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Description of *Heliocypha vantoli* spec. nov. from Siberut in the Mentawai Islands (Odonata: Chlorocyphidae)

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Abstract

Heliocypha vantoli Hämäläinen, spec. nov. [holotype ♂ from Indonesia, Mentawai Islands (off Sumatra), Siberut Island, 29-31 January 2013, deposited at RMNH, Leiden, The Netherlands] is described and illustrated for both sexes and compared with the *Heliocypha* species found in Sumatra and adjacent small islands. Notes on the Odonata fauna of the Mentawai Islands are also provided. *Euphaea aspasia* Selys, 1853 (Euphaeidae) is recorded as new to these islands; differences in the colour pattern of the Siberut and mainland Sumatran specimens are briefly discussed.

Key words: Odonata, Chlorocyphidae, *Heliocypha*, new species, Siberut, Mentawai, Sumatra

Introduction

Surprisingly little has been published on the dragonflies of Sumatra and its satellite islands since the mid 1950's. Previously, numerous important papers had been published by various authors, starting with those by Albarda (1887) and Selys Longchamps (1889). The most recent synopsis of the Sumatran fauna is to be found in Lieftinck's (1954) handlist of the Sundaland Odonata, which lists a total of 15 species and one subspecies of Chlorocyphidae from the mainland Sumatra and the adjacent small islands off its western coast. Among these are seven *Rhinocypha* (*sensu lato*) species and one subspecies. Using currently accepted generic combinations these are: *Heliocypha a. angusta* (Hagen *in* Selys, 1853), *Heliocypha angusta oceanis* (Lieftinck, 1947), *Heliocypha mariae* (Lieftinck, 1930), *Heliocypha nubecula* (Lieftinck, 1948), *Rhinocypha anisoptera* Selys, 1879, *Rhinocypha pallidifrons* Ris, 1927, *Rhinocypha selysi* Krüger, 1898 and *Rhinocypha xanthe* Ris, 1927. As far as I know there have been no subsequent published additions to the list of chlorocyphid species of mainland Sumatra.

According to Lieftinck (1948, 1954), only three chlorocyphid taxa have been recorded from the islands off the western coast of Sumatra, namely *Libellago sumatrana* (Albarda *in* Selys, 1879) from Simalur, Nias and Sipora; *Heliocypha a. angusta* from Nias and *Heliocypha angusta oceanis* from Enggano. No additional chlorocyphid records from these islands are known to me, nor to other workers (Rory Dow, pers. comm.).

Recently I received from Andrey Medvedev a selection of ca 100 calopterygoid damselfly specimens collected by four Russian entomologists in their separate visits to several South-East Asian countries in 2010–2014. The material includes a small series of a new *Heliocypha* species (Fig. 1) from Siberut Island, collected by Kirill A. Kolesnichenko in January 2013. It is described here.

Heliocypha vantoli spec. nov. (Figures 1–3)

Material studied: Holotype ♂: Indonesia, Mentawai Islands (off Sumatra), Siberut Island, Madoba; ca. 1º 35' S, 99º 09' E; alt. 60 m asl., 29–31 January 2013, K.A. Kolesnichenko leg. Paratypes: 3 ♂ 1 ♀, same data as in holotype. Holotype deposited at RMNH (Leiden, The Netherlands)

Etymology. This species is named after Dr Jan van Tol to honour his significant contributions to our knowledge of the Southeast Asian odonate fauna, particularly that of Sulawesi and nearby islands, and also in appreciation of his valued leadership of the 'DAWN (Damselfly Workers Naturalis)—group' of the Naturalis Biodiversity Center in Leiden.

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FIGURE 1. A male individual of *Heliocypha vantoli* **spec. nov.** photographed in the type locality (see Fig. 5). Photo by Kirill A. Kolesnichenko.

Holotype male. Head. Black throughout with small, oblong, ochreous spot beside each lateral ocellus and with tiny round dot on either side of occiput.

Thorax (cf. Fig. 2a, 2b). Prothorax black with distinct pinkish magenta anterodorsal marking on hind lobe. Synthorax black with pinkish magenta dorsal triangle and with broad, pinkish magenta, irregularly shaped antehumeral stripe on mesepisternum. This stripe broadest in anterior half and narrowing towards wing base, bending ventrad along antealar ridge where it is narrowly tinged with pale blue. Small yellowish marking on mesostigmal laminae, not connected with antehumeral stripe. Irregularly shaped, pale cerulean lateral stripe on metepisternum, connected to similarly coloured marking on anterior edge of mesepimeron; this lateral stripe slightly narrower than antehumeral stripe. Small pale cerulean marking on metepimeron near wing base. Venter of thorax black with posterior and lower half of lateral borders of poststernum and poststernal membranes pale. Legs black, inner surfaces of middle and hind femora creamy yellow; those of middle and hind tibiae white.

Wings. Shaped as in Fig. 2c, wing apices distinctly rounded, especially in hindwing. Opaque area extensive in both wings, starting anterior to nodus. Hind wing with seven vitreous fenestrae ("windows") arranged as in Fig. 2c. Basal fenestra long, covering 18 cells and extending to hyaline area at wing base. Lowest fenestra in middle of hindwing very long, covering 20 cells. At certain angles, dark background on either side of both wings reflects green, magenta or violet iridescence, especially striking in hindwing. Pterostigma dark in both wings.

Abdomen. Black, except with a small, mid-lateral pale blue spots near apices of S1, S2, S3 and S4. Spots on S1 and S2 a little larger than the others. Tiny remnant of pale ventrolateral stripe on S1 and S2. Appendages black, of the typical shape for the genus.

Measurements (in mm). Hindwing 21.5; abdomen (incl. appendages) 19.

Variation in paratype males. The wing colour pattern is quite similar in all specimens. There is some small variation in the pale markings of thorax and abdomen, obviously partly age dependant. In two males the pale marking on the metepimeron is a little larger and longer than in holotype and in two males abdominal S4 lacks a lateral pale spot.

Measurements (in mm). Hindwing 21.5–22.5; abdomen (incl. appendages) 19–20.

Female. Head with orange markings much more extensive than in male. Middle and lateral lobes of labium pale at basal one third. Labrum with a pair of orange dots. Borders of eye narrowly orange up to level of lateral ocelli. Yellow markings on dorsal side of head as in Fig. 3b. Venter of head partly pruinosed.

Thorax (Fig. 3b). Prothorax black with small pale/ochreous spots on sides of fore, middle and hind lobes. Distinct triangular posterodorsal marking on hind lobe connected with narrow orange stripe, which reaches anterior edge of hindlobe. Synthorax black with narrow, reddish brown antehumeral stripe on mesepisternum; much narrower than in male. This stripe narrowing towards wing base and turning ventrad along antealar ridge. Small pale marking on mesostigmal laminae, not connected with antehumeral stripe. Irregularly shaped, orange ochre

lateral stripe on metepisternum, connected to similarly coloured marking on anterior edge of mesepimeron; this stripe resembling that in male, but a little broader. Elongated, slightly angulate, pale patch in posterior third of metepimeron near wing base. Venter of thorax coloured as in male. Legs black, trochanters and inner surface of middle and hind femora partly greyish brown.

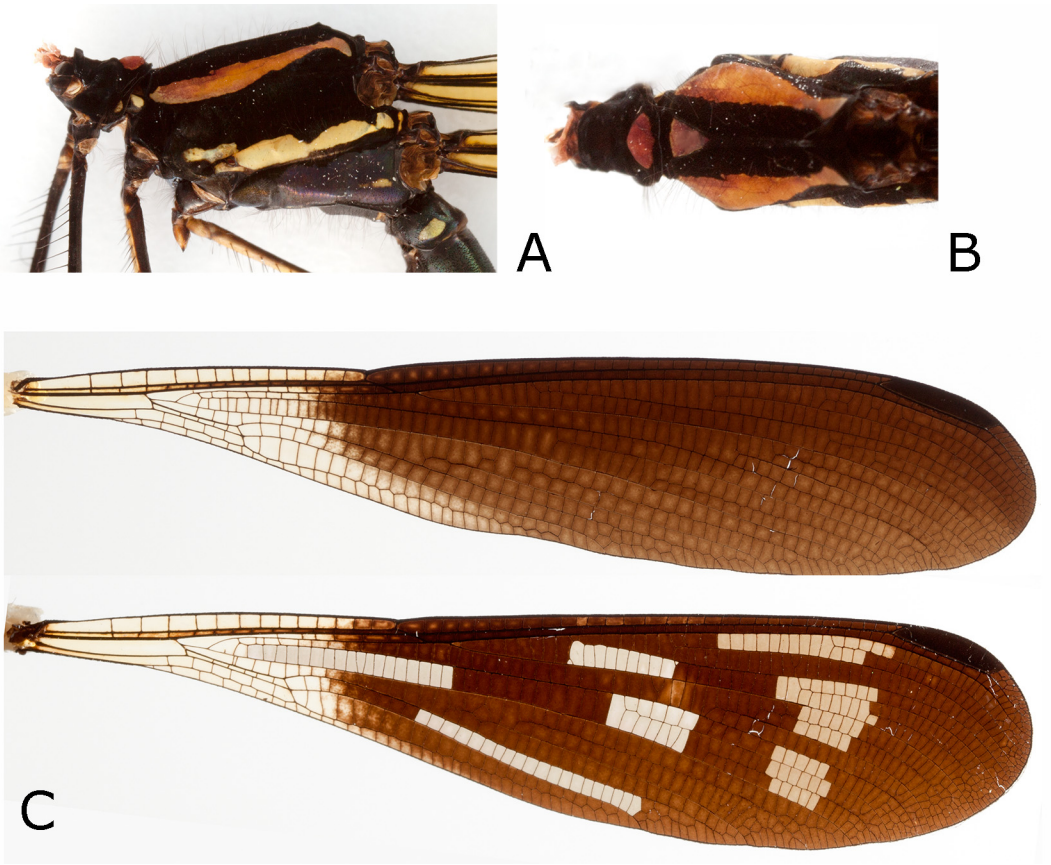

FIGURE 2. *Heliocypha vantoli* **spec. nov.** male; a) lateral view of thorax of a paratype male; b) dorsal view of thorax of a paratype male; c) wings of holotype male.

FIGURE 3. *Heliocypha vantoli* **spec. nov.** paratype female; a) habitus; b) details of head (dorsal view) and thorax and base of abdomen (lateral view).

Wings. Both wings deeply suffused with brown (Fig. 3a), especially strongly so in apical third and along costal margins distad from level of nodus in forewing and slightly further basad in hindwing. Pterostigma greyish white with anterior corner obscurely brown.

Abdomen. Largely black with pale markings as follows (Fig 3a, 3b). S1 with triangular marking, directed ventrad. S2, S3 and S4 with short mid-lateral stripe in apical half of each segment, with small round mid-lateral spot near apex and obscure short ventrolateral stipe in middle of segment. Pale markings on S4 tiny, almost obsolete. Dorsal carina of S3–S7 narrowly yellow, yellow colour not reaching either base or apex of each segments. Intersegmental rings, except the three most apical ones, narrowly yellow.

Measurements (in mm). Hindwing 24.5; abdomen (incl. appendages) 18.

Distinguishing characters. Apart from this new species, only other two Sumatran chlorocyphid taxa have vitreous fenestrae in the partly opaque male hindwings. These are *Heliocypha a. angusta* and *H. angusta oceanis*. *Heliocypha vantoli* spec. nov. is easy to separate from these two by the shape of the wings. In *H. vantoli* the wings (Fig. 2c) are proportionally broader and shorter than in *H. a. angusta* (Fig. 4a) and *H. angusta oceanis* (Fig. 4b). Moreover, the wing tips are distinctly more rounded in *H. vantoli*. The overall arrangement of the fenestrae is quite similar in these three taxa, but *H. vantoli* differs by having a much longer row of iridescent cells in the basal fenestra in the central part of the hindwing. In *H. vantoli,* the extent of opaque area in wings is much greater than in *H. angusta*, especially in the forewing.

The colour pattern of the male thorax also differs. In *H. vantoli* (Figs. 1, 2a, 2b) the pale markings are less extensive than in *H. a. angusta* (Fig. 4c). *H. angusta oceanis* (Fig. 4d) differs from both *H. a. angusta* and *H. vantoli by* having very restricted pale lateral markings. The female of *H. vantoli* is readily distinguished by its strongly brown tinted wings; in females of *H. a. angusta* and *H. angusta oceanis* the wings are hyaline.

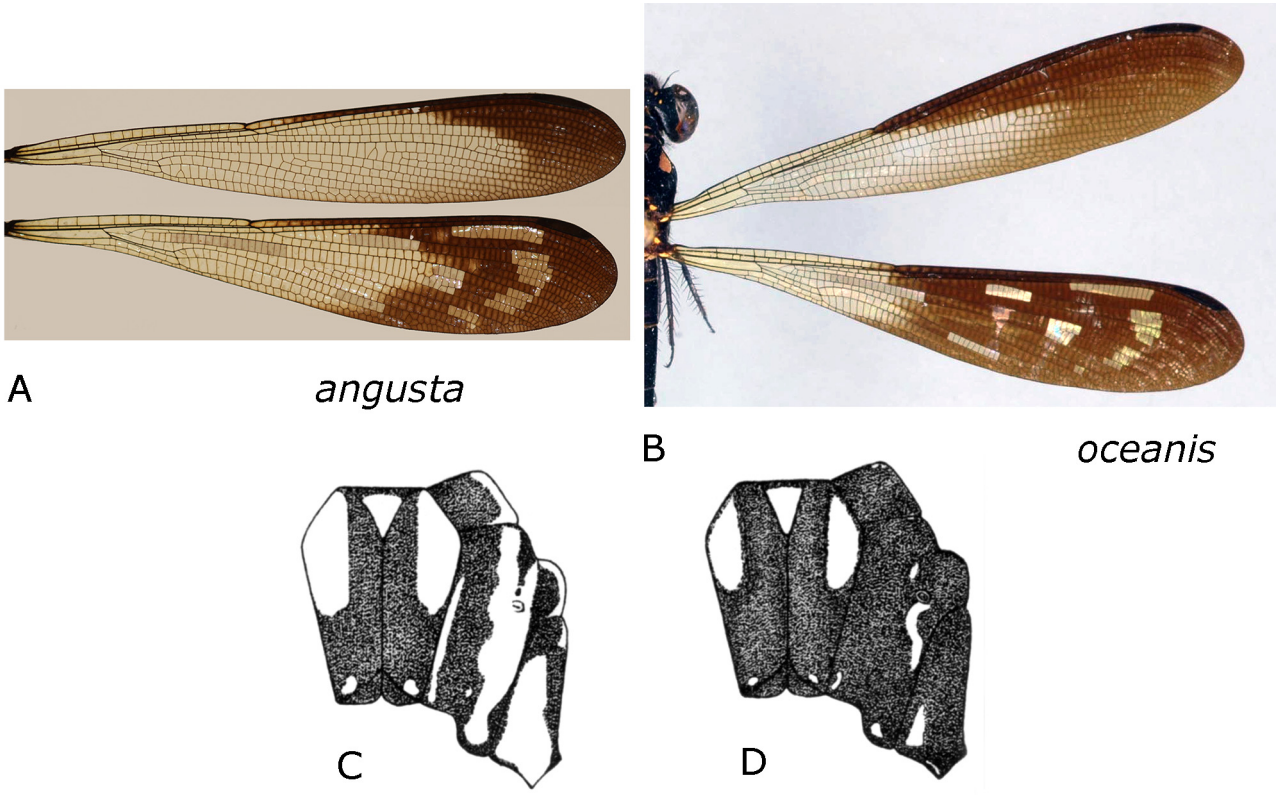

FIGURE 4. *Heliocypha a. angusta* and *H. angusta oceanis* males; a) wings of a *H. a. angusta* specimen from West Sumatra province, Sg. Jaring, between Bukittingi and Maninjau, 25-v-1997, M. Hämäläinen leg.; b) wings of holotype of *H. angusta oceanis* from Enggano Island; c) thorax of a *H. a. angusta* specimen from South Sumatra; d) thorax of a paratype of *H. angusta oceanis* from Enggano Island. Figures c and d are scanned from Lieftinck (1947, Figs. 2 and 4 on p. 221).

H. a. angusta is common and widespread in Sumatra (Lieftinck 1935). The type locality of *H. angusta* is Bencoolen [Bengkulu] at the west coast of southern Sumatra, where the Danish naval officer I.K. Daldorff collected the teneral male holotype in 1800. The specimen is still in good condition and preserved in ZMUC (Copenhagen). *H. angusta oceanis* is endemic to Enggano. The holotype male and a long series of paratypes of both sexes, collected by J.K. de Jong in 1936, are at RMNH (Leiden). Lieftinck (1947, 1948) ranked *oceanis* as a subspecies and pointed out that melanism is a typical modification among several other dragonfly species in

Enggano, but there are also marked exceptions in this rule; some of the Enggano odonata forms are lighter in colour than in mainland Sumatra. It could be argued that *H. angusta oceanis* deserves specific status. However, as its wing shape and arrangement of vitrious fenestrae match well with those in *H. a. angusta*, it is better to wait for further evidence before considering any change in the taxon's status.

Most likely *H. vantoli* is endemic to Siberut Island. Its occurrence in other major islands of Mentawai is of course not ruled out.

FIGURE 5. The stream habitat in Siberut where the new species was found. Photo by Kirill A. Kolesnichenko.

Notes on the knowledge of Mentawai Odonata. The dragonfly fauna of Mentawai islands (Siberut, Sipura, North Pagai, South Pagai) is still inadequately known. In September-November 1924 the entomologists Cecil Boden Kloss, Norman Smedley and Heinrich Karny collected in Siberut and Sipura. Laidlaw (1926) identified 34 species from their material, including 27 species from Siberut, 18 from Sipura and 8 from the Pagai islands. In the earlier literature only one dragonfly specimen had been recorded from Mentawai, i.e. the holotype male of *Euphaea modiagliani* Selys, 1898, collected by Elio Modigliani on 'Ile Metawei' (Selys Longchamps 1898). It is known that the only island in Mentawai visited by Modigliani was Sipura, where he collected in 1894. Lieftinck's (1954) handlist did not include any additions to those species listed by Laidlaw (1926). As far as I know, later only one addition to the fauna has been published; Karube & Yeh (2001) listed *Oligoaeschna sumatrana* Lieftinck, 1953 from 'Sibelute I.' (misspelling of Siberut Island). In addition Lieftinck (1968) reidentified Laidlaw's (1926) '*Jagoria modigliani* Selys' from Siberut and Sipura as a new species *Oligoaeschna uropetala* Lieftinck, 1968. In

earlier literature only three calopterygoid species are listed from the Mentawai islands: *Libellago sumatrana* (Sipura), *Euphaea modigliani* (Sipura) and *Vestalis lugens* Albarda *in* Selys, 1879 (Siberut, Sipura). The recent calopterygoid material from Siberut, which I received for study, also includes specimens of *Vestalis lugens* (2 males, 1 female) and *Euphaea aspasia* Selys, 1853 (10 males), with the same collecting data as for *H. vantoli*. *E. aspasia* is a new record to the Mentawai islands. The *E. aspasia* males from Siberut lack pale markings on the head and prothorax and the pale markings on the synthorax are restricted to narrow stripes on the metepisternum and metepimeron. The wings lack the distinct hyaline lower margins present in the mainland Sumatran specimens. The Siberut specimens are also slightly smaller. The Siberut form could qualify as a distinct insular subspecies. The two additions bring the number of Odonata species listed from these islands to 38.

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