A new species of *Platypthima* Rothschild & Jordan, 1905 (Lepidoptera: Nymphalidae, Satyrinae) from Papua Province, Indonesia

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Suara Serangga Papua (SUGAPA digital) 13(1): 91-97.
urn:lsid:zoobank.org:pub: A48C74C8-D5CE-47DC-8847-766C9301DB9A

Abstract: *Platypthima teeuwi* **spec. nov.**, from the Cyclops Mountains, Papua Province (Indonesia), is described and figured. The male adult and genitalia are compared with the related *P. ornata* Rothschild & Jordan, 1905 and *P. septentrionalis* Nieuwenhuis & Howarth, 1969.

Rangkuman: *Platypthima teeuwi* **spec. nov.**, dari Pegunungan Cyclops di Propinsi Papua (Indonesia), dideskripsi dan gambarnya disajikan. Gambar dari imago jantan dan genetalianya dibandingkan dengan dua spesies yang dekat, yaitu *P. ornata* Rothschild & Jordan, 1905 dan *P. septentrionalis* Nieuwenhuis & Howarth, 1969. [translation by Peter Jan de Vries]

Keywords: *Platypthima*, Cyclops Mountains, Nymphalidae, New Guinea

Introduction

Platypthima Rothschild & Jordan, 1905 is a small genus of satyrine butterflies belonging to the subtribe Coenonymphina (Kodandaramaiah et al., 2010; 2018), and is confined to mainland New Guinea and the neighbouring Goodenough Island.

Parsons (1986) separated the 'Group C' *Platypthima* species of Jordan (1924) into a new genus *Altiapa* Parsons, 1986 based on differences in the antennal length, labial palpi, wing shape and venation, as well as male and female genitalia. Parsons noted that the remaining *Platypthima* had abnormal, fan-like rounded *Harsiesis*-like brachia of the gnathos, unlike the spinose brachia of *Altiapa*. Parsons (1986) listed 11 taxa, including subspecies, under *Platypthima* and six within *Altiapa*, but Tuzov (1997) described two species of *Altiapa* from the Baliem River Valley, Papua, Indonesia and Müller and Tennent (2016) another from the Upper Sepik, Papua New Guinea.

Parsons (1998) noted that most *Platypthima* species are very localized in distribution, with most being mid to upper montane species, occurring at elevations above 1,500 m. Parsons suggested that other new species of *Platypthima* would undoubtedly be found in mainland New Guinea, and he demonstrated that some have very restricted known ranges, for example his *P. antapa* Parsons, 1986, known only from two close localities in Morobe Province, Papua New Guinea.

The Cyclops Mountains, the type and sole known locality for a new *Platypthima* taxon presented here, is now proving to be an important area of endemism, with numerous new

DOI: 10.19269/sugapa2020.13(1).06

caddisflies (Trichoptera) and also a new *Delias* (Pieridae), discovered there by the first author in recent years (Davenport et al., 2017; Oláh & De Vries, 2019).
P. teeuwi was first collected in February 2017, during an entomological collection trip on Cyclops Mountains by the first author and Mike Wild (De Vries & Wild, 2018). Later that year, the first author collected more specimens of *P. teeuwi* at the same location, namely on May 25, 2017.

Abbreviations
KSP – Koleksi Serangga Papua (Papua Insects Collection), Waena, Papua, Indonesia (former collection of Henk van Mastrigt)
NHM – Natural History Museum, London, UK
RMNH – Collection of Naturalis Biodiversity Center, Leiden, The Netherlands (former Rijksmuseum voor Natuurlijke Historie)

Systematical part

Platypthima teeuwi spec. nov. (figs 1-2, 9)

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Holotype: KSP: ♂, Indonesia, Cyclops Mountains, 1,664 m, 02 ° 31.034' S, 140° 30.539 E, 25.ii.2017, leg. P.J.A. de Vries.
Paratypes: KSP: 7 ♂♂, same as holotype.

Description: Holotype, male forewing length 21 mm; antenna length 9 mm; antenna dark brown, club black; head dark brown; palpus light brown; thorax above and beneath dark grey-brown, legs ferruginous light brown; abdomen medium grey-brown.
Forewing long, with termen much shorter than costa and inner margin; forewing upperside uniform dark brown, a large basal patch of medium grey-brown scales occupying nearly one half of spaces 1a, 1b and the cell, as well as space 2 marginally, cilia brown-black; forewing underside brown-black, with faint ferruginous scaling in the apical area, as well as a small, vestigial patch of cream-yellow scaling in the sub-apical area at the junction of veins 7 and 8; a black submarginal line faintly distinguished from dark ground colour, base with indistinct grey scaling, cilia brown-black.
Hindwing elongated, with tornus produced and inner margin concave about three-quarters from base; hindwing upperside uniform dark brown, basal half covered by medium grey-brown scales which are replaced by higher density ochreous scales towards termen, inner margin and termen in tornal area narrowly but completely ochreous, cilia brown-black; hindwing underside basal half brown-black, scattered with light grey scales, distal half of hindwing red-brown with interface demarcated by triangular red-brown markings pointing basad, interface obscured with orange and yellow scales from inner margin to end of cell, a series of six white submarginal spots in spaces 2 – 7, those in spaces 3 and 4 enclosed in black spots that are progressively ringed in yellow and black, the entire series of spots encased in an orange-brown halo, except that in space which is marginally isolated, this orange halo also encapsulated by a large halo of lustrous purple-brown which has an irregular, essentially serrated margin, termen near apical area brown, a narrow and faint yet straight red-brown subterminal line parallel to termen, cilia brown-black.

Male genitalia (fig. 9): Tegumen bulbous, pronounced dorso-laterally, approximately the same length of uncus, lateral margin weakly concave. Uncus long and arched, tapering apically in lateral view but rectangular dorsally; brachia of gnathos short and paddle-shaped, with lateral margin rounded; valva long and narrow, tapering evenly to upward pointed apex; aedeagus strongly bowed in middle, with square tip.
Female not known.

Distribution: Known only from the Cyclops Mountains, Papua Province, Indonesia.

Etymology: This species is dedicated with love and admiration by the first author/collector to his friend Marius Teeuw, who died of cancer a few months before the first author/collector encountered this new species on Cyclops Mountains: "Marius and I studied Biology together. He was a very good friend and I fondly remember the times we spend together. At a young age he fell in love with birds and he dedicated his life to studying and protecting nature. His love for and dedication to nature was a great inspiration to me."

Discussion

Platypthima teeuwi **spec. nov.** belongs to a small group within the genus with similar shape and patterns, including *P. ornata* Rothschild & Jordan, 1905, *P. septentrionalis* Nieuwenhuis & Howarth, 1969 and *P. antapa* Parsons, 1986. The new species appears to be closest to *P. septentrionalis*, which was originally described as a subspecies of *P. ornata*. Both *P. septentrionalis* and *P. ornata* occur in proximity at the type locality of the former species, near Telefomin in Sandaun Province. Parsons (1986) showed that *P. septentrionalis* is distinct from *P. ornata*, the type being a male, not a female as described by Nieuwenhuis & Howarth (1969). *Platypthima teeuwi* is the only species in the group known to occur outside of Papua New Guinea.
The new species is close to *P. septentrionalis*, being of similar size, but is distinct in several respects. The configuration of the subterminal hindwing underside spots in spaces 2, 3 and 4 is very constant in *Platypthima*. The two spots in spaces 3 and 4 (their size and degree of white in the centre versus the yellow iris) is contrastingly different in *P. teeuwi* compared to *P. septentrionalis*, with a greater proportion of black versus yellow in the latter species. Additionally, the ochreous suffusion of the new species, versus the grey of *P. septentrionalis*, is unique. The margin 'interface' between the red-brown postmedian band and the cream is very irregular, triangular and diffuse compared to *P. septentrionalis*, in which this boundary is nearly straight and sharp. *Platypthima ornata* is a smaller insect than others in the fore-mentioned group and is easily separated from the others by the extensive grey-white areas on the upperside.
The male genitalia of *P. teeuwi* are similar to those of *P. septentrionalis* and *P. ornata*, but the brachia of the gnathos are much simpler in geometry, being 'paddle' shaped. They are also notably swept back, compared to either *P. septentrionalis* or *P. ornata.* The shape of the uncus, in dorsal view, is uniquely rectangular and subtly anvil shaped towards the apex unlike the dorsally spatulate uncus of other *Platypthima* taxa. The shape of the valvae of *P. teeuwi* are distinct, with those of the new species being narrower and more evenly tapered than those of either *P. septentrionalis* or *P. ornata*.
P. teeuwi adults were found resting on bamboo shoots in a small clearing, between 1-5 meters high. When the sun was shining, they were actively flying, with short periods of rest on leaves or branches. They had a predictable general flight path circulating the bamboo

DOI: 10.19269/sugapa2020.13(1).06

plant, but their flight itself was medium-fast and erratic, which made them hard to catch. Even in rest they were constantly moving: they shuffled on the spot, rubbed their wings together and opened their wings occasionally. When the sun was not shining, they were inactive, hid their forewings under their hindwings and were almost invisible. They were not seen further away than a few meters from the bamboo plant and they were only found in this one location and its immediate surroundings on Cyclops Mountains.

Acknowledgements

The discovery of this species was enabled by the late Henk van Mastrigt, whose passion for butterflies first inspired the first author to collect butterflies, and by Mike Wild who rekindled this interest and first launched the plan to survey Cyclops Mountains. The first author also expresses his appreciation to his son David and his friend Habel Molonggatun, for joining him on this survey. The authors thank Michael Parsons for providing the photograph of the *P. septentrionalis* holotype (housed in RMNH) and John Tennent for the photograph of the *P. ornata* syntype (housed in the NHM).

We are grateful to the trustees of the Natural History Museum (NHM), the Naturalis Biodiversity Center (NBC) and the Koleksi Serangga Papua (KSP), for permission to reproduce photographs of specimens in their collections.

References

Davenport, C., Pequin, O. & De Vries, P.J.A., 2017. *Delias maaikeae*, a new species from the Cyclops Mountains, Papua, Indonesia (Lepidoptera: Pieridae). *Suara Serangga Papua (SUGAPA digital)* 10(2): 84–88.

De Vries, P.J.A. & Wild, M., 2018. Report of a recent entomological collection trip on Cyclops mountain (Indonesia, Papua). *Suara Serangga Papua (SUGAPA digital)*, 11(1): 47-52.

Jordan, K., 1924. On *Hypocysta* and some allied genera of Satyrinae from New Guinea and the Solomon Islands. *Novitates Zoologicae* 31: 270–297.

Kodandaramaiah, U., Braby, M.F., Grund, R., Müller, C.J. & Wahlberg, N., 2018. Phylogenetic relationships, biogeography and diversification of Coenonymphina butterflies (Nymphalidae: Satyrinae): intercontinental dispersal of a southern Gondwanan group? *Systematic Entomology* 43: 798–809.

Kodandaramaiah, U., Peña, C., Braby, M.F., Grund, R., Müller, C.J., Nylin, S. & Wahlberg, N., 2010. Phylogenetics of Coenonymphina (Nymphalidae: Satyrinae) and the problem of rooting rapid radiations. *Molecular Phylogenetics and Evolution* 54: 386–394.

Müller, C.J. & Tennent, W.J., 2016. A new species of *Altiapa* Parsons, 1986 from Papua New Guinea (Lepidoptera: Nymphalidae: Satyrinae). *Tropical Lepidoptera Research* 26(1): 19–24.

Nieuwenhuis, E.J. & Howarth, T.G., 1969. 0n some butterflies from the Indo-Pacific region. Entomologische Berichten 29: 85–88.

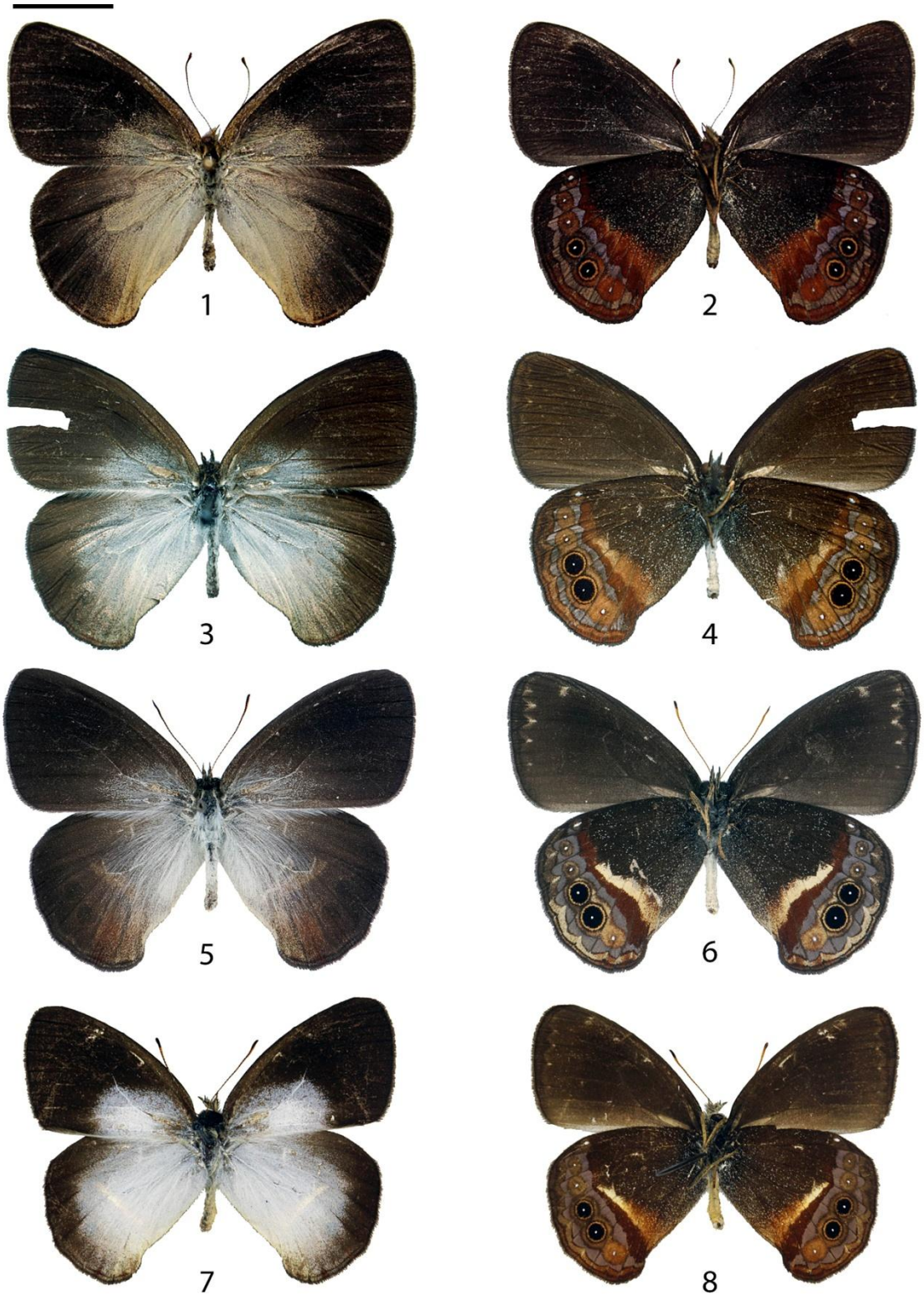
Oláh, J. & De Vries, P.J.A., 2019. On the Trichoptera of the Cyclops Mountains (Papua, Indonesia). *Suara Serangga Papua (SUGAPA digital)* 12(1): 8–46.

Parsons, M.J., 1986. A new genus and twenty-six new species of butterflies (Lepidoptera, Hesperiidae, Lycaenidae, Nymphalidae) from Papua New Guinea and Irian Jaya. *Tyô to Ga* 37(3): 103–177.

Parsons, M.J., 1998. The Butterflies of Papua New Guinea. Their systematics and biology. London, Academic Press. xvi + 736 pp., 136 pls.

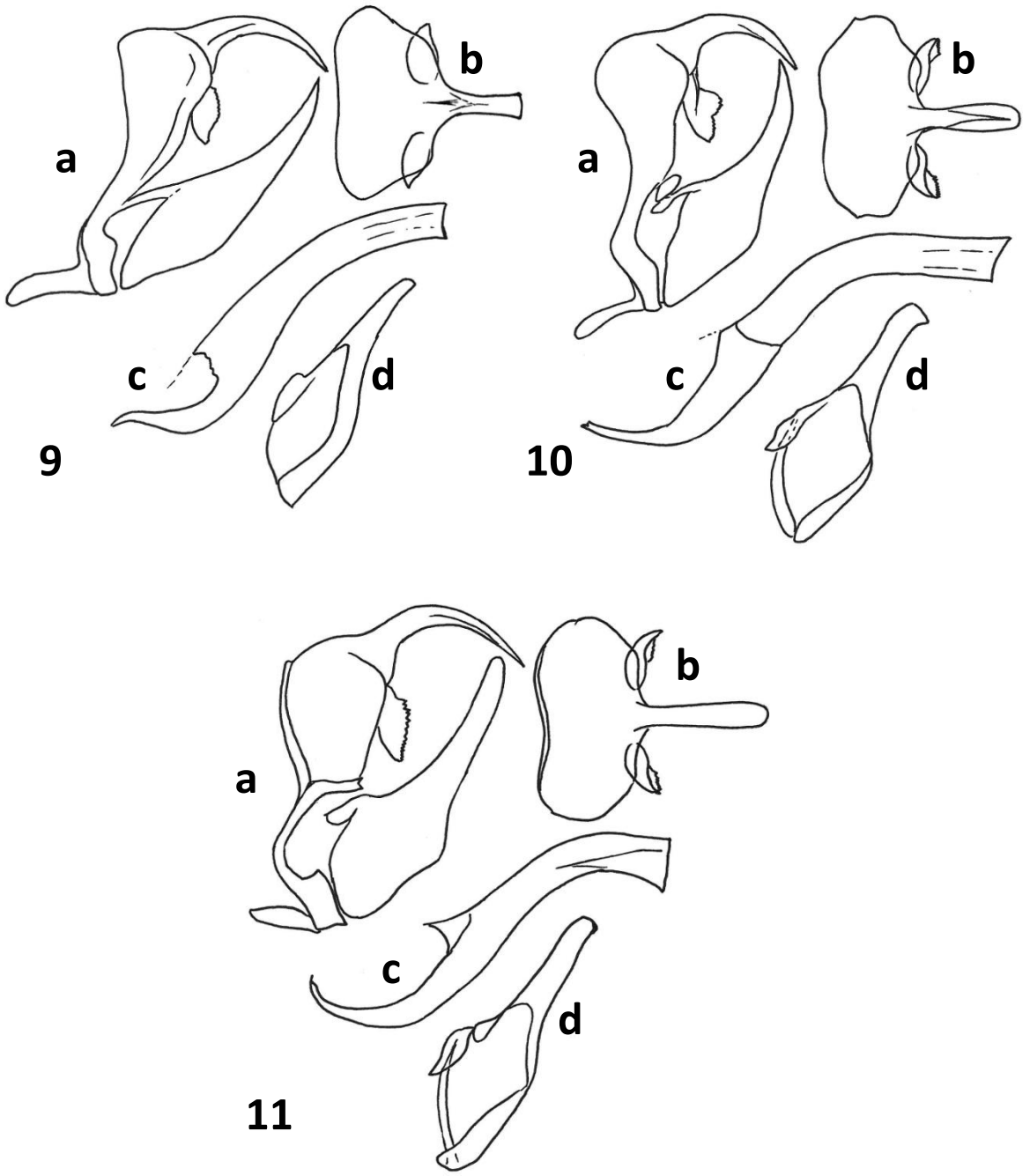
Tuzov, V.K., 1997. New species of the genus *Altiapa* Parsons, 1986 (Lepidoptera:

Nymphalidae, Satyrinae) from Irian Jaya (Indonesia). *Nachrichten des Entomologischen Vereins Apollo N.F.* 18 (2/3): 217–222.



Figs 1-8. *Platypthima* adult males: **1-2.** *Platypthima teeuwi* **spec. nov.**, holotype ♂, KSP; **3-4.** *P. septentrionalis* Nieuwenhuis & Howarth, 1969, holotype ♂, RMNH; **5-6.** *P. septentrionalis*, Finisterre Range, NHM; **7-8.** *P. ornata* Rothschild & Jordan, 1905, Owen Stanley Range, NHM.

DOI: 10.19269/sugapa2020.13(1).06



Figs 9-11. *Platypthima* male genitalia, showing genitalia lateral view (a), tegumen and soci-uncus dorsal view (b), aedeagus lateral view (c) and left valva (d): **9.** *Platypthima teeuwi* **spec. nov.**; **10.** *P. septentrionalis*; **11.** *P. ornata*. Scale bar = 1mm. Figs 10 and 11 adopted from Parsons (1998).

Published on 17th December 2020

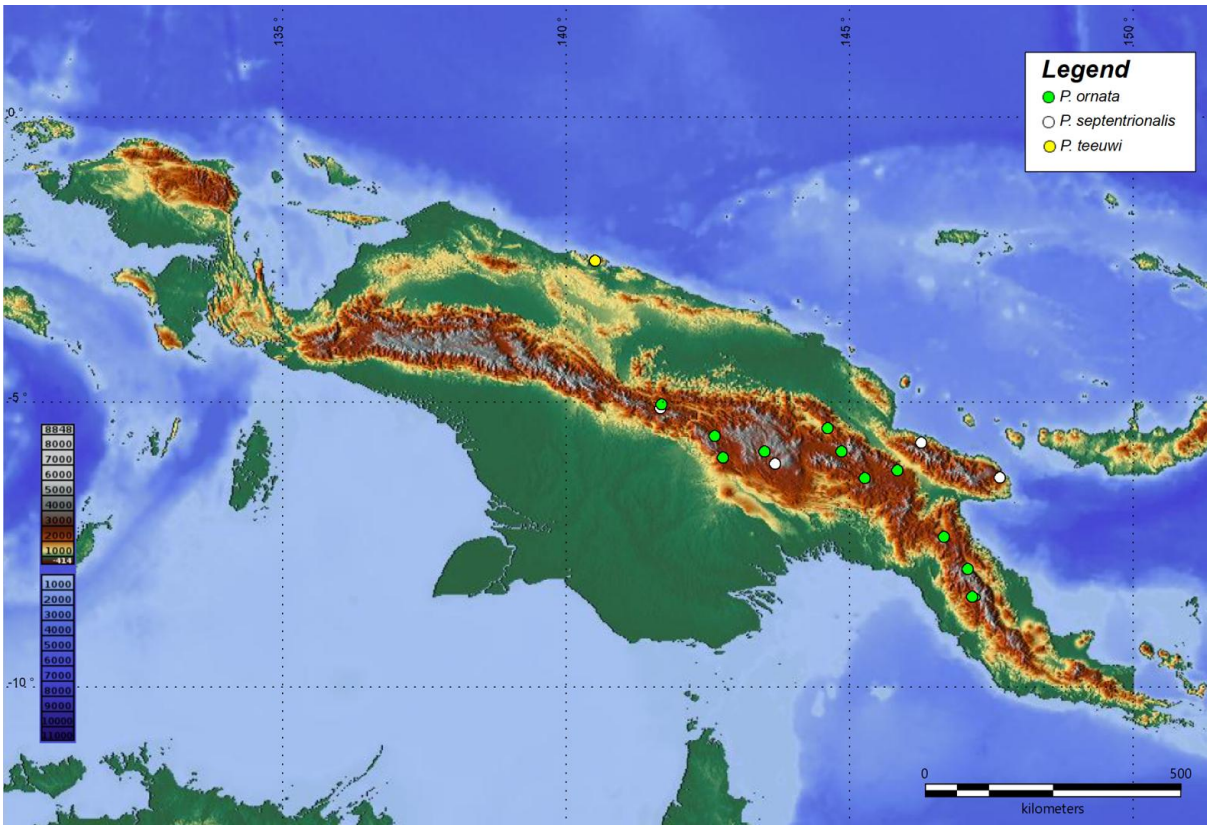


Fig. 12. Distribution map of *Platypthima* species. Legend as mentioned in the map.

DOI: 10.19269/sugapa2020.13(1).06