own white droppings. Discarded fragments of insect victims confirmed this to be the spider's ambush spot, and what surprised me when I bent down to put my nose close to the spider (I don't always recommend this) was the distinct smell of rotting flesh. I found a second spider and decided to take both back to Sydney to learn something of their ways.

At home the spiders settled on leaves in my glasshouse, surrounding themselves with the same kind of 'bird dropping' camouflage. The rancid smell was still evident and I guessed it to be an attractant for specific insect prey. This was more or less confirmed when between them the two spiders caught several carrion flies and small cockroaches.

Meanwhile I found that the spider had already been discovered and named *Phrynarachne* ('toad spider'? surely not!) *decipiens*, with a distribution in South East Asian countries as well as tropical Australia. I was intrigued to find that its original name was *Ornithoscatoides decipiens*, which translates aptly if loosely as "deceptively like bird shit". In Australia it has the unedifying common name of "turd spider". And I found that its use of smell to attract victims was already well known, which is a pity as I might otherwise have achieved fame as the first female spider sniffer.

Photo Densey Clyne

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New and overlooked distribution records for the Common Grass Blue, *Zizina otis labradus* (Godart) (Lepidoptera: Lycaenidae), in eastern Australia - *Kelvyn L. Dunn*

Introduction

The Common Grass Blue (*Zizina otis* F.) is usually plentiful wherever it occurs (Dunn et al. 1994) and for that reason is not hard to find – all collectors would have a pair or two for display purposes (but perhaps that is all). Historically, Waterhouse (1937: 113) wrote of *Z. otis* (then recognised as *Z. labradus*, as was the case this last decade until very recently – see Yago et al., 2008) that it is "*the commonest butterfly in Australia, being found almost everywhere...*" He reiterated that opinion a few pages later in the presidential address (p. 118), to reinforce his assertion, and remarked too, that its distribution included Tasmania. The habitat requirements of many species of butterfly can be complex and, for that reason, it is often difficult to label a species' commonality by any single means, as conservationists are well aware. Yet, Waterhouse's expert assessment – supported by the butterfly's routine presence at numerous sites over a wide distribution nationwide – has justified itself across the decades (Dunn & Kitching 1994).

Over the last 150 years or so of collector activity, encounter with this butterfly in the field has usually stirred little interest, as relatively short museum series available today would testify. It is also probably fair to say that many contemporary insect enthusiasts, and importantly, those who visit remote areas of Australia to pursue their interests, still likely pay little attention as to whether it is present or not at those sites visited. As a result, many casual sightings of this species were rarely listed in the literature or accumulated until grid- and point-mapping of butterfly species gained popularity towards the end of the 20th century (see ESV 1986, Dunn & Dunn 1991, McQuillan 1994, Dunn 2012a,b), at which time a purpose for data collation became apparent.

Decades of sampling partiality have had an accumulative effect on our knowledge of the Common Grass Blue, particularly in outback areas. The range-fill map presented for this lycaenid (see Braby 2000) shows a void in northwestern Queensland, as well as for other remote regions in northern Australia that are infrequently visited by entomological workers. (Indeed, it is the case for the Gulf Country, where the butterfly is actually widespread! – see evidence in this paper). An absence of knowledge might also apply to much of the central and desert areas of Western Australia (where the butterfly could be widespread or at least patchy), and for much of coastal Tasmania (where it is currently unrecorded, or where earlier literature that documented its presence has been overlooked). To help resolve that data paucity, I searched for this butterfly in northwestern Queensland to determine its distribution in areas where it was not previously recorded.

Methods

The survey methods I applied to gain the new distribution data require explanation; that way the species' identifications have an undercarriage of surety that will bolster their acceptance for the scientific record. Whenever required, capture of one or more adults (60% of the sample compiled in Table 1) was the means to confirm identifications with certainty. Yet close observations in the field (achieved at times when adults landed to feed at flowers or soaks (Figure 1), when they perched on herbage and grasses to monitor their habitat and flight space, or when they occasionally shaded themselves on low foliage or on ground litter beneath shrubs during hot weather) were usually equally suited for this purpose. Under my personal conservation guideline of 'least interference', I successfully identified a reasonable number of the 50 records listed (from 45 new or overlooked locations) without the requirement of handling. Those encounters recorded by 'observation-only' (40%) are marked (**Obs**.), to distinguish them from those that were captured and then released (**Rel**.) (26%) and those of the remainder that were retained as vouchers (**KLD**) (34%). Identifications were certain (Category 1) for most (75%) of the 20 'observation-only' field encounters – in each case, sufficient underwing characters were visible to achieve that level of confidence. The remaining five of the 20 'observation-only' encounters were to a level of almost certain (Category 2) as field circumstances

sometimes did not permit sufficient time or closeness to identify the species to a level 'beyond reasonable doubt', particularly where other similar looking species may be present (as is the case in the Gulf Country). These lower grade records are marked '**C2**' (see Dunn 2011 for discussion of categories of record acceptability used in the database project) and were placed as this species 'on the balance of probabilities' based on some characteristics and other circumstances of each particular sighting that strongly suggested that diagnosis (rather than another species) at the time of the event. Field photography – which can achieve identifications with certainty – may not have assisted with those five encounters due to reflective light from their silvery wing surfaces when perched in direct sun (exposure issues) and because of the brevity of those very sightings in areas where adults were scarce and thus difficult to find within the time available.

The means used to measure distances and define locations to a precision of within a kilometre of the actual site (usually measured from the Post Office of the nearest township) were outlined in a previous report in this series (Dunn 2013a); these apply similarly to this paper. A hand-held trekking device provided the coordinates of latitude and longitude for sites in Queensland. I later checked the odometer-measured road distances to each site (as calculated from the nearest road marker, where available) on Google Earth (www.google.com/earth/index.html) to confirm agreement – there was minor discrepancy for some though where large road distances were involved. The traditional means (namely, the fine examination of published road maps) provided coordinates for the older sites in Tasmania. Extended discussion of these processes, with recommendations for designating the provenance unambiguously, is available elsewhere (see Dunn 2013b) and may serve as a useful guide for would-be data contributors.

Results and Discussion

Table 1 (presented in two sections: a-b) summarises 45 noteworthy locations; these are arranged from north to south, and each location includes a geocode resolved to one minute (although those specimens retained may be labelled more precisely). Several of my older records overlooked by Braby (2000) are reiterated (to draw attention to them), and cross-referenced.

The survey findings (Table 1) would impress that *Z. otis* extends widely throughout the Gulf Country. As a sample of random field encounters, the table gives evidence of a broader distribution in northern Australia than was known. Thus, the new findings (most but not all of my encounters in this region are included, and on occasion some sites were visited more than once and not all dates may be included) add usefully to the historic literature base and those museum records that Braby (2000) used to construct his range-fill map for this particular butterfly. In addition, this species' distribution in eastern coastal Tasmania is likely to prove more extensive than Braby (2000) had indicated and more extensive than this reiterated data set would currently provide for. Focussed survey along the western coast of Tasmania, where the butterfly

was harder to find and seemed rather localised where it was found, will almost certainly provide new information supportive of a similar expectation.

As part of that ongoing data-gathering process, I recommend that the retention of some vouchers (intended for an institution in time) is a durable standard, one that authors should aim for to evidence-base *any revision* of established spatial or temporal knowledge in the scientific literature (see also Dunn 2013b). Balancing that directive, digital photography in the field can provide enough information for trustworthy identifications of various small butterflies on many occasions (albeit this may take more time to achieve adequately than does the capture of specimens) and remain usable to others if archived in databases. Finally, field-based identifications by skilled observers usefully augment the literature base, as can those of the novice reporter, where such a writer eliminates similar co-existent species (based on documentation of characteristics seen) or where such a writer indicates an awareness of those similar species with which a species under study may coexist. That way the data gathered by observers of varying competence, and using an array of methods (rather than entirely by observation), should be trustworthy. That is to say, save those inadvertent errors that do accumulate (and which take time detect, and gather evidence of, for their ultimate removal) and thus will unlikely distort the scientific record that has been so carefully compiled from museum holdings for the most part.

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Key to Table 1a-b

*1 – reiterated location (see Dunn 1995: 28); although Braby (2000) cited this location in the body text, it appears to be outside the range provided on the accompanying range-fill map for subspecies *labradus* on the Cape York Peninsula.
*2 – fed at mud-soak, between 13:30-13:40h AEST.
*3 – adults prolific; fed at flowers of *Cullen* sp. (Verbenaceae), between 14:10-14:30h AEST.
*4 – fed at flowers of roadside herbs, probably a *Verbena* sp. (Verbenaceae), 16:25-16:30h AEST.
*5 – many fed at *Carissa lanceolata* (Apocynaceae), *Cullen* sp. and *Terminalia* sp. (Combretaceae) from 09:00-09:30h AEST (on joint visit with T. Woodger; these nectar hosts identified by T. Woodger); this location is at or near boundary depicted by Braby (2000).
*6 – this location is at or near boundary depicted by Braby (2000)
*7 – this location is at or near boundary depicted by Braby (2000)
*8 – fed at flowers of *Cullen* sp. (Verbenaceae) between 1020-1055h AEST.
*9 – several seen roosted together (along with a female of *Lampides boeticus* and a small male of *Junonia villida*) on foliage near base of shrub, in shade (15:25-15:40h AEST), in riparian open woodland during very hot weather (c. 39°C) ; this location is at or near boundary depicted by Braby (2000).
*10 – reiterated location (see Dunn 1998: 38).
*11 – reiterated location (see Dunn 1999: 4).

Table 1a. Forty-five (45) new locations for *Z. otis* beyond or near the boundary of its known range in Queensland and Tasmania

Location	State	Geocode	Date	Format
Coen, in township	Qld	13°57'S, 143°12'E	27 Oct 1991 03 Nov 1991 06 Jan 2002	KLD *note 1 KLD Obs
Brannigan Creek, 31km E of Karumba	Qld	17°27'S, 141°07'E	13 Oct 2012	Obs (C2) *note 2
Karumba Point boat ramp	Qld	17°28'S, 140°50'E	13 Oct 2012	Obs
Normanton, near Travers Street, along drain	Qld	17°41'S, 141°04'E	12 Oct 2012 14 Oct 2012	Obs Obs
21km SSW of Normanton	Qld	17°50'S, 141°00'E	12 Oct 2012	KLD
Flinders River, 60km SSW of Normanton	Qld	18°10'S, 140°51'E	12 Oct 2012 14 Oct 2012	Rel KLD
Barkly Creek, 49km N of Gregory Downs	Qld	18°14'S, 139°16'E	10 Oct 2012	KLD
Gregory River, Gregory Downs	Qld	18°39'S, 139°15'E	10 Oct 2012 23 Oct 2012	Obs (C2) Obs (C2)
59km NNE of Burke & Wills Roadhouse (RH)	Qld	18°44'S, 140°30'E	14 Oct 2012	Obs (C2)
Leichhardt River, 83km NW of Burke & Wills RH	Qld	18°49'S, 139°47'E	10 Oct 2012	Obs
49km NW by W of Burke & Wills RH	Qld	18°59'S, 139°59'E	10 Oct 2012	Rel
Single Creek, 45km NW by W of Burke & Wills RH	Qld	19°01'S, 140°00'E	11 Oct 2012	Rel
Burke & Wills RH	Qld	19°14'S, 140°21'E	01 Nov 2011	KLD
Hazel Creek, at 3.6km SSW of Burke & Wills RH	Qld	19°15'S, 140°20'E	26 Oct 2012	Obs
Dismal Creek channels, 4km ESE of Burke & Wills RH	Qld	19°15'S, 140°22'E	01 Nov 2011	Rel
19km SW of Burke & Wills RH	Qld	19°22'S, 140°14'E	01 Nov 2011	KLD
Dugald River, 71km ESE of Burke & Wills RH	Qld	19°32'S, 140°51'E	31 Oct 2011	Obs (C2)
130km SE of Burke & Wills RH	Qld	19°59'S, 141°06'E	26 Oct 2012	Rel *note 3
105km NW of Julia Creek	Qld	20°00'S, 141°06'E	31 Oct 2011	KLD *note 4
Cloncurry River, 101km NW of Julia Creek	Qld	20°02'S, 141°07'E	09 Oct 2012	Obs
84km NNW of Cloncurry	Qld	20°03'S, 140°13'E	16 Oct 2012	Rel
Gilliat River, 94km NW of Julia Creek	Qld	20°05'S, 141°08'E	09 Oct 2012	Obs
Eastern Creek, 91km NW of Julia Creek	Qld	20°06'S, 141°09'E	09 Oct 2012	Obs

Table 1b. Forty-five (45) new locations for *Z. otis* beyond or near the boundary of its known range in Queensland and Tasmania (*continued*)

Location	State	Geocode	Date	Format
Express Creek, 86km NNW of Richmond	Qld	20°06'S, 142°49'E	29 Oct 2011	KLD *Note 5
3km S of Granada, on Sedan Dip road	Qld	20°07'S, 140°22'E	22 Oct 2012	Rel
86km NW of Julia Creek (township)	Qld	20°07'S, 141°11'E	31 Oct 2011	Obs
17km N by W of Quamby Hotel, on Sedan Dip road	Qld	20°14'S, 140°15'E	22 Oct 2012	Obs
Quamby Hotel, 46km NW by N of Cloncurry	Qld	20°22'S, 140°17'E	16 Oct 2012	Rel
40km NW by N of Cloncurry	Qld	20°25'S, 140°18'E	16 Oct 2012	Rel
Lake Moondarra at Transport Bay (north of Mt Isa)	Qld	20°35'S, 139°35'E	02 Nov 2011	KLD *Note 6
22km W of Julia Creek (township)	Qld	20°39'S, 141°32'E	08 Oct 2012	KLD
Julia Creek crossing, at 1.4km E of Julia Creek (township)	Qld	20°39'S, 141°45'E	31 Oct 2011	KLD *Note 7
McKinlay highway junction, at 25km W of Julia Creek (township)	Qld	20°40'S, 141°31'E	08 Oct 2012	Obs
Corella Creek, at 47km E of Julia Creek (township)	Qld	20°40'S, 142°11'E	26 Oct 2012	Rel *Note 8
Cloncurry River anabranch, at 1km W of Cloncurry	Qld	20°42'S, 144°30'E	22 Oct 2012	Rel
Mary Kathleen Mine	Qld	20°44'S, 140°00'E	17 Oct 2012	KLD
Corella River, at 45km W by S of Cloncurry	Qld	20°47'S, 140°07'E	17 Oct 2012	Rel
Elder Creek, 73km NW of McKinlay	Qld	20°49'S, 140°48'E	08 Oct 2012	Rel
64km NW of McKinlay	Qld	20°53'S, 140°51'E	08 Oct 2012	KLD
McAlister River, 49km NNE of McKinlay	Qld	20°53'S, 141°29'E	08 Oct 2012	KLD
Gilliat River channel, at 38km NNE of McKinlay	Qld	20°59'S, 141°28'E	08 Oct 2012	KLD *Note 9
Lake Burbury, at picnic/camping ground	Tas	42°06'S, 145°41'E	18 Jan 1996	KLD *Note 10
Unsigned creek crossing, at 8km W of Bicheno (nr D. Aspley NP)	Tas	41°52'S, 148°12'E	11 Mar 1996	Obs
c. 800m SW of Barbers Ck, about 8km SW of Bicheno	Tas	41°56'S, 148°14'E	11 Mar 1996	Obs *Note 11
Swanwick, 4km NW of Coles Bay	Tas	42°06'S, 148°15'E	11 Mar 1996	Obs

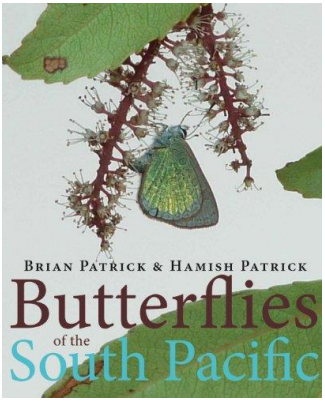
Figure 1. – Eleven adults of *Z. otis* feeding communally at a septic overflow, at a roadside rest area, at 47km ESE of Winton, in outback central Qld. (22°33'S, 143°25'E); this site is within the range-fill boundary given for the species. Photo Kelvyn Dunn

Further commentary on this feeding event, as an aside:
The interesting behaviour illustrated in this photo, although outside the thrust of this paper, is worthy of a short explanatory note. It is not a commonly seen event in coastal areas of Australia, but seems a more regular feature in the inland, particularly in tropical areas, where butterflies of several species may communally seek both moisture and soluble nutrients.

This particular feeding event took place during hot weather (circa 30°C) on 5 Oct. 2012, from 13:00 to 13:30h AEST. The adults (probably all males) fed near four other species of butterfly, namely, *Papilio demoleus* (up to seven feeding at a time), *Eurema smilax* (two feeding individually, at different times), *Belenois java* (one male) and *Junonia villida* (one). Adults of *Z. otis* (like those of *P. demoleus*) generally preferred to keep company with their own species (as shown) rather than to feed in mixed groups as might be expected if they landed at random. Of interest too, was the observation that no adults of any species fed at the pure water overflow (which was without an algal bloom), albeit located only a few metres away (and derived from

regular spillage from a rainwater tank at the facilities), during the timeframe of the visit. (A tourist at the site commented that he had seen the swallowtail butterflies (pointing to *P. demoleus*, then flying about the soak) feeding regularly since his arrival at 1000h, but he did not remark on the smaller butterflies also present at times).

BOOK REVIEW



Butterflies of the South Pacific – reviewed by *Alan Hyman*

Brian and Hamish Patrick/Otago University Press (NZ)
Hardback, 240pp ISN 978 1 877578 04 5

This 2012 publication covers 120 species (plus 24 subspecies) of butterfly recorded in the islands and archipelagos of 14 countries and territories scattered across millions of square kilometres of the South Pacific Ocean. Included are American Samoa, Cook Islands, Fiji, French Polynesia, Kiribati, New Zealand, Niue, Pitcairn Group, Samoa, Tokelau, Tonga, Tuvalu, Wallis and Futuna plus the Hawaiian Islands as a logical geographical extension. It does so within a simple yet elegant hardback volume, a little larger than A4 in size. It begins with a foreword by John Tennant (Natural History Museum, London) followed by a preface incorporating a brief geographical and historical regional background, the authors' philosophy, numerous expeditions and acknowledgments. After three pages of maps, there is an introductory chapter on butterflies, tables of the island groups with their political status, areas, taxa, endemic species and other statistics. The following five chapters are devoted to the major families, each species being covered by easy to follow descriptive text and same size (twice life size for Lycaenidae) colour photographs of set specimens. The book concludes with a section on conservation and education, appendices, glossary, bibliography and index. There is superb habitat landscape and live specimen photography throughout plus ancillary asides such as examples of thematic philately (butterflies on the region's stamps).

There is much fascinating information encompassed within these pages. For example, the Pitcairn Island butterfly fauna consists of just a single species, the Blue Moon (*Hypolymnas bolina*) which has various subspecies distributed throughout the region. Kiribati fares little better with just three, while (a surprise to me) New Zealand's total is now 55, largely due to 'new' species discerned in the distinctive Satyrinae genus *Percnodaimon* and the *Lycaena* 'Common Copper' complex. Interestingly, there are two endemic species of Red Admiral in NZ – *Vanessa gonerilla* from the three main islands and *V. ida* from Chatham Island. Since 2010, the European Large White