

## New location records for some butterflies of the Top End and Kimberley regions

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### Abstract

We report 52 new locations in north-western Australia for 22 species of butterfly. Six records are of three species rarely reported in the region, the Fiery Jewel *Hypobryops ignita*, the Two-spotted Line-blue *Nacaduba biocellata* and the Long-tailed Pea-blue *Lampides boeticus*. Records of the Orange Ringlet *Hypocysta adiante*, Spotted Pea-blue *Euchryops cnejus* and Small Dusky-blue *Candalides erinus*, species previously reported as occurring patchily in north-western Australia, are sufficient to suggest that they occur throughout the region. The ease with which new location records were obtained beyond the Darwin area suggests that much remains to be learned about the distribution of butterflies in the remoter parts of north-western Australia.

### Introduction

For butterflies, generic Australia-wide distribution maps covering all species have been available for over three decades (Common & Waterhouse 1981, and earlier editions). Dunn and Dunn (1991) mapped over 90 000 specimen records continent-wide. More recently, Braby (2000) has presented updated generic distribution maps incorporating Dunn and Dunn's data set and other records. Nevertheless, Braby noted that "In many cases, gaps in the ranges shown .... do not necessarily reflect natural disjunctions". Braby goes on to name the arid zone, but surprisingly not the monsoon tropics, as a primary area of deficient reporting.

Knowledge of invertebrate distributions has traditionally been and largely remains based on collections, with the exception of a few distinctive species (e.g. Wilson *et al.* 2003). The value of observational records for an entire faunal group has been amply demonstrated for birds (Blakers *et al.* 1984, Barrett *et al.* 2003), both of which have spawned numerous subsidiary analyses (e.g. Franklin *et al.* 2000, Griffioen & Clarke 2002). However, harnessing such records is dependent upon the ability to accurately identify species in the field, a process that for butterflies in Australia has been enhanced by the production of a handbook (Braby 2000) and more recently, a field guide (Braby 2004). Braby acknowledges the use of "recording" as well as collections

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in the preparation of his maps, and Puccetti (1991) provided a tangible example of the value of observation-based recording of butterflies.

In this note, we present records of butterflies observed in the Top End and Kimberley region of monsoonal northern Australia which are *c.* 100 km or more beyond the ranges mapped by Braby (2000).

## Methods

Butterfly records were obtained during formal surveys and as incidental sightings: (1) during brief visits to the Victoria River District (Northern Territory) and Kununurra area (Western Australia) by BM and MM in May and August 2003; (2) during a 3-day survey of the butterfly fauna of Elsey National Park and vicinity by DF, BM and others in May 2004; and (3) in brief explorations of the butterfly fauna incidental to other research, during a series of expeditions to remoter parts of north-western Australia, including sub-coastal areas of the Gulf of Carpentaria, northern Arnhemland, and central and north Kimberley, during the dry season of 2004 (DF).

All the species reported here are, with appropriate experience, readily identified as adults either in the field or in the hand, skills that we have developed intensively over the last three years during surveys in the vicinity of Darwin. Records of lycaenids are based on either close examination of netted specimens, or in a few cases, close examination of individuals at rest in the field. Most of our nymphalid records, along with the sole papilionid record, are based on sightings of butterflies in flight or at rest. In all cases, we have given due consideration to possible alternate identifications based on species known to occur in north-western Australia (Braby 2000), and in most cases, we had prior familiarity with both the species reported and of similar species. Unfamiliar species and most lycaenids were checked in the field against the illustrations of Braby (2000), the identification process being enhanced by a field key developed by one of us (DF) based primarily on the descriptions, identification notes and illustrations in Braby (2000). The field guide of Braby (2004) was not available during the study period. We have excluded records where there might be a reasonable call for a confirmatory voucher specimen (e.g. many HesperIIDae).

We have not attempted to identify individuals to subspecies level. With the possible exception of the Fiery Jewel *Hypochrysops ignita*, it seems unlikely that information about subspecies, were it available, would be of particular interest because the records presented here are nested within more general distributions that involve only a single subspecies.

## Results

Fifty-two new locations involving 22 butterfly species are summarised in Table 1, including 41 records of 19 species in the Northern Territory and 11 records of seven species in Western Australia. Two species observed in Western Australia, the Dusky

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Knight *Ypthima arctous* and Chocolate Argus *Junonia bedonia*, were not reported from that state by Braby (2000), but Grund and Hunt (2001) reported both species from Kalumburu and considered the Dusky Knight to be "common" there. Most locations were in the order of 100-200 km beyond areas indicated by Braby (2000), with the greatest being a c. 600 km range extension west-south-westwards for the Chocolate Argus. The record of the Long-tailed Pea-blue *Lampides boeticus* at Gove Peninsula is a c. 400 km range extension from previous reports near Borroloola and Darwin.

## Discussion

Three of the observed species, the Two-spotted Line-blue *Nacaduba biocellata*, Long-tailed Pea-blue and Fiery Jewel, are uncommonly reported from any location in monsoonal north-western Australia (Braby 2000), being more widespread in inland, southern and/or eastern Australia. The Two-spotted Line-blue has been previously reported in the region from only the vicinity of Darwin and in the catchment of the Prince Regent River in Western Australia. However, our four new localities suggest that it may be much more widespread, as suggested by Braby, with its small size resulting in it being readily overlooked. The Fiery Jewel has previously been reported in the Northern Territory from several locations in the vicinity of Darwin, and once each from the vicinity of Katherine and in east Arnhemland. The single, striking individual reported here from Kakadu National Park was observed from about 1 metre for several minutes as it perched on the foliage of an understorey sapling in tall woodland of Darwin Stringybark *Eucalyptus tetradonta* and Darwin Woollybutt *E. miniata* that had not been burnt for several years. The Long-tailed Pea-blue is more widely dispersed in the region than the previous two species, but nevertheless uncommonly so. In addition to the report in Table 1 from Gove Peninsula, DF observed it closer to previously reported occurrences, at El Questro Station in Western Australia, where two individuals were seen and one netted in green grass near the bank of the Pentecost River.

The remaining 19 species are widespread in parts of monsoonal north-western Australia (Braby 2000), and most are fairly common to abundant in the Darwin area (pers. obs.). The records presented here are thus not particularly surprising. Some, however, may provide basis for more comprehensive generalisations about distributions. The numerous locations for, and frequent abundance of the Orange Ringlet *Hypocysta adiante*, Spotted Pea-blue *Euchrysops cnejus* and Small Dusky-blue *Candalides erinus*, including many records not listed here because they were in or close to previously reported occurrences (Braby 2000), suggest when combined with Braby's distribution maps that these species occur more or less throughout the tropical savannas of north-western Australia. At many of the sites where we observed the Small Dusky-blue, its food plants – several species of dodder-laurel (*Cassytha*) – were also prevalent. Numerous sightings of the Chocolate Argus suggest a similarly widespread distribution for the Top End of the Northern Territory at least.

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**Table 1.** New location records for some Top End and Kimberley butterflies. Checklist order, scientific nomenclature, and common names follow Braby (2000). NT = Northern Territory; WA = Western Australia; VRD = Victoria River District (NT). Bracketed dates are inclusive periods where dates of individual sightings were not noted. Notes enclosed thus " " are extracts from DF's diary.

Family / species / location	Date	Notes
<b>Papilionidae</b> <i>Cressida cressida</i> (Clearwing Swallowtail)		
NT: Gove Pen. - Daliwuy 12°21'S, 136°55'E	(10-16)/7/04	"common in woodland"
<b>Nymphalidae</b> <i>Melanitis leda</i> (Evening Brown)		
WA: El Questro Stn. - Amalia Gorge 15°57'S, 128°02'E	14/8/2004	"sheltering on ... ground ... in heavy shade"
<b>Nymphalidae</b> <i>Mycalesis sirius</i> (Cedar Bush-brown)		
NT: Central Arnhem Rd 145 km from Nhulunbuy c. 12°45'S, 136°14'E	9/7/2004	one, in creekline grass
NT: Liverpool R. crossing, Oenpelli- Maningrida Rd 12°21'S, 134°07'E	20/7/2004	one, in floodplain grass
<b>Nymphalidae</b> <i>Ypthima arctous</i> (Dusky Knight)		
WA: Ellenbrae Stn 15°59'S, 127°04'E	3/8/2004	one
WA: Barnett River Gorge 16°32'S, 126°07'E	13/8/2004	one
<b>Nymphalidae</b> <i>Hypocysta adiante</i> (Orange Ringlet)		
NT: Lorella Springs Stn Hstd 15°44'S, 135°39'E	12/6/2004	moist grass near creek
NT: Limmen Nat. Pk - Butterfly Springs 15°38'S, 135°28'E	14/6/2004	in moist grass near creekline
NT: Central Arnhem Rd, 145 km from Nhulunbuy c. 12°45'S, 136°14'E	9/7/2004	one, grass near creek
NT: Central Arnhem Road at Flat Rock Ck c. 12°55'S, 135°20'E	17/7/2004	one, grass near creek
WA: Barnett River Gorge 16°32'S, 126°07'E	13/8/2004	
WA: Bamboo Ck, Gibb River Rd. 15°53'S, 127°21'E	13/8/2004	creekline
<b>Nymphalidae</b> <i>Polyura sempronius</i> (Tailed Emperor)		
NT: Victoria River Roadhouse 15°37'S, 131°07'E	14/8/2003	
<b>Nymphalidae</b> <i>Cethosia penthesilea</i> (Orange Lacewing)		
NT: Ramingining area c. 12°15'S, 134°58'E	c. 6/7/2004	
<b>Nymphalidae</b> <i>Junonia hedonia</i> (Chocolate Argus)		
NT: Wollogorang Stn - Settlement Ck 17°13'S, 137°56'E	10/6/2004	2 or 3 in one creekside location
NT: Lorella Springs Stn Hstd 15°44'S, 135°39'E	(12-13)/6/04	
NT: Roper Bar 14°43'S, 134°31'E	16/6/2004	"fairly common ... upper ... floodplain forest"
NT: Gove Pen. - Gayngaru 12°11'S, 136°47'E	11 & 14/7/04	"locally very common"
WA: Adcock Gorge 16°55'S, 125°46'E	12/8/2004	"one at swampy creek"
<b>Nymphalidae</b> <i>Tirumala hamata</i> (Blue Tiger)		
NT: Gove Pen. nr Garanhan 12°20'S, 136°56'E	10/7/2004	"one, vine-thicket"

*continued on next page*

<b>Nymphalidae</b> <i>Danaus affinis</i> (Swamp Tiger)		
NT: Limmen Nat. Pk - Towns R. fishing camp 15°02'S, 135°14'E	15/6/2004	two together, near river bank
NT: Gove Pen. - Daliwuy 12°21'S, 136°55'E	(10-16)/7/04	a few
NT: Gove Pen. - Gayngaru 12°11'S, 136°47'E	(11-14)/7/04	a few
<b>Lycaenidae</b> <i>Hypochrysops ignita</i> (Fiery Jewel)		
NT: Kakadu Nat. Pk - 25 km NE of Munmarlary 12°21'S, 132°40'E	28/8/2004	one
<b>Lycaenidae</b> <i>Arhopala centaurus</i> (Purple Oak-blue)		
NT: Gove Pen. - Daliwuy 12°21'S, 136°55'E	(10-16)/7/04	
NT: Gove Pen. - Gayngaru 12°11'S, 136°47'E	(10-16)/7/04	one
<b>Lycaenidae</b> <i>Candalides erinus</i> (Small Dusky-blue)		
NT: Eusey Nat. Pk - Mulurark 14°57'S, 133°13'E	2/5/2004	one
NT: Mataranka - Eusey Cemet. 15°04'S, 133°07'E	2/5/2004	
NT: Eusey Nat. Pk - Salt Ck 15°01'S, 133°14'E	3/5/2004	a few
NT: Caranbirini Cons. Res. 16°17'S, 136°05'E	6/6/2004	"several ... sandstone"
NT: Roper Bar 14°43'S, 134°29'E	16/6/2004	"abundant ... creekline"
NT: Gove Pen. - Daliwuy 12°21'S, 136°55'E	(10-16)/7/04	abundant
NT: Gove Pen. - Gayngaru 12°11'S, 136°47'E	(11-14)/7/04	abundant
WA: Ellenbrae Stn 15°59'S, 127°04'E	3/8/2004	
WA: Mitchell Plateau c. 14°45'S, 125°40'E	(5-6)/8/04	
<b>Lycaenidae</b> <i>Nacaduba biocellata</i> (Two-spotted Line-blue)		
NT: Jasper Gorge, VRD 16°02'S, 130°41'E	3/5/2003	
WA: Hidden Valley 15°46'S, 128°45'E	15/8/2003	
NT: nr Pine Creek 13°49'S, 131°50'E	8/6/2003	
WA: El Questro Stn 15°57'S, 128°02'E	16/8/2004	a few in creekbed
<b>Lycaenidae</b> <i>Prosotas dubiosa</i> (Purple Line-blue)		
NT: nr Jasper Gorge, VRD 16°00'S, 130°39'E	4/5/2003	
<b>Lycaenidae</b> <i>Catopyrops florinda</i> (Speckled Line-blue)		
WA: Ellenbrae Stn 15°59'S, 127°04'E	3/8/2004	one
<b>Lycaenidae</b> <i>Lampides boeticus</i> (Long-tailed Pea-blue)		
NT: Gove Pen. - Gayngaru 12°11'S, 136°47'E	14/7/2004	one
<b>Lycaenidae</b> <i>Zizeeria karsandra</i> (Spotted Grass-blue)		
NT: Jasper Gorge, VRD 16°02'S, 130°41'E	3/5/2003	
<b>Lycaenidae</b> <i>Zizina labradus</i> (Common Grass-blue)		
NT: Nhulunbuy & Gayngaru 12°11'S, 136°47'E	(11-14)/7/04	lawn & grassy area
<b>Lycaenidae</b> <i>Famegana alsulus</i> (Black-spotted Grass-blue)		
NT: Jasper Gorge, VRD 16°02'S, 130°41'E	3/5/2003	
NT: nr Wollongorang Stn Hstd 17°13'S, 137°57'E	10/6/2004	
NT: Gove Pen. - Daliwuy 12°21'S, 136°55'E	(10-16)/7/04	"fairly common"
<b>Lycaenidae</b> <i>Euchrysops cnejus</i> (Spotted Pea-blue)		
NT: nr Wollongorang Stn Hstd 17°13'S, 137°57'E	10/6/2004	locally abundant
NT: Lorella Springs Stn 15°44'S, 135°39'E	(12-13)/6/04	
NT: Roper Bar 14°43'S, 134°31'E	16/6/2004	
NT: Gove Pen. - Daliwuy 12°21'S, 136°55'E	(10-16)/7/04	"common"
<b>Lycaenidae</b> <i>Freyeria putli</i> (Jewelled Grass-blue)		
NT: Jasper Gorge, VRD 16°02'S, 130°41'E	3/5/2003	

Records from northern Arnhemland of the Cedar Bush-brown *Mycalasis sirius*, Orange Ringlet and Orange Lacewing *Cethosia penthesilea* suggest continuity across the north coast of the Northern Territory between previously reported populations in the north-western Top End and at Nhulunbuy. Records of the Orange Ringlet in Western Australia may indicate continuity between previous reports from the central-west and east Kimberley, especially as DF also observed the species at other intermediate locations closer to the previously reported populations, at Adcock Gorge and El Questro Station (see Table 1 for coordinates) and Manning Gorge (16°38'S, 125°55'E). Records of the Purple Line-blue *Prosotas dubiosa*, Spotted Grass-blue *Zizeeria karsandra*, Black-spotted Grass-blue *Famegana alsulus* and Jewelled Grass-blue *Freyeria pulli* in the Victoria River District may indicate continuity between previously-reported populations in the Kununurra area of Western Australia and those of the north-western Top End.

In the course of three years of active field study of butterflies around Darwin, neither we nor any colleagues have obtained records of species new to the area. However, upon travelling to remoter areas, new location records were very readily obtained; metaphorically, we *tripped* over interesting records. This indicates a steep decline in the intensity of previous surveys away from the main settled areas, and that very much remains to be learned about butterfly distributions in the larger portion of north-western Australia. It also indicates that skilled observers, whether amateur or professional, can contribute greatly to our geographical understanding of butterflies simply by visiting and surveying remoter areas, carefully self-vetting records for accuracy, and then placing interesting observations on the public record.

### Acknowledgements

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Sightings of the Long-tailed Pea-blue *Lampides boeticus* (left, Max Mace) and Swamp Tiger *Danaus affinis* (below, Don Franklin) near the Gulf of Carpentaria are new locations for these species.

