

Two new genera and two new species of Lycaenidae from Papua New Guinea

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Abstract: Two new genera of Lycaenidae, from Papua New Guinea, are described and figured. A new species is described and figured for each; *Taxiarchis viridesoltar* Müller, **n. gen.** and **n. sp.** is known from moderate altitude in West Sepik Province, while *Tennenta brandti* Müller, **n. gen.** and **n. sp.** occurs at high elevations in Enga Province. The former species is provisionally placed within the *Upolampes* section of Polyommatainae while *Tennenta* is ascribed to the subfamily Miletinae, tentatively within the tribe Spalgini. Both new taxa are known currently from single female specimens; emphasis is thus placed on their wing shape, pattern and venation, leg structure and female genitalia for classification.

Key Words: *Taxiarchis* **n. gen.**, *Taxiarchis viridesoltar* **n. sp.**, *Tennenta* **n. gen.**, *Tennenta brandti* **n. sp.**, Papua New Guinea, Lycaenidae, Miletinae, Polyommatainae, taxonomy

INTRODUCTION

The primary work on higher level Lycaenidae systematics remains that of Eliot (1973), who presented identification keys for all subfamilies, tribes and sections of the family and divided the tribe Polyommataini into 30 sections (genus groups) based on a series of morphological characters, including antennae, labial palpi, legs, wing venation, androconia and male genitalia. He noted that several thecline tribes have hairy eyes, a feature which in the Polyommataini is variable and of little value in classification even at generic level. Eliot implied that reduction of forewing veins to 10 occurs in many distantly related genera of Theclinae, but is an invariant character of Eumaeini, Hypolycaenini, Oxydidini, Hypotheclini, Catapaecilmatini and Horagini. He stated that 'Abnormalities of forewing veins 12, 11 and 10, often including anastomosis or contact of veins 11 and 12 ... are frequent in Polyommataini where they usually represent reliable section characters ...' (Eliot, 1973: 397). Eliot implied that within the subfamily Theclinae the under surface wing pattern [of bands and/or spots] is invariably readily recognisable and that the mid- and hind tibiae have paired, terminal spurs, that are inconspicuous in a few genera and almost completely absent in *Eumaeus* Hübner, 1819.

Eliot's classification of Lycaenidae has been widely adopted by most authors. He did not consider lycaenid female genitalia in his assessment, nor in his reviews on the butterflies of the Malay Peninsula (Corbet & Pendlebury, 1978, 1993), although Eliot & Kawazoé (1983) included examination of the female genitalia of selected species in their review of the *Lycaenopsis* group. Hirowatari (1992) considered female genitalia characters to be significant when considering clades within the Polyommataini and added four new genera in this tribe on this basis. In previous publications, Hirowatari also examined the female genitalia of the genera *Nacaduba* and *Jamides* (Hirowatari, 1986a,b, respectively) and found them to be diagnostic at the species level. In particular, Hirowatari

pointed out that the lamella antevaginalis is usually triangular or semicircular in Polyommataini and that the papillae anales are a pair of setose lobes, each bearing the apophysis posterioris in the middle of the anterior margin that in some genera are elongated towards the posterior.

The New Guinea mainland supports several distinctive endemic polyommataine genera: *Perperes* Hirowatari, 1992, *Paraduba* Bethune-Baker, 1906, *Thaumaina* Bethune-Baker, 1908, *Upolampes* Bethune-Baker, 1908, *Pistoria* Hemming, 1966 and *Callictita* Bethune-Baker, 1908. In recent years, a number of distinctive new lycaenid taxa have been described from New Guinea and surrounding islands (Lachlan & Müller, 2013; Yagishita *et al.*, 2013; Müller, 2013, 2014a, 2014b, 2016; Müller & Tennent, 2014, 2016). In this paper, two new monobasic genera currently only known from the mountains of Papua New Guinea are described, each with a number of characters not shared with any known genus. One of these, *Tennenta brandti* **gen. n.** and **sp. n.**, was treated as 'Genus and Species?' by Parsons (1998: 477, Plate 73 – Figs 2234/2235).

MATERIALS AND METHODS

New or comparative type specimens were examined and/or deposited in the Australian Museum, Sydney, Australia (AM) and Australian National Insect Collection, Canberra, Australia (ANIC). Additional research was carried out at the Natural History Museum, London (NHM). Pinned adults were photographed using a Nikon D300s Digital SLR Camera with a Nikon AF-S VR Micro-Nikkor 105mm f/2.8G IFED Macro lens and Nikon R1C1 Close-up Speedlights. Dissected female genitalia were examined with a Meiji Techno EMZ-5TR-P-FOI Trinocular Stereozoom Microscope, with OPTIK FL95E Fibreoptic Illuminator and twin arm optical fibre. Plates were composed in Adobe InDesign CS6. Anatomical terms for female genitalia follow Hirowatari (1986, 1992).

***Taxiarchis* Müller, new genus**

(Figs 1 - 9)

Type species: *Taxiarchis viridesoltar* Müller, new species

Description: MALE: unknown. FEMALE (Figs 1, 2): forewing length approximately 16 mm. Antenna approximately 7.5 mm. Wing shape: both wings relatively narrow, rounded at termen and with hindwing termen straight between vein 1b and 2; a long thin tail at vein 2. Venation (Fig. 4): forewing with 10 veins; veins 9 and 10 anastomosed. Dorsal surface: forewing ground color dark brown with a median white patch, scattered with iridescent green scales at base; cilia brown. Hindwing ground color dark brown with metallic blue and green scales at tornus and base, respectively; cilia brown. Ventral surface: forewing white with costal and terminal areas dark brown; submarginal line of white and a prominent dark brown bar perpendicular to costa in subbasal area; cilia brown. Hindwing white with terminal half of wing dark brown; narrow postmedian and submarginal bands of metallic green and a row of large iridescent emerald green submarginal spots; base dark brown; a sub-basal dark brown bar perpendicular to costa; cilia brown. Head: gray, eye ringed white; palpus (Fig. 8) smooth, gray, white ventrally, second and third segment elongated. Eyes smooth, black. Frons white, brown at edges. Antenna with approximately 40 segments, black, ringed with white, club black with white patches ventrally. Body: dorsally dark brown, ventrally light gray. All legs (Figs 5 - 7) white, tarsi black. Foreleg (Fig. 5) with coxa elongate, femur with fine vestigial spines posteriorly on inner margin tarsus with four segments, each with fine spines. Mid-leg (Fig. 6) and hind leg (Fig. 7) with coxa elongate, prominent tibial spurs and fine tarsal spines along inner margin. Female genitalia (Fig. 9): corpus bursae bulbous, sclerotized at margins; ductus bursae a slender tube tapered posteriorly; vestibulum sub-rounded at tip and of uniform width; papilla analis sub-triangular, sclerotized broadly on inner margin; aphophyses anteriores undeveloped.

Etymology: *Taxiarchis* is a Greek masculine gender name meaning "commander". *Taxiarchis* is the patron saint and the guardian angel of Lesbos, Greece.

Systematic position: *Taxiarchis* is placed within the Polyommatae, based on the presence of a hairline tail at vein 2, a lack of hindwing tornal lobes, and the triangular shape of the papilla analis in the female genitalia. Owing to the configuration of the forewing veins 11 and 12, which are important in characterizing some genera of Polyommatae, and the presence of median bars on the underside of both wings, the new genus is provisionally assigned to the *Upolampes* section of Eliot (1973), which includes the genera *Upolampes* Bethune-Baker, 1908, *Caleta* Fruhstorfer, 1922, *Discolampa* Toxopeus, 1929 and *Pistoria* Hemming, 1964, all of which occur in New Guinea. In *Taxiarchis*, and in the genus *Pistoria*, the forewing veins 11 and 12 are anastomosed, but only briefly, and each vein is markedly bent, such that the veins appear to cross over one another at the anastomosis. Genera within the *Upolampes* section were characterized by Eliot (1973: 444) by the 'Pattern on the under surface somewhat abnormal; usual markings often conjoined into black bars or bands, including sub-basal bands on one or both wings.' The hindwings of *Caleta* and *Discolampa* are tailed, while those of *Upolampes* and *Pistoria* lack tails.

Diagnosis: *Taxiarchis* is characterized by fairly long, narrow wings and forewing veins 11 and 12 are narrowly connected, giving the appearance of a 'bow-tie'. The hindwing bears a medium length, narrow tail at vein 2. The underside is predominantly white, with broad black sub-basal bars that are near perpendicular to the inner margin of the forewing and costa of the hindwing, respectively. These sub-basal bars are thus at a

higher angle to the inner margin and costa of the fore and hind wings than in other genera with barred representatives. There are a series of submarginal spots that are wholly iridescent emerald green, with no trace of a black center or nucleus.

Biology: Nothing is known of the biology of *Taxiarchis*. Only a single specimen is known, which was taken feeding from a white flowered vine, approximately five metres above the ground, in primary 'hill forest'.

Distribution: The known distribution is limited to the type locality of *Taxiarchis*, in the Upper Sepik, West Sepik Province, Papua New Guinea, where *Taxiarchis* flies with *Upolampes*, *Caleta* and *Discolampa*.

***Taxiarchis viridesoltar* Müller, new species**

(Figs 1 - 9)

Adult Description. Female (Figs 1, 2). Head: gray, eye black ringed white; palpus gray, white ventrally. Frons white, brown at edges. Antenna length 7.5 mm. Antenna black, ringed white, tip black with white patches ventrally. Body: dorsally dark brown, ventrally light gray. All legs white, tarsi black.

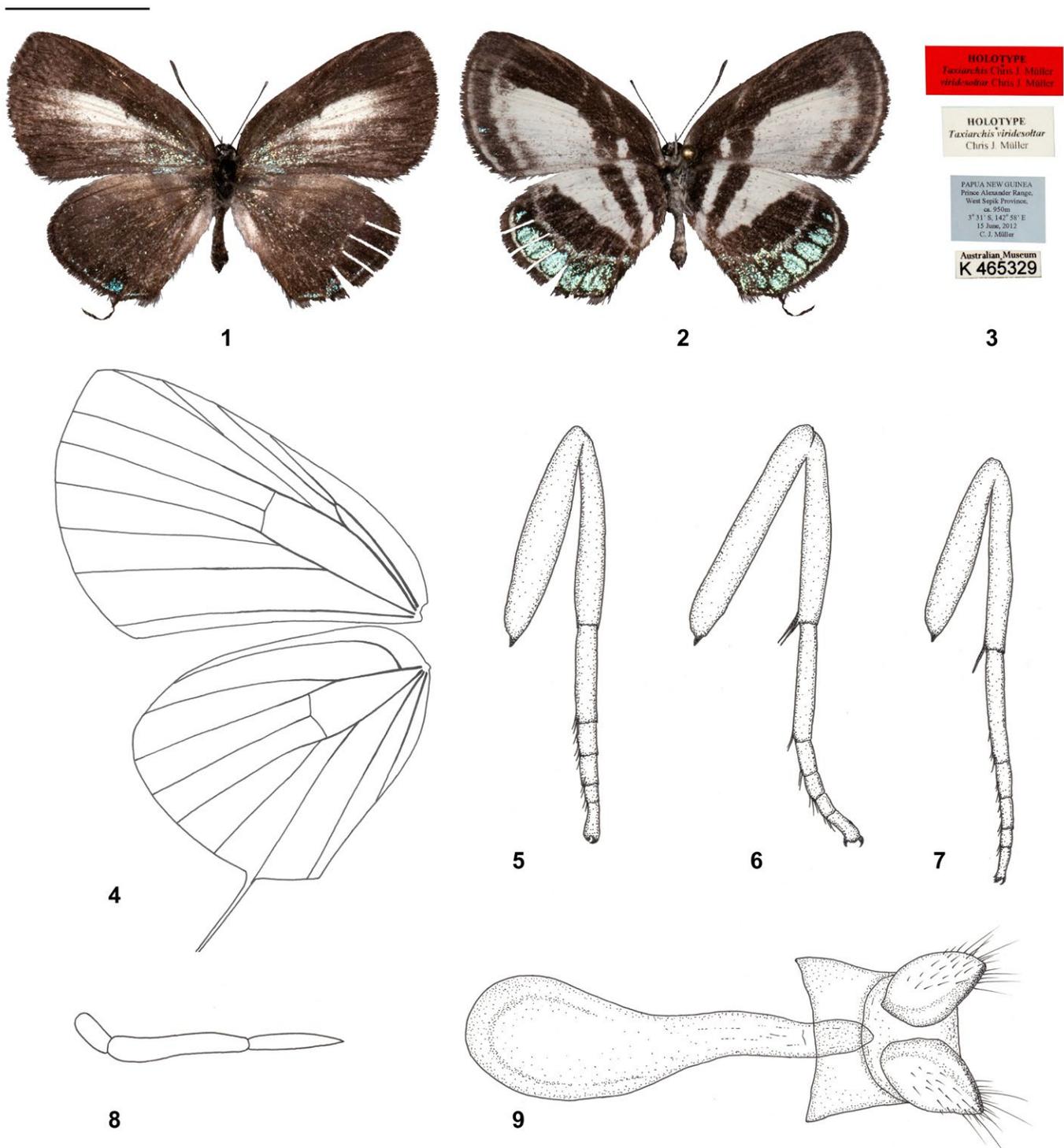
Forewing length 16.5 mm. Forewing with termen convex, inner margin very slightly bowed inwardly at two-thirds distance along from base. Forewing upperside dark brown, an obscure dirty white elongated patch extending from base to postmedian area, occupying approximately half of cell and extending towards termen in spaces 3 and 4, patch is very diffuse along boundary closest to termen and inner margin, basal portion of patch is sprinkled with iridescent yellow-green scales, discocellular veins intersection with space 5 are narrowly dark brown, veins dusted with dark brown, cilia dark brown. Forewing underside white, costa (to space 5), basal one-third of wing and almost entire cell broadly dark brown-black, termen broadly brown-black (approx. 2 mm wide) with a narrow subterminal white line (approx. 0.5mm width) parallel to termen and fading towards but not reaching costa, a faint brown-black postmedian band, parallel to termen, almost indecipherable in space 3, white subterminal band separating the brown border and postmedian band extending into dark brown-black costal area at space 5, a broken white, partly vestigial, basal band near perpendicular to inner margin, extending from vein 1b to near costa, cilia dark brown.

Hindwing narrow, a 2 mm long black tail at end of vein 2. Hindwing upperside dark brown, paler brown nearer base that allows view of underside pattern, a small patch of iridescent deep blue scales at termen in space 2, similar colored scales along termen from tornus to space 3, cilia dark brown. Hindwing underside white, termen with narrow line of green and white, mostly white in space 6, a broad black subterminal band (approx. 2mm wide) parallel to termen, enclosing well defined large iridescent emerald-turquoise oblong spots from termen to space 5, with a vestigial spot in space 6, a narrow postmedian band of green and white scales extending from inner margin to costa, narrowing and more predominantly white towards costa, a broad black median band, adjacent to latter narrow band and with a sharp, yet slightly indented boundary with white ground color on basal edge, which is perpendicular to the inner margin, a prominent sub-basal black band (approx. 1.2mm wide) near perpendicular to the costa extending from costa to inner margin where it joins the broad black median band, basal area broadly black, with sharp edge with white ground color, discocellulars faintly brown, cilia dark brown.

Female genitalia (Fig. 9): corpus bursae bulbous and sclerotized at margins; ductus bursae slender and tapered caudad; vestibulum sub-rounded at tip and of uniform width; papilla analis sub-triangular, sclerotized broadly on inner margin; aphophyses anteriores undeveloped.

Type: Holotype: ♀: labelled "Papua New Guinea, West Sepik Province, Prince Alexander Range, 3.517° S, 142.967° E, ca. 950 m, 15 June, 2012, Chris J. Müller" (Australian Museum, Sydney). AM Registration No. K.465329. In the AM.

Type locality: Papua New Guinea: Prince Alexander Range, West Sepik Province.



Figures 1-9. *Taxiarchis viridesoltar* n. gen. and n. sp. 1, *Taxiarchis viridesoltar* ♀ (Holotype), dorsal view; 2, ditto, ventral view; 3, ditto, label data; 4, ditto, wing venation; 5, ditto, labial palpus, lateral view; 6, ditto, foreleg, lateral view; 7, ditto, midleg, lateral view; 8, ditto, hindleg, lateral view; 9, ditto, female genitalia, ventral view.

Etymology: The species name ‘viridesoltar’ is a combination of the Latin word ‘viride’ for ‘green’ and the Spanish word ‘soltar’ for ‘release’ and reflects the intense shining emerald green full spots on the hindwing, seemingly escaping from an otherwise pied background.

Distribution and phenology: The new species is currently

known only from the Prince Alexander Range, West Sepik Province, Papua New Guinea.

Diagnosis: As stated in the genus description, the new species is assigned to the *Upolampes* section of the tribe Polyommataini. The row of fully metallic spots with no black centers are unknown from any other lycaenids in the region; all other

lycaenids have black centers or margins to the spots. Another unique character is the sub-basal bar on both the fore and hind wing, which are near perpendicular to the inner margin and costa, respectively, and therefore at a higher angle to the costa than in other Polyommata genera. Note that the single remaining hindwing tail broke off when the specimen was captured and was attached after the specimen was set. It is possibly longer than indicated in Figure 4.

Discussion: Assigning the new genus *Taxiarchis* to the *Upolampes* section of Polyommata is based primarily on its wing venation and underside wing pattern, particularly the black sub-basal bar present on the underside of both wings. *Upolampes* also has such a bar, but in *Upolampes* the bar connects with the hindwing inner margin approximately one-third from the base towards the tornus, whereas it reaches the inner margin in *Taxiarchis*, at one-half distance, midway between the base and the tornus, giving a high angle to this contact. Also, *Upolampes* is tailless and the hindwing underside has minor metallic coloration, unlike the tailed *Taxiarchis*, which bears extensive metallic markings.

Hirowatari (1992) evaluated species in the *Upolampes* section and distinguished them by male genitalia characters, namely absence or reduction of the male brachium and usually short, stout phallus is usually short and stout. The section contains four genera, *Upolampes* Bethune-Baker, 1908 (monotypic but including one undescribed species; Parsons, 1998); *Caleta* Fruhstorfer, 1922 (= *Pycnophallium* Toxopeus, 1929) (containing nine species; Takunami, 1989); *Discolampa* Toxopeus, 1929 (= *Ethion* Shirozu & Saigusa, 1962) (containing 3 species; Hirowatari, 1992) and *Pistoria* Hemming, 1964 (= *Mambara* Bethune-Baker, 1908, preocc.) (monotypic but Tite, 1962, considered that some subspecies described by him were possibly better regarded as distinct species). In all genera, the forewing veins 11 and 12 are anastomosed.

It was not possible to classify *Taxiarchis* using the keys of Eliot (1973) and Hirowatari (1992), since these depend substantially on male secondary sexual characters. However, the female genitalia provide additional certain clues, in particular the apophyses anteriores, a pair of antero-lateral processes of the 8th tergum, which are generally not well developed in the Polyommata, usually being less than half as long as the 8th tergum (Hirowatari, 1992). In common with *Upolampes*, the apophysis anterioris of *Taxiarchis* is undeveloped; it is short in both *Caleta* and *Discolampa* (Hirowatari, 1992). The female genitalia of *Pistoria* was not examined and therefore not illustrated by Hirowatari (1992), nor in this work.

Taxiarchis viridesoltar is presumed to mimic lycaenid species in the *Danis* section. Co-mimics include members from a diversity of lycaenid subfamilies and genera in the Papuan region, including species of *Hypochrysops* C. & R. Felder, 1860, *Hypochlorosis* Röber, [1892], *Hypolycaena* C. & R. Felder, 1862, *Arhopala* Boisduval, 1832, *Nacaduba* Moore, 1881, *Nothodanis* Hirowatari, 1992, *Caleta* Fruhstorfer, 1922, *Discolampa* Toxopeus, 1929, *Jamides* Hübner, [1819], *Epimastidia* Druce, 1891, and *Callicitica* Bethune-Baker, 1908. In this taxonomically diverse mimetic ring the adults are characterized by dominantly pied undersides with silvery-green

ornamentation at the margins, and uppersides with broad white median patches and/or bands.

Attempts to yield DNA (even COI) from this and the next taxon described here-in were unsuccessful, likely attributed to initial exposure to humid field conditions and age of the sample, respectively.

Tennenta Müller, new genus

(Figs 10 – 18)

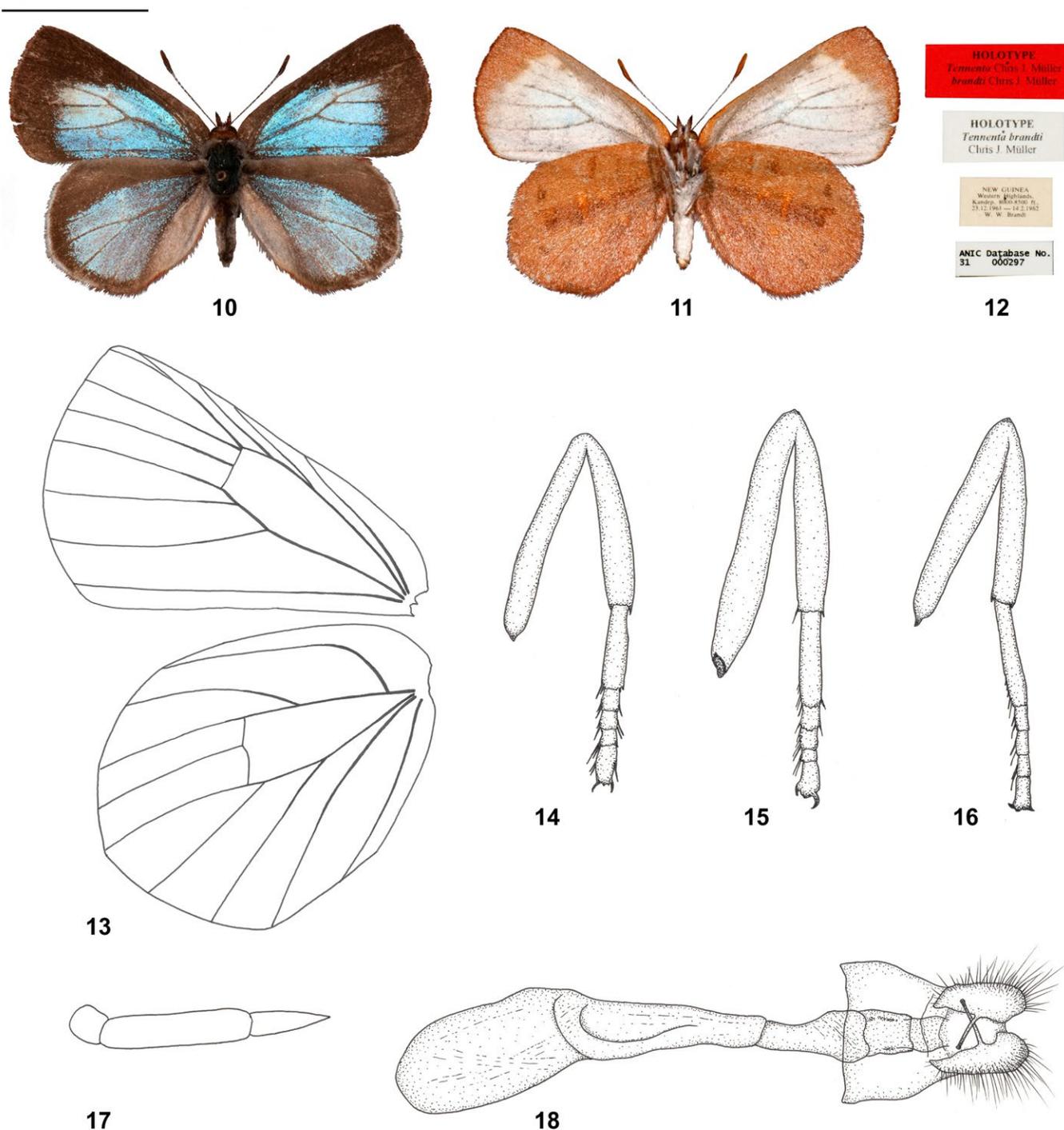
Type species: *Tennenta brandti* Müller, new species

Description: MALE: unknown. FEMALE (Figs 1, 2): Forewing length approximately 15.5 mm. Antenna approximately 6.0 mm. Wing shape: forewing with costa and inner margin nearly straight, rounded at termen; hindwing termen bent at ends of veins 1b and 4, giving wing an acute appearance. Venation (Fig. 13): forewing with 11 veins; forewing veins 11 and 12 not joined; vein 12 bowed near costa. Ventral surface: forewing ground color pale pink with apex, costa and termen light-chestnut/fawn, veins brown; cilia brown. Hindwing variegated light chestnut/fawn brown with patches of reddish brown in median and postmedian areas and an irregular reddish brown cell bar; cilia brown, reddish at tornus. Head and collar: reddish brown, eye ringed white; palpus thick, bristly scaled and with hairs, reddish brown, second and third segment elongated. Eyes with sparse hairs, yellow-brown. Frons red-brown. Antenna short, not reaching end of cell, with approximately 35 segments, black, ringed white, antennal club is large and is ventrally orange. Body: dorsally dark brown, ventrally white and covered with thick white hair. All legs red, with coxa elongate, femur with fine spines posteriorly, tibia and tarsus with long, coarse spines, coxa covered with long, thick hair. Genitalia: corpus bursae ellipsoidal, elongate, bulbous; ductus bursae a slender tube tapered posteriorly; a membranous fold separating the corpus bursae from the ductus bursae apophyses anteriores long and of uniform width except at tip, which is subtly clubbed; lamella antevaginalis is approximately rectangular shaped.

Etymology: The genus name *Tennenta* (feminine gender) honors John Tennent, whose devotion to the study of butterflies in the South Pacific, and elsewhere, has dramatically increased our knowledge of the fauna and resulted in the description of numerous new taxa.

Systematic position: *Tennenta* is placed in the subfamily Miletinae, based on the presence of 11 forewing veins, a typical miletine wing shape (pointed forewing with straight costa and strongly convex termen and an angular, squared hindwing), short antenna, thick and spiny tarsi without paired spurs, woolly body and leg coxae, large bristly scaled palps, short proboscis, and variegated underside wing pattern and coloration. However, the new genus has a distinctive wing shape and underside pattern, not quite like any known genus. Although *Tennenta* shares features of each of the miletine tribes, it is cautiously grouped with Spalgini, based on characteristic wing venation and symmetrical palpi.

Diagnosis: *Tennenta* is characterized by short antennae (not reaching the end of the cell) with large mostly orange clubs, as well as a distinctive wing shape, with a straight forewing costa, very rounded, almost bulbous, forewing termen and angular hindwing. Both wings on the upperside have extensive pale blue areas bordered by dark brown. The pattern of the hindwing underside is very unusual, being variegated but with an indistinct cell bar roughly parallel with the costa. The female genitalia has the corpus bursae bulbous and the apophyses anteriores are long and clubbed.



Figures 10-18. *Tennenta brandti* n. gen. and n. sp. 10, *Tennenta brandti* ♀ (Holotype), dorsal view; 11, ditto, ventral view; 12, ditto, label data; 13, ditto, wing venation; 14, ditto, labial palpus, lateral view; 15, ditto, foreleg, lateral view; 16, ditto, midleg, lateral view; 17, ditto, hindleg, lateral view; 18, ditto, female genitalia, ventral view.

Biology: Nothing is known of the biology of this species. The type locality is mixed upper montane forest and grasslands, with localized heathland.

Distribution: Known only from Kandep, Enga Province, Papua New Guinea. The elevation stated on the data label is 8000 - 8500 ft (approximately 2400 – 2600 m). The label also states the type locality was in Western Highlands, which is now within Enga Province.

***Tennenta brandti* Müller, new species**
(Figs 10-18)

Adult Description. Female (Figs 1, 2). Head and collar red-brown, eye ringed white; palpus (Fig. 17) red-brown. Frons red-brown. Antenna length 6.0 mm. Antenna black, ringed white, club ventrally broadly orange. Body: dorsally dark brown, ventrally white and covered with thick, long white hair. All legs (Figs 14 – 16) red, coxa with thick, long white hair.

Forewing length 15.5 mm. Forewing costa and inner margin straight, termen strongly convex. Forewing upperside medium brown, basal to postmedian area broadly lustrous pastel sky blue, filling almost entire cell and

much of spaces 1a, 1b, 2, 3 and part of space 4, median part of the area around junction of cell with veins 2, 3 and 4 with chestnut/fawn tints, veins brown, cilia pale brown. Forewing underside pale pink-white, costa and termen narrowly light chestnut/fawn-brown, apex broadly so (up to 3mm wide), veins brown, cilia light brown.

Hindwing acute, with prominent angles at apex and tornus and at ends of veins 1a and 4. Hindwing upperside lustrous pastel sky blue, with chestnut/fawn tints, costa broadly medium brown, filling most of space 5 and all of spaces 6, 7 and 8, termen broadly medium brown (2mm wide), inner margin (spaces 1 and 1a) light brown, veins variably high-lighted with brown, cilia pale brown, slightly darker at vein ends and along inner margin, reddish brown at tornus. Hindwing underside light chestnut/fawn brown, with small indistinct patches of reddish brown in the postmedian area in spaces 2, 3, 5 and 6 and in the median area in spaces 1b and 7, an irregular indistinct reddish brown bar filling much of the cell and part of space 4, all these reddish brown patches giving the wing a variegated appearance, cilia brown, reddish brown at tornus.

Female genitalia (Fig 18). As for genus; corpus bursae ellipsoidal, elongate, bulbous; ductus bursae slender and tapered caudad; a membranous fold separating the corpus bursae from the ductus bursae; aphophyses anteriores long and of uniform width except at tip, which is subtly clubbed; lamella antevaginalis is approximately rectangular in shape.

Type: Holotype: ♀: labelled "New Guinea, Western Highlands, Kandep, 8,000-8,500 ft., 23.12.61 to 14.2.62, W. W. Brandt (Australian National Insect Collection, Canberra), ANIC Database No. 31 000297". In the ANIC.

Type locality: Papua New Guinea: Kandep, Enga Province.

Etymology: Named after the collector of the specimen, Sir William W. Brandt, whose efforts over a decade in Papua New Guinea during the 1950s, resulted in a superb collection of Lepidoptera, that now contains numerous type specimens, housed at the ANIC.

Distribution and phenology: The new species is known only from the Kandep area, Enga Province, Papua New Guinea.

Diagnosis: As for the genus. The new species has short antennae (not reaching the end of the cell), a straight forewing costa and angular hindwing. The frons and legs are red-brown, with the body and leg coxae covered with long, thick, white hair. The pattern of the hindwing underside is variegated brown, with a cell bar parallel to the costa, with indistinct patches of red-brown. The female genitalia is bulbous, and the aphophyses anteriores are long and of uniform width except at the subtly clubbed tip.

Discussion: Parsons (1998: 477) included this distinctive 'Unnamed' taxon apparently belonging to 'an undescribed genus and species', easily distinguished by its 'predominantly pale orange-brown, vaguely patterned HW und, the pale orange-brown of the FW und apex, costa and termen, the antennal club ventrally, the labial palpi dorsally, and the orange-brown prothoracic 'collar' dorsally'. He went on to say 'The characters of the undetermined female (its coloration, maculation, short antennae with a well-formed club, very convex forewing termen, etc.) all suggest that the species belongs to a hitherto undescribed lycaenine [sic] genus and species.' Parsons added 'Although it is unlikely that the lycaenid is of hybrid origin, 1 further female would at least corroborate the hypothesis that it is distinct.' A hybrid origin is almost inconceivable, given that *Tennenta* has multiple characters not shared with any other lycaenid group in the region.

As already outlined in this work, characters of *Tennenta brandti* suggest that it belongs within the subfamily Miletinae, which includes Liphyrini as treated by Vane-Wright & de Jong (2003). Eliot (1973) noted that in Miletinae the forewing always has 11 veins, though he treated the currently recognized miletine tribe Liphyrini (which bear 12 veins) as a separate subfamily, closely related to Miletinae. *Tennenta* has 11 veins, including four that are radial.

Another feature which supports the inferred position of *Tennenta* within the Miletinae includes the wing shape. As in *Tennenta*, in many miletines the female forewing is acute and the termen is distinctly convex. The hindwing is often squarish, as in *Tennenta*. The wing shape of *Tennenta* is quite similar to females of certain *Aslauga* Kirby, 1890 (e.g., *Aslauga marshalli* Butler, 1898), an African genus in the tribe Liphyrini.

The underside wing pattern and coloration is truly miletine and the hindwing of *Tennenta* is reminiscent of a small *Liphyra* Westwood, 1864, in particular exemplified by the coarse wing scales. In both *Tennenta* and *Liphyra*, the typical lycaenid pattern is unrecognisable. The central hindwing underside bar, sub-parallel to the costa, present in *Tennenta*, is also a feature of various miletine genera such as *Miletus* Hübner, [1819], *Allotinus* C. & R. Felder, [1865] and *Logania* Distant, 1884.

Eliot (1973), following Clench (1955), placed emphasis on the characters of the legs in classifying Lycaenidae, noting that the absence of paired spurs at the lower end of the mid- and hind-tibiae are an important diagnostic character of Liphyrinae, Miletinae, Lipteninae and Poritiinae. In *Tennenta*, there are no obvious paired spurs and the legs are very similar to those of the monotypic, North American miletine *Feniseca* Grote, 1869, being white and red, with thick spiny tarsi and with abundant woolly hairs on the leg coxae (and covering the ventral part of the body).

Short antennae, as in *Tennenta*, are a feature of several miletine tribes. In *Tennenta*, the club is well developed and is almost entirely orange ventrally. Eliot (1973) noted that Miletinae have smooth eyes, except for the Afrotropical *Lachnocnema* Trimen, 1887. The eyes of *Tennenta* are sparsely hairy. *Tennenta* has notably bristly-scaled palpi, which is a particular feature of many Miletinae (Eliot, 1973). Large palps are a character of *Tennenta*, as in several miletine groups (e.g., the aptly named African genus *Megalopalpus* Röber, 1886).

Using the key of Eliot (1973) to the tribes and sections of Miletinae, the symmetrical palpi suggest that *Tennenta* may belong within the tribe Spalgini, which contains the African and Papuanian genus *Spalgis* Moore, 1879, the Asian *Taraka* Doherty, 1889, and the Nearctic monobasic *Feniseca* (Kaliszewska *et al.*, 2015). The wing venation of *Tennenta* follows essentially the same configuration as *Spalgis* and *Taraka*. The venation of *Tennenta* and *Feniseca* are also very similar, although forewing veins 6 and 7 are separate in *Tennenta*, yet stalked in *Feniseca*. The general size, shape, color and underside markings of the new taxon are certainly reminiscent of *Feniseca*. *Tennenta* is distinct from other Spalgini genera in the angular shape of the hindwing (rounded in *Spalgis*, *Taraka* and *Feniseca*), the absence of well defined bands and/or spots on the underside, and the extensive blue on the upperside (brown in *Spalgis* and *Taraka*; brown and orange in *Feniseca*).

Considering the distinctive traits of *Tennenta*, an exhaustive comparison of the female genitalia with those of related genera in Miletinae was not considered feasible, given the urgency for describing such unique new taxa for conservation reasons. Furthermore, without a comprehensive cladistic analysis of characters, assessing the monophyly (and therefore classification) of related genera would be impossible.

That *Tennenta* is known only from a single specimen is perhaps not surprising, given the generally inconspicuous nature of Miletinae. Miletinae larvae are not phytophagous (Fiedler and Maschwitz, 1989; Kitching, 1987; Lohman and Samarita, 2009; Pierce, 1995) and typically feed on ant larvae or hemipterans and the adults often remain very close to the congregations of their larval prey, sometimes sitting idle for long periods and therefore avoiding detection. In the field, the author has observed representatives of all miletine genera in both Africa and the Asian region. Many are crepuscular or fly only in deep, dark forest. Hill-topping is prevalent in the subfamily. In New Guinea, *Logania* is not uncommon but is very inconspicuous, as is *Spalgis*, which is rarely encountered and has a sporadic occurrence. It is hoped that further field work in remote high elevation areas of New Guinea will uncover the secrets of the mysterious *Tennenta brandti*.

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