

TWO NEW SUBSPECIES OF *MYCALESIS TERMINUS* (FABRICIUS, 1775), FROM THE ISLANDS OF MILNE BAY PROVINCE, PAPUA NEW GUINEA (LEPIDOPTERA, SATYRINAE)

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Abstract - Based on a large number of specimens of *Mycalesis terminus* (Fabricius, 1775), collected by the author in 2010-2012, the distribution of this species on the islands of Milne Bay Province, Papua New Guinea, is discussed. Two new subspecies are described; *M. t. jacobyi* ssp. n., from Woodlark and the eastern Louisiade Archipelago, and *M. t. mitchelli* ssp. n., from the Amphlett group, north of the D'Entrecasteaux Islands. A map is provided of the distribution of *M. terminus* in Milne Bay.

Key words: Lepidoptera, Satyrinae, *Mycalesis terminus*, new taxa, Papua New Guinea, Milne Bay Province islands

INTRODUCTION

Mycalesis Hübner, 1818, is a large satyrine genus, widespread in the old-world tropics. Parsons (1998) reported 28 species occurring in Papua New Guinea, one of which, *M. sara* Mathew, 1887, was erroneously included through confusion with *M. splendens* Mathew, 1887, and *M. interrupta* Grose-Smith, 1889, a mistake promulgated by D'Abrera (1971, 1977, 1990). *Mycalesis sara* is endemic to San Cristobal island and its immediate satellites in the east of the Solomons Archipelago – it does not occur in Papua New Guinea (Tennent, 2002b). Parsons also drew attention to two unidentified *Mycalesis* species: “*Mycalesis* Species a” (now *M. mulleri* Tennent, 2000) and “*Mycalesis* Species b”, which remains undescribed. Parsons (1998: 547) regarded *M. phidon* Hewitson, 1862, as the most common and widespread *Mycalesis* species in Papua New Guinea, and noted that *M. terminus* (Fabricius, 1775), was “rare generally, but ... occasional to common locally”.

The numerous islands of Milne Bay, extending in a series of islands and archipelagos for more than 200 kilometres roughly northwards and eastwards from the main island of New Guinea, are under-recorded so far as butterflies are concerned (Tennent, 2006: 170 [note 113]). Available data on Milne Bay butterfly distribution largely results from visits by A. S. Meek in the late 19th and early 20th centuries and W. Brandt in the mid-20th century, and have previously been almost completely restricted to the larger islands of the D'Entrecasteaux group (Goodenough, Fergusson, Normanby), the Louisiades (particularly Misima, Sudest, Rossel), the Trobriands (Kiriwina), and Woodlark.

In a checklist of Pacific islands butterflies currently in the process of being updated, Tennent (2006: 70) recorded *M. terminus* from nine islands of Milne Bay (Kiriwina, Woodlark, Goodenough, Fergusson, Normanby, Egum, Misima, Sudest, Rossel) and followed Parsons (1998) in regarding *M. t. flagrans* Butler, 1876 (Figs 1-4), as occurring throughout this region. The Natural History Museum, London (BMNH) had limited material from all these islands.

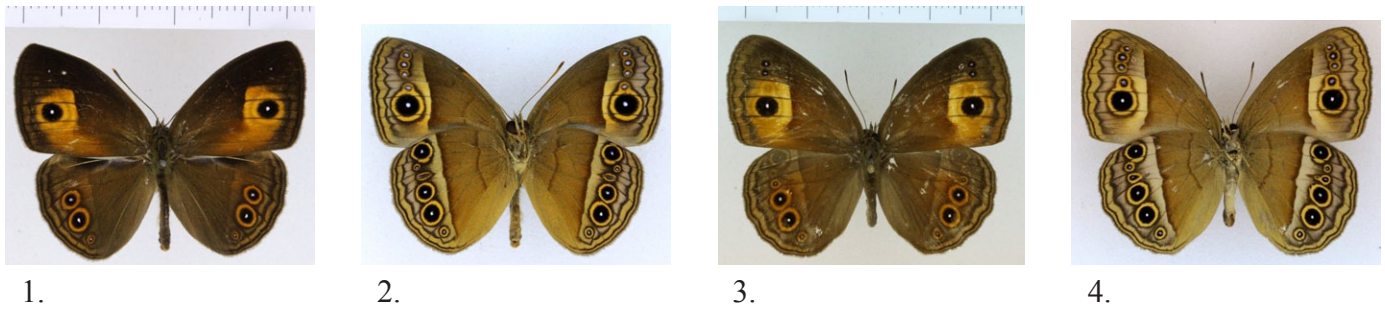
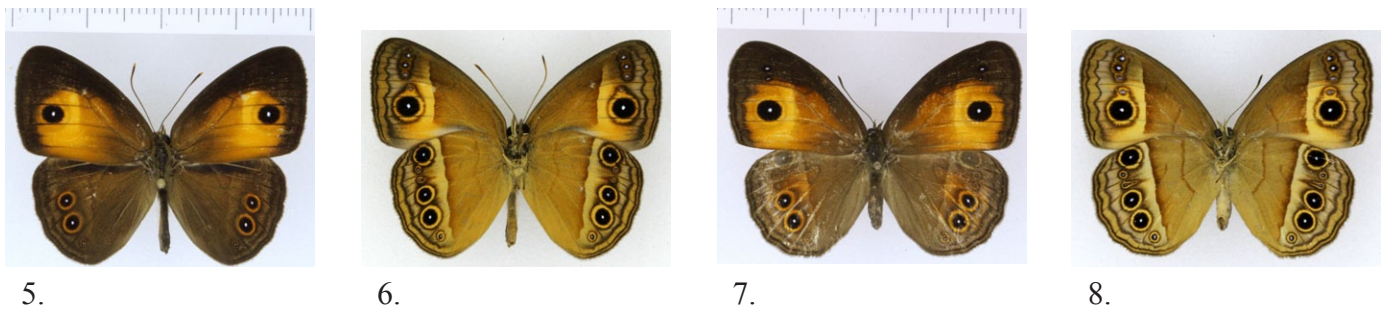
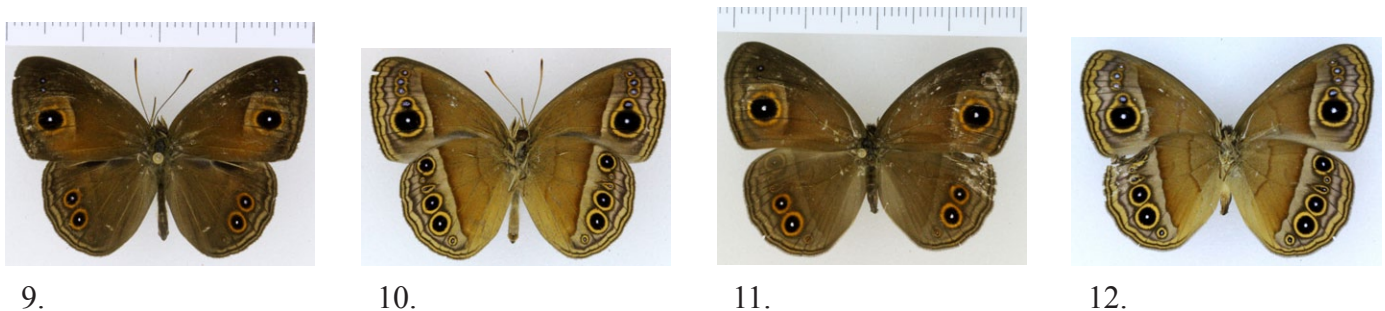
Since publication of the Pacific checklist (Tennent, 2006), the author has visited 181 islands in Milne Bay Province, recording *M. terminus* from more than 80 of them. As a result of this extensive fieldwork, two new subspecies of *M. terminus* are described here, in preparation for a comprehensive book on

the butterflies of Milne Bay Province islands.

It is noted that Kodandaramaiah *et al.* (2010) effectively transferred a number of *Mycalesis* species, including *M. terminus*, to the genus *Mydosama* Moore, 1880, based on molecular sequence data. Those authors transferred the species in their “Clade II” to *Mydosama* (type species *Dasyomma fuscum* Felder & Felder, 1860, but also agreed, in their results section, that “Relationships within these stable clades were similar, if not congruent, between analyses (an exception is the **unresolved nature** of *Mycalesis* clade II in [Maximum Parsimony])” (present author's emphasis). In the interests of nomenclatural stability, and whilst acknowledging proposed changes, the present author follows colleagues in retaining *Mycalesis* for New Guinea taxa for the time being.

Mycalesis terminus jacobyi ssp. n.
(Figs 5 – 8)

Diagnosis: Male forewing length (holotype) 23mm; upperside similar to *M. t. flagrans*, but forewing orange-yellow flush significantly more extensive; upperside ground colour fundamentally dark brown; forewing with prominent white-pupilled postdisical spot in space 3 (cells are numbered by the vein which forms the anterior border of the cell) circled with orange-yellow flush, extending basad to distinct vertical line crossing the whole of spaces 3, 4, approximately midway between ocellus and cell; darker orange (*i.e.* less yellow) extends basad and usually includes the lower half of the cell, becoming obscure at base of wing (in *M. t. flagrans* the vertical line is prominent, and orange colouration rarely extends beyond this line); orange flush extends to inner margin (less extensive in *M. t. flagrans*); hindwing like *M. t. flagrans*, with pale marginal and submarginal lines, prominent ocelli in spaces 3, 4, and a smaller, more obscure ocellus in space 2; underside ground colour brown, heavily suffused with orange-yellow (less heavily suffused in *M. t. flagrans*); markings and ocelli typical *Mycalesis*. Female often larger, like male, with extensive orange-yellow forewing flush; underside like *M. t. flagrans*, basal half brown, tinged with reddish brown adjacent to basal edge of postdical line (lacking reddish tinge in *M. t. flagrans*).

Figures 1-12: *Mycalesis terminus* – Papua New Guinea, Milne Bay Province islands.**Fig. 1-4:** *M. t. flagrans*. 1, ♂ upperside (D'Entrecasteaux, Normanby Island); 2, ditto (underside); 3, ♀ upperside (Trobriands, Biriwada Island); 4, ditto (underside).**Fig. 5-8:** *M. t. jacobyi*. 5, ♂ holotype upperside (Louisiades, Rossel Island); 6, ditto (underside); 7, ♀ paratype upperside (Calvados chain, Panantinane (=Junet) Island); 8, ditto (underside).**Fig. 9-12:** *M. t. mitchelli*. 9, ♂ holotype upperside (Amphletts, Nabwageta Island); 10, ditto (underside); 11, ♀ paratype upperside (Amphletts, Nabwageta Island); 12, ditto (underside).

Type material (76 ♂♂, 28 ♀♀): HOLOTYPE: ♂ Papua New Guinea, Milne Bay Province, eastern Louisiades, Rossel Island (northwest coast), hills west of Damunu village, 11°21.40'S / 154°00.75'E, SL-200m, 29th October 2010, John Tennent (BMNH, London); PARATYPES: 2♂♂, Woodlark. iii.iv.[18]97 (A.S. Meek); 6♂♂, Woodlark. iii.[18]97 (A.S. Meek); 1♂, S[ain]t Aigan (=Misima), Aug[ust], 1897 (Meek); 1♂, 1♀, S[ain]t Aigan (=Misima), Sept[ember], 1897 (Meek); 1♂, S[ain]t Aigan (=Misima), Oct[ober], 1897 (Meek); 1♂, S[ain]t Aigan (=Misima), Nov[ember], 1897 (Meek); 2♂♂, Rossel I[sland], Jan[uary] [18]98, (Meek); 4♂♂, 1♀, Rossel I[sland], Feb[ruary] [18]98, (Meek); 1♂, Rossel I[sland], March [18]98, (Meek); 4♂♂, 2♀♀, 2100 f[ee]t, Rossel I[sland], Nov[ember] 1915- Dec[ember] 1916 (W. F. Eichhorn); 1♂, 2100 f[ee]t, Rossel I[sland], Dec[ember] 1915 (W. F. Eichhorn); 2♀♀, Papua New Guinea, Milne Bay Province, Woodlark Island (central), Guasopa / Kulumadau Road, Nakedyag Road (and ca 5km north), 09°08.18S / 152°46.75E, 24th June 2010, John Tennent; 1♂, Woodlark Island (northwest), Nukwegai Beach to Lidai Village, 08°99.32'S / 152°55.43'E, SL-30m, 5th December 2010, John Tennent; 2♂♂, Woodlark Island, Munia Road, 09°06'S / 152°43'28"E, 7th November 2011, John Tennent; 1♂, 1♀, Milne Bay Province, eastern Louisiades, Calvados chain, Motorina Island, Lalagala Village to high point, 11°05.47'S / 152°34.33'E, SL-160m, 14th November 2010, John Tennent; 1♂, 1♀, Milne Bay Province, Louisiades (Calvados chain), Gulewa Island, 11°02'28" S / 152°30'53" E, SL-80m, 30th December 2011, John Tennent; 1♂, Milne Bay Province, Louisiades (Calvados chain), Panawidiwi Island, 11°02'34" S / 152°28'55" E, SL, 1st January 2012, John Tennent; 2♂♂, Milne Bay Province, eastern Louisiades, Calvados chain, Bagaman Island, Ulabwala village, 11°07.68'S / 152°41.34'E, SL-100, 12th November 2010, John Tennent; 3♂♂, 1♀, Milne Bay Province, eastern Louisiades, Calvados chain, Boboena Island, 11°07.25'S / 152°47.24'E, SL-80m, 12th November 2010, John Tennent; 4♂♂, 1♀, Milne Bay Province, eastern Louisiades, Calvados chain, Panangasebu Island (northwest coast), SL-60, 11th November 2010, John Tennent; 2♂♂, 2♀♀, Milne Bay Province, eastern Louisiades, Calvados chain, Panaumala Island, Visuna village, 11°08.95'S / 152°47.24'E, SL, 11th November 2010, John Tennent; 1♂, Milne Bay Province, eastern Louisiades, Calvados chain, Kuwanak Island (east), SL, 9th November 2010, John Tennent; 5♂♂, 1♀, Milne Bay Province, eastern Louisiades, Calvados chain, Panawina Island (north coast), Guntuk village, 11°11.70'S / 153°00.25'E, SL, 8th November 2010, John Tennent; 1♂, 1♀, Milne Bay Province, eastern Louisiades, Calvados chain, Panantinane (=Junet) Island, 11°17.10'S / 153°11.02'E, SL-200m, 7th November 2010, John Tennent; 2♂♂, Milne Bay Province, eastern Louisiades, Deboyne group, Panaete Island, 10°42.04'S / 152°22.42'E, SL, 17th November 2010, John Tennent; 1♂, Milne Bay Province, eastern Louisiades, Misima Island (SE), Bwagoia Station, Nulia Pioneer Plateau, 10°40.80'S / 152°50.31'E, SL-70m, 23rd October 2010, John Tennent; 1♀, Milne Bay Province, eastern Louisiades, Misima Island (SE), hills north of Bwagoia Station, 60-3000m, 5th October 2010, John Tennent; 1♂, Milne Bay Province, eastern Louisiades, Misima Island (west), Eborā area, 10°37.76'S / 152°31.49'E, SL-40m, 19th November 2010, John Tennent; 1♀, Milne Bay Province, eastern Louisiades, Misima Island (SE), Bwagoia Station area, 10°40.80'S / 152°50.31'E, SL-40m, 20th November 2010, John Tennent; 3♂♂, 3♀♀, Milne Bay Province, Louisiade Islands, Misima Island (west), Eborā to Bwaniewa, 10°37.76'S / 152°31.49'E, SL-200m, 8th January 2012, John Tennent; 1♂, 1♀, Milne Bay Province, eastern Louisiades, Sudest Island (east), west of East Point village, (on north side), 11°36.21'S / 153°46.31'E, SL-30m, 3rd November 2010, John Tennent; 1♀, Milne Bay Province, eastern Louisiades, Sudest Island (north coast), Anaethe village, 11°26'11" S / 150°26'03" E, SL-20m, 29th March 2012, John Tennent; 2♂♂, 1♀, Milne Bay Province, eastern Louisiades, Sudest Island (north coast), Anaethe village, 11°26'11" S / 150°26'03" E, SL-20m, 1st April 2012, John Tennent; 1♂, 1♀, Milne Bay Province, eastern Louisiades, Nimoa Island, (north of western Sudest), 11°18'56" S / 153°14'E, SL-60m, 27th December 2011, John Tennent; 1♀, Milne Bay Province, eastern Louisiades, Piron Island (north of Sudest), 11°19'55" S / 153°27'58" E, SL, 6th December 2011, John Tennent; 1♂, same data as holotype; 1♂, Milne Bay Province, eastern Louisiades, Rossel Island (southwest coast), east of Pwambwa village, 11°23.98'S / 154°00.70'E, SL-150m, 30th October 2010, John Tennent; 1♂, 1♀, Milne Bay Province, eastern Louisiades, Rossel Island (southwest coast), west of Pwambwa village, 11°23.98'S / 154°00.70'E, SL-150m, 31st October 2010, John Tennent; 2♀♀, Milne Bay Province, eastern Louisiades, Rossel Island (northwest coast), 11°21.35'S / 154°03.14'E, SL-180m, 1st November 2010, John Tennent; 1♂, Milne Bay Province, eastern Louisiades, Rossel Island, East Point, 11°20'39" S / 154°16'55" E, SL-20m, 18th December 2011, John Tennent; 1♀, ditto, 19th December 2011 (all BMNH, London). 2♂♂, Milne Bay Province, Louisiade Islands, Misima Island (SE), hills north

of Bwagoia Station, 60-3000m, 25th October 2010, John Tennent; 1♂, Milne Bay Province, eastern Louisiades, Misima Island (SE), Bwagoia Station area, 10°40.80'S / 152°50.31'E, SL-40m, 20th November 2010, John Tennent; 1♂, Milne Bay Province, eastern Louisiades, Sudest Island (east), west of East Point village (on south side), 11°36.21'S / 153°46.31'E, SL-20m, 2nd November 2010, John Tennent; 2♂♂, Milne Bay Province, eastern Louisiades, Sudest Island (north coast), Anaethe village, 11°26'11" S / 150°26'03" E, SL-20m, 1st April 2012, John Tennent (all Smithsonian, Washington). 2♂♂, Milne Bay Province, Louisiade Islands, Misima Island (west), Eborā to Bwaniewa, 10°37.76'S / 152°31.49'E, SL-200m, 8th January 2012, John Tennent; 2♂♂, Milne Bay Province, Louisiade Islands, Misima Island (SE), hills north of Bwagoia Station, 60-3000m, 25th October 2010, John Tennent; 1♂, Milne Bay Province, Louisiade Islands, Misima Island Misima Island, Bwagoia Station, Nulia Pioneer Plateau, 10°40.80'S / 152°50.31'E, SL-70m, 23rd October 2010, John Tennent; 1♂, Milne Bay Province, eastern Louisiades, Misima Island (west), Eborā area, 10°37.76'S / 152°31.49'E, SL-40m, 19th November 2010, John Tennent (all McGuire Centre, Gainesville).

Distribution: Papua New Guinea (Milne Bay Province). Woodlark and the islands of the eastern Louisiades, including the Calvados chain (Fig. 13).

Etymology: Named for Martin Jacoby, whose generous contribution to the costs of extensive fieldwork in New Guinea directly facilitated visits to a greater number of Milne Bay Province islands than would otherwise have been possible.

Mycalesis terminus mitchelli ssp. n.
(Figs 9 – 12)

Diagnosis: Male forewing length (holotype) 22mm; upperside similar to other races of *M. terminus*, but dull, with upperside almost completely lacking orange flush; upperside ocellus in space 3 narrowly surrounded by pale orange-yellow (circle obscured in *M. t. flagrans* due to wider orange-yellow flush); indistinct pale orange-yellow patch extending basad and towards costa (brighter and more extensive in *M. t. flagrans*); hindwing ocelli circled by pale orange-yellow (brighter in *M. t. flagrans*); underside like other races, ocelli circled by pale yellow (tinged orange in *M. t. flagrans*); submarginal/postdiscal 'band' pale, lacking yellow tinge of *M. t. flagrans*. Female upperside like other races, but yellow-orange confined to narrow circles surrounding ocelli; underside basal half brown (heavily suffused orange-brown in *M. t. terminus*); ocelli circled by pale yellow (tinged orange in *M. t. flagrans*); submarginal/postdiscal 'band' pale, lacking heavy orange-yellow tinge of *M. t. flagrans*.

Type material (50 ♂♂, 19 ♀♀): HOLOTYPE: ♂ Papua New Guinea, Milne Bay Province, Amphlett Islands, Nabwageta Island, 09°19'06" S / 150°52'15" E, SL-130m, 20th February 2012, John Tennent (BMNH, London). PARATYPES: 6♂♂, 2♀♀, same data as holotype; 10♂♂, 5♀♀, Milne Bay Province, Amphlett Islands, Gumawana Island, 09°12'45" S / 150°52'38" E, SL-150, 19th February 2012, John Tennent; 4♂♂, 1♀, Milne Bay Province, Amphlett Islands, Wamea Island, 09°14'46" S / 150°54'01" E, SL-30m, 18th February 2012, John Tennent; 7♂♂, 3♀♀, Milne Bay Province, Sanaroa Island (north of D'Entrecasteaux group), Etena and area, 09°36'46" S / 150°57'10" E, SL, 24th February 2012, John Tennent; 1♀, Milne Bay Province, Amphlett Islands, Chalata Island, 09°17'17" S / 150°42'20" E, SL, 22nd February 2012, John Tennent; 1♂, 4♀♀, Milne Bay Province, Amphlett Islands, Dilia (=Wawia) Island, 09°19'06" S / 150°52'15" E, SL-40m, 21st February 2012, John Tennent; 2♂♂, 2♀♀, Milne Bay Province, Amphlett group, Bituma (=Yabwaia) Island, SL-80m, 6th August 2010, John Tennent; 15♂♂, 1♀, Milne Bay Province, Amphlett Islands, Bituma (=Yabwaia) Island, 09°16'53" S / 150°47'28" E, SL-40m, 21st February 2012, John Tennent (all BMNH,

London). 1♂, Milne Bay Province, Sanaroa Island (north of D'Entrecasteaux group), Etena and area, 09°36'46" S / 150°57'10" E, SL, 24th February 2012, John Tennent; 1♂, Milne Bay Province, Amphlett Islands, Gumawana Island, 09°12'45" S / 150°52'38" E, SL-150, 19th February 2012, John Tennent (all Smithsonian, Washington). 1♂, Milne Bay Province, Sanaroa Island (north of D'Entrecasteaux group), Etena and area, 09°36'46" S / 150°57'10" E, SL, 24th February 2012, John Tennent; 1♂, Milne Bay Province, Amphlett Islands, Gumawana Island, 09°12'45" S / 150°52'38" E, SL-150, 19th February 2012, John Tennent (all McGuire Centre, Gainesville).

Distribution: Papua New Guinea (Milne Bay Province). Type material originates from the Milne Bay Province islands of Gumawana, Wamea, Sanaroa, Chalata, Dilia and Bituma (Fig. 13).

Etymology: Named for David Mitchell, Director, Conservation International PNG Field Programme (Asia Pacific Field Division), Alotau, whose local knowledge and friendship made travel in Milne Bay easier than it would otherwise have been. In recognition of two weeks in the Amphlett Islands in almost perfect conditions.

DISCUSSION

In common with many *Mycalesis* species, *M. terminus* is subject to a certain amount of variation, often concerning the extent of orange suffusion and the number of submarginal ocelli. Variation in New Guinea *M. terminus* is considerable, albeit rarely dramatic, although the author noted previously that "...*M. terminus* from Rossel and Misima seen in collections appear brighter, with more extensive orange markings, than specimens from Normanby" (Tennent, 2006: 175-176). This variation proved difficult to quantify due to a paucity of available study material in museums and significant gaps in the known distribution.

Recent extensive fieldwork suggests that there is a line of discontinuity west of the Engineer group of islands (in effect the western Louisiades represent an extension of the New Guinea mainland) and a weaker line east of the Engineer and Conflict groups. Although transitional individuals of all described New Guinea subpopulations of *M. terminus* can occur almost anywhere, *M. t. jacobyi* is more-or-less constant east of the Engineers. The demarcation between *M. t. flagrans* and *M. t. jacobyi* is much clearer in the north, between the Marshall Bennett group and Woodlark Island.

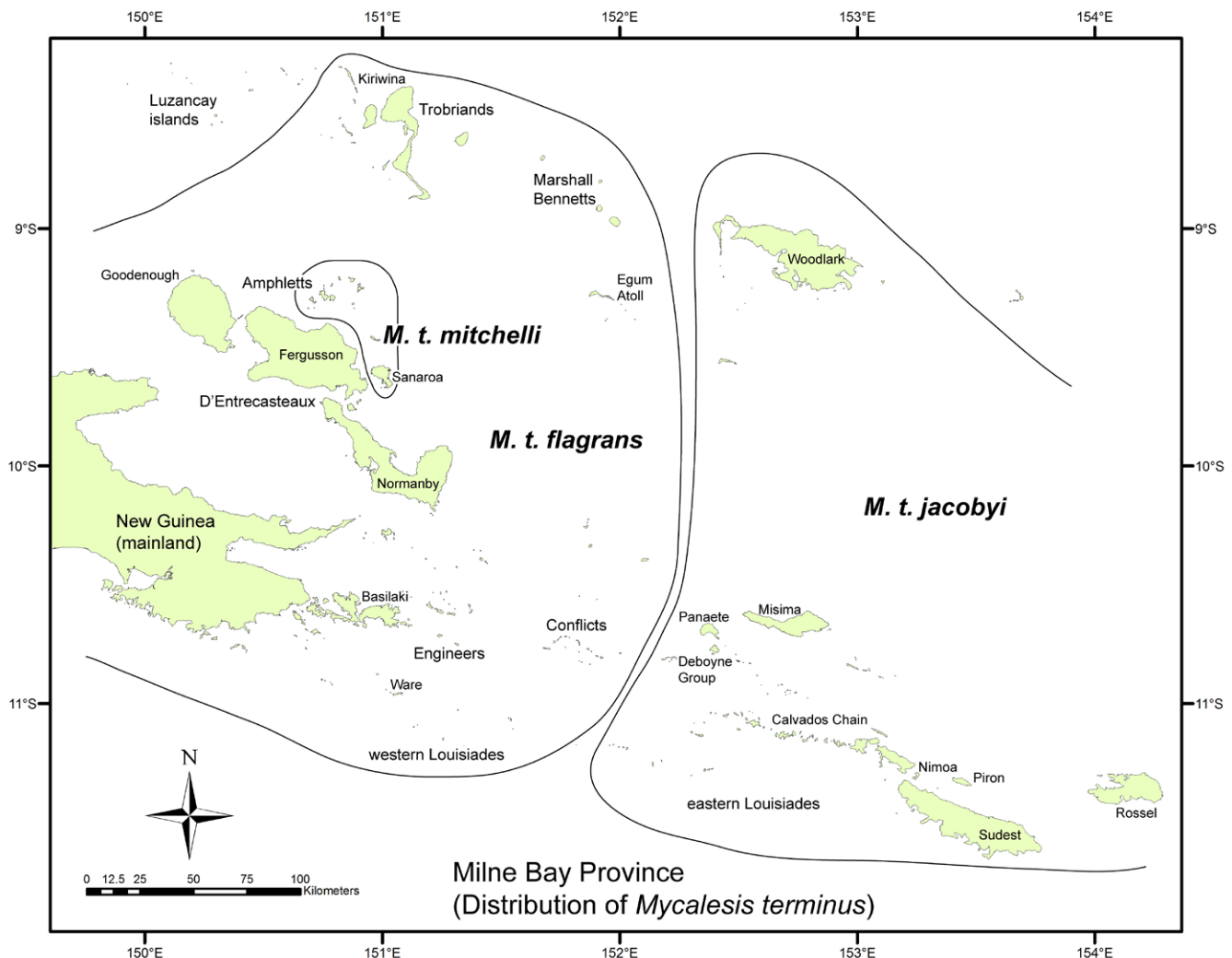


Fig. 13: Milne Bay Province (distribution of *Mycalesis terminus*).

The Amphlett islands were virtually unknown so far as butterflies are concerned before the author's recent field work, with no butterflies from any of the Amphlett islands seen in any of the many international museums visited by the author over the previous decade. The Amphletts were visited for several days in August 2010, which coincided with a period of torrential rain; the few butterflies collected on Bituma during a few hours break in the weather included two pairs of *M. terminus* which were considered at the time to represent unusually dark phenotypes or, possibly, illustrate seasonal variation. More than a week travelling around almost all of the Amphletts islands in perfect conditions in February 2012 resulted in collection of a long series, and it is clear that the *M. t. mitchelli* phenotype is constant throughout the islands, though possibly less stable on Sanaroa and some other islands in close proximity to the larger islands of the D'Entrecasteaux than on those islands in the north of the Amphlett group.

Fig. 13 illustrates the distribution of the three *M. terminus* subspecies occurring on the islands of Milne Bay.

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Without doubt, the length of time spent in Milne Bay (ca 16 months) and the number of islands visited (181) was due to the collective generosity of organisations and individuals who provided funding: National Geographic, Washington D.C. (CRE Grant # 8319-07 and GEFNE Grant # 6-11); The Linnean Society, London (Appleyard Fund); The Percy Sladen Exploration Fund, London (Linnean Society); the Natural History Museum, London (Special Funds); the Royal Entomological Society, St Albans (formerly London), the British Ecological Society, London (SEPG No 3651/4516), and Martin Jacoby, Somerset, UK.

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