

SHORT COMMUNICATIONS

**FIRST DESCRIPTION OF FEMALE
ELATTONEURA CAESIA (SELYS, 1860)
AND AMENDED DESCRIPTIONS OF MALE *E. CAESIA* AND
MALE AND FEMALE *E. CENTRALIS* (SELYS, 1860)
FROM SRI LANKA, WITH NOTES ON BEHAVIOUR, HABITAT,
DISTRIBUTION AND FIELD IDENTIFICATION CHARACTERS
(ZYGOPTERA: PROTONEURIDAE)**

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The ♀ of *E. caesia* is described and figured for the first time. In earlier publications, *E. caesia* and *E. centralis* were confused with each other (cf. F.C. FRASER, 1933, *The fauna of British India including Ceylon and Burma: Odonata*, vol. 1, pp. 238-241, Taylor & Francis, London). Amended descriptions of the ♂ of *E. caesia* and of both sexes of *E. centralis* are provided. Key phenotypic differences between the 2 spp. are illustrated, and additional notes are given on behaviour, habitat and distribution.

INTRODUCTION

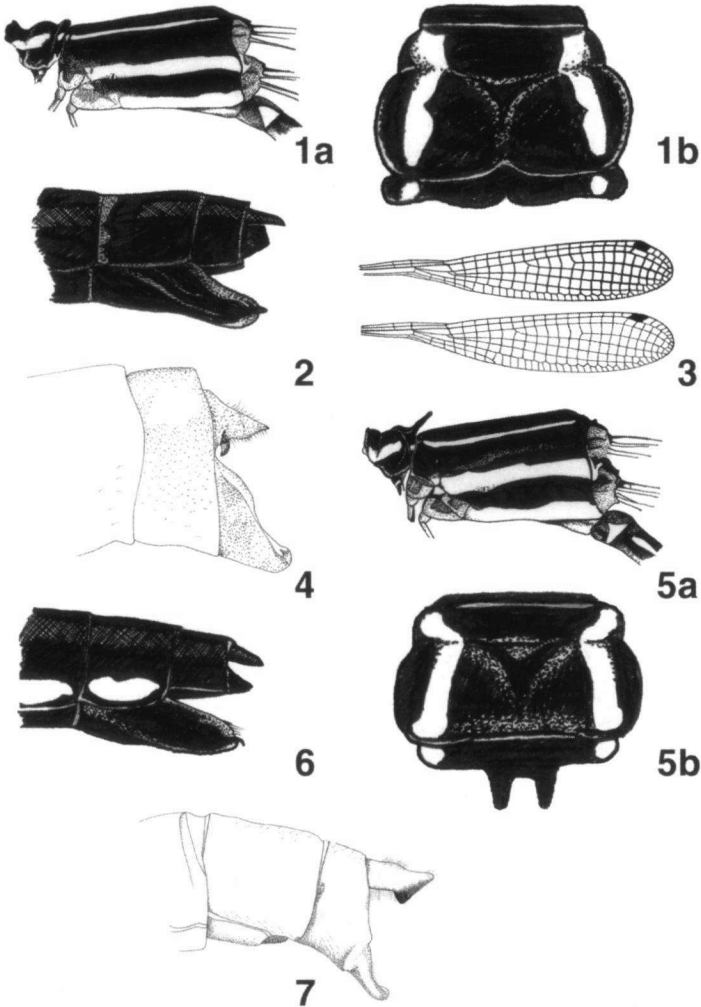
Elattonneura caesia was first described as *Alloneura caesia* by SELYS (1860) from a male specimen and was subsequently reassigned to the genus *Disparoneura* (SELYS, 1886). Still later, it was transferred to a new genus under the name of *Elattonneura* (COWLEY, 1935).

LAIDLAW (1924) described the male and female of *D. caesia* but his description was based on specimens of *D. centralis*. FRASER (1933) recognized this error and described the male of *D. caesia* and both sexes of *D. centralis* and recorded the female of *D. caesia* as unknown. DE FONSEKA (2000) restated the information from FRASER (1933) but included, as Figure B61, the mistaken diagram of the male anal appendages from LAIDLAW (1924) – Figure B61 is

labeled as *E. caesia* but should have been labeled as *E. centralis*.

Both *E. caesia* and *E. centralis* are endemic to Sri Lanka. They are phenotypically similar, with overlapping habitats.

The female of *E. caesia* is described below for the first time. Minor deviations from the description of the male of *E. caesia* from earlier publications are dis-



Figs 1-7. Structural features of *Elatoneura caesia* (Figs 1-4) and *E. centralis* (Figs 5-7): (1) female, prothorax and thorax, lateral (a) and dorsal (b; prothorax only) views; – (2) female, anal appendages, lateral view; – (3) female, forewing and hindwing; – (4) male, anal appendages, lateral view; – (5) female, prothorax and thorax, lateral (a) and dorsal (b; prothorax only) views; – (6) female, anal appendages, lateral view; – (7) male, anal appendages, lateral view.

cussed. In order to distinguish *E. caesia* from *E. centralis*, minor deviations of the description of the male and female of *E. centralis* from earlier publications are also discussed. Additional notes are given on behavior, habitat and distribution.

DESCRIPTION OF THE ALLOTYPE FEMALE OF *ELATTONEURA CAESIA*

Figures 1-3

Material. — **Allotype** ♀ (in copula): SRI LANKA, Mahabage, Kitulgala, 6-III-2007. — **Paratypes:** ♂ ♂, ♀ ♀, in copula, same locality, 5/7-II-2007, 6-III-2007; ♀ ♀, SRI LANKA, Kalawana, 15-V-2007, 21-VI-2007.

Head. — Labrum and mandibles blackish brown, base of mandibles with pale yellow spot; labium, frons and anteclypeus black; genae pale yellow; anterior portion of postclypeus black, posterior portion of postclypeus pale yellow with 4 lobes and continues as a transverse stripe to the eyes on each side; comma shaped dark ochreous spot between root of the antenna and posterior ocellus.

Eyes black above to below midline; pale yellow below.

Thorax. — Black with a greenish-yellow antehumeral stripe that narrows towards humeral end and stops before ante-alar sinus on each side of the dorsum; greenish-yellow stripe on metaepisternum, continuing into ante-alar sinus; beneath yellow.

Prothorax (Fig. 1a, b) broadly black with an uneven yellow stripe on each side, broken where it passes from the middle lobe to the posterior lobe; posterior lobe angled upward at approximately 45 degrees; posterior margin rounded with one very short rounded projection on each side of the midline; median lobe with rounded protuberance on each side of midline, lateral edges lobed and curled upward above coxae; anterior lobe sharply angled upward at approximately 90 degrees.

Legs black; coxae and trochanters and upper part of femurs whitish-yellow on sides and ventral surface.

Wings (Fig. 3) similar to the male but not enfumed; PN in forewings 15-18; PN in hindwings 15-17.

Abdomen. — Dark brownish-black with pale yellow lateral markings: segment 1 with a triangular mark; segment 2 with a basal triangular mark that extends as a thin line to an apical triangular mark; this line continues along segment 3, becoming less visible with only apical triangular marks faintly visible; segments 8, 9, and 10 black with some vague yellowish markings. Some young females have a yellowish diamond shaped spot on the top of segment 9.

Anal appendages (Fig. 2): Cerci brownish-black, short and conical; paraprocts rounded and slightly pointed towards the base; ovipositor extends to the end of the cerci. Some specimens have whitish anal appendages; others a lighter brown. This may be age-dependent.

Measurements (in mm). — Total length 33-35; abdomen 27-30; forewing 19-22 mm; hindwing 18-21.

AMENDED DESCRIPTION OF *ELATTONEURA CAESIA* MALE

Figure 4

The specimens examined in the current study are similar to those described by FRASER (1933) except for differences that are noted as follows: length of abdomen 31-33 mm, hindwing 19-20 mm (corresponding figures by Fraser: 35-36 mm and 22-23 mm); prothorax and thorax variably pruinose from none in teneralis to complete in older individuals; first abdominal segment variably pruinose; the ventral spine on the superior anal appendage is perpendicular to the long axis of the superior anal appendage; it points straight down when the anal appendage is extended horizontally. However, the male often holds the superior anal appendages pulled inward to the body so that the ventral spine appears curved (Fig. 4) or absent.

AMENDED DESCRIPTION OF *ELATTONEURA CENTRALIS* MALE

Figure 7

The specimens examined in the current study are similar to those described by FRASER (1933) except for differences that are noted as follows: length of abdomen 30-35 mm (corresponding figures by Fraser: 30-33 mm); ventral spine of the superior anal appendage appears blunted (Fig. 7). As with *E. caesia*, the male often holds the superior anal appendages pulled in; in this state, the anal appendages of *E. caesia* and *E. centralis* appear similar.

AMENDED DESCRIPTION OF *ELATTONEURA CENTRALIS* FEMALE

Figures 5-6

The specimens examined in the current study are similar to those described by FRASER (1933) except for differences that are noted as follows: length of abdomen 28-30 mm, hindwing 18-21 mm (corresponding figures by Fraser: 31-32 mm and 21-22 mm); processes on the prothorax spine-like, approximately 0.5 mm long and directed back towards the thorax at a 45 degree angle (Fig. 5 a, b); abdominal segments 8 and 9 with kidney-shaped lateral spots, 10 unmarked; younger specimens with diamond-shaped mark on dorsal surface of 9; superior and inferior anal appendages (Fig. 6) short, conical and black; eyes steely blue above and greenish-yellow below in life.

NOTES ON DISTRIBUTION AND BIOLOGY

DISTRIBUTION. — *E. caesia* has been reported from 15 locations (M. Bedjanič, pers. comm.); 9 locations are published in FRASER (1933) and DE FONSEKA (2000). In the current study, it was found in the following additional 10 locations and habitats: Halgola Estate, Galagedara, Kandy (January, February, small seep;

elevation 373 m); Corbett's Gap, Knuckles (April, small seep; 1500 m); near Meemure, Knuckles (April, small stream; 900 m); Knuckles (km 28 on B274 near Rattota) (May, small seep; 800 m); Mahabage, Kitulgala (February, March, April, small seep; 400 m); Meetirigala Forest Reserve (February, small stream; 400 m); Dombagaskanda Forest Reserve, Bodhinagala, Ingiriya (February, small stream; 100 m); Morapitiya Forest Reserve (April, small stream; 60 m); Sinharaja Forest Reserve (May, small waterfall, wet grassy edge of road, on vegetation on trail; 600 m); Hunas Falls Hotel (April, seepage area in golf green; 1000 m). It is local and widespread in the wet zone from 100-1500 metres elevation from January to September.

E. centralis has been reported from 50 locations (M. Bedjanič, pers. comm.); 11 locations are published in FRASER (1933) and DE FONSEKA (2000). In the current study, it was found in the following additional 11 locations and habitats: Halgola Estate, Galagedara, Kandy (March, small seep; 373 m); Hunas Falls, Kandy (March, small stream; 1000 m); Samadhi Centre, Kandy (January, river; 600 m); Kiriella, Ratnapura (March, small seep; 30 m), Knuckles (Rattota-Illukumbara Road, near km post 38) (April, small stream; 800 m); Mahabage, Kitulgala (January to July, October, small river and small stagnant pool; 300 m); Kitulgala (May, river edge; 75 m); Pitawela, Knuckles (March, April, May, small stream; 840 m); Soragone, Haldumulla (April, small river; 300 m); Eheliyogoda-Dehiowita road (February, small stream; 34 m); Wasgamuwa National Park (July, small shady stream; 100 m); Hiyare Forest Reserve, Galle (small stream; 110 m). It is locally common in the wet zone from 100-1000 metres elevation throughout the year. In the current study, it was also recorded from one location in the intermediate zone in July.

HABITAT. — *E. caesia* has been reported at fast running streams with dense vegetation (DE FONSEKA, 2000). However, in the current study, it was also found at small seeps and slow running streams with or without dense vegetation, and in marshy areas, in shade and sun. Similarly, *E. centralis* was also reported at fast running streams with dense vegetation (DE FONSEKA, 2000). However, in the current study, it was also found at large rivers, stagnant pools, seeps, and small, slow running streams that are with or without dense vegetation.

BEHAVIOUR. — *E. caesia* males were seen at or near the water source settled horizontally on vegetation, making frequent sallies to catch food. On the other hand, females frequented surrounding vegetation and visited the wet areas where the males were for the purpose of mating. On arrival there, females were quickly caught by the males for mating. *E. centralis* males often rested on rocks or hung from vegetation near the water source while females came to the water only to mate and were therefore not often seen.

FIELD IDENTIFICATION OF *E. CAESIA* AND *E. CENTRALIS*

Since these two species are often found in the same habitat and can look the same superficially, they can be confused with each other in the field. Their size ranges overlap though the abdomen of the male of *E. centralis* appears thinner. *E. centralis* male has a purple sheen on the prothorax, thorax and abdomen that is often noticeable only when seen close up in the appropriate light; the purple sheen is unfortunately rendered blue in most photographs. It is rarely pruinosed. *E. caesia* male is a steely blue colour on the prothorax, thorax and abdomen; the prothorax, thorax and first abdominal segment become pruinosed with age. The anal appendages of the males of both species are different but since both species have the habit of holding the superior anal appendages pulled into the body, the distinctive shapes may not be immediately evident. Examination with a hand lens is sufficient to see the sharp ventral spine of *E. caesia* and the blunted ventral spine of *E. centralis*. The females of the two species are quite similar but can easily be distinguished by the processes on the posterior lobe of the prothorax. *E. centralis* displays a pair of prominent backward pointing spines that are just visible to the naked eye. *E. caesia* has a lobed posterior border that is devoid of spines.

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