of predominantly pioneer or forest edge species, and available data suggests it is polyphagous, feeding on the foliage of at least six plant families (Braby *et al.* 2025). Documented larval food plants include *Smilax australis* R.Br. (Smilacaceae), *Acacia flavescens* A.Cunn. ex Benth and *Acacia sophorae* subsp. *sophorae* (Labill.) R.Br. (Fabaceae), *Guioa acutifolia* Radlk. (Sapindaceae), *Diospyros fasciculosa* (F.Muell.) F.Muell. (Ebenaceae), *Halfordia kendack* (Montrouz.) Guillaumin (Rutaceae), and *Cyclophyllum coprosmoides* (F.Muell.) S.T.Reynolds & R.J.F.Hend. (Rubiaceae) (Smales & Ledward 1942, 1943; Lane 1985, 1999; Valentine & Johnson 1988, 1989; Braby 2000; Moss 2020).

We record an additional larval food plant for the species. Several larvae were found by CDH feeding on the foliage of shrubs of *Clerodendrum floribundum* R.Br. (Lamiaceae) growing in rainforest edge on Black Mountain Road, Kuranda, Qld, on 11 February 2016. No pupae were found on the food plant, but 13 were collected from within curled dead leaves in the leaf litter at the base of the plant. The attendant ant,

Anonychomyrma gilberti, was abundant and attending the pupae, from which 10 adults were reared in captivity. Additional larvae were found and reared on the foliage of the food plant during subsequent visits. The record of *C. floribundum* provides a new larval food plant for *P. cephenes* at both the species and family levels. *Paradipsas cephenes* is now known to feed on eight species of plants from seven families.

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