

SHORT COMMUNICATIONS

**NOTES ON THE SYNONYMY, DISTRIBUTION AND THREAT STATUS OF *ELATTONEURA OCULATA* (KIRBY, 1894), AN ENDEMIC DAMSELFLY FROM SRI LANKA (ZYGOPTERA: PROTONEURIDAE)**

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Based on an examination of the material in the Natural History Museum in London, *Elattonneura bigemmata* Lieftinck, 1971 is a junior synonym of *E. oculata* (Kirby, 1894). A map of the currently known distribution of the sp. is provided. According to the IUCN criteria, due to its very small area of occupancy in SW Sri Lanka and pressure on its habitat, *E. oculata* is to be classified as globally endangered (EN).

INTRODUCTION

In his very valuable account on the Odonata of Ceylon, M.A. Lieftinck described an endemic new protoneurid, *Elattonneura bigemmata* (LIEFTINCK, 1971), known only from the holotype male, collected at Labugama, SE of Colombo in Western Province of Sri Lanka (formerly Ceylon). As implied by etymology, Lieftinck commented: "...This new species has no near allies and is easily distinguished from its congeners by the presence of a pair of large, brightly coloured spots on the upper surface of the head." Only in 1995 additional material of *E. bigemmata* became available. I described and figured the allotype female and supplemented additional information to that in the original description (BEDJANIČ, 1998; 2002).

*E. bigemmata* is included in all checklists of the odonate fauna of Sri Lanka (DE FONSEKA, 2000; BEDJANIČ, 2004; 2006) and of the World (DAVIES & TOBIN, 1984; BRIDGES, 1994; STEINMANN, 1997; TSUDA, 2000).

*ELATTONEURA OCULATA* VS *ELATTONEURA BIGEMMATA*

As early as in 1894, based on extensive odonate material brought from Ceylon by Col. Yerbury, W.F. Kirby compiled the first *Catalogue of the described Neuroptera Odonata (dragonflies) of Ceylon* (KIRBY, 1894). He listed 76 species for the island and described some interesting new taxa, including the new species, *Disparoneura oculata*. The short but clear description of the female, collected at Kottawa, E of Colombo in Western Province of Sri Lanka, was concluded by the remark: "... Differs from *D. tenax* and allies by the two conspicuous yellow spots on the vertex between the eyes."

The status of *Disparoneura oculata* Kirby remained unchanged for thirty years when F.F. LAIDLAW (1924) included it in his Catalogue. However, it was F.C. FRASER (1933), who synonymized *D. oculata* Kirby with *D. centralis* (Hagen in Selys). His description of the female *D. centralis* includes: "Differs very considerably from the male, which accounts for Kirby describing it as a separate species under the name of *D. oculata*; ... rest of head steely black, with a small rounded dark ochreous spot between the root of antennae and anterior oculus on each side..." Fraser's synonymy was followed by most subsequent authors (e.g. BRIDGES, 1994; DE FONSEKA, 2000).

To solve the puzzle of the conspicuous postocular spots mentioned in different sources and taxa I visited the Natural History Museum (NHM) in London, where material collected by Yerbury and Kirby's type are available. As expected, *Disparoneura oculata* and *Elattonneura bigemmata* are synonyms, of which *E. oculata* (Kirby, 1894) has priority (INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1999).

TAXONOMY

*Elattonneura oculata* (Kirby, 1894)

*Elattonneura bigemmata* Lieftinck, 1971 syn. nov.

The NHM collection has only two males(!), both collected by Col. Yerbury and labelled as: "Kottawa, 24-4-92"! One of these, with broken abdomen and the broken part well preserved and glued on the card attached beside it, is marked as the type of *Disparoneura oculata* Kirby and preserved in the special section of the collection (Fig. 1). The second male, marked as a paratype, is perfectly preserved in the other box along with its congeners. This could point to an error in Kirby's description (of the "female"), which might in fact be of the male. There were apparently no females known either to Kirby, or to Fraser, who obviously, without checking the type material, repeated the mistake and incorporated the parts of Kirby's text into the description of *Elattonneura centralis* female. Accordingly, the characters of *E. centralis* and *E. oculata* are mixed in the misleading description

of female *E. centralis* in FRASER (1933). But as already stated, the description of female *E. oculata* can be found in BEDJANIĆ (1998; 2002), while description of female *E. centralis* and also the missing *E. caesia* will be provided shortly (N. vander Poorten & K. Conniff, pers. comm.).

Herewith, *Elattonneura oculata* is removed from the synonymy of *E. centralis*.

### ON THE DISTRIBUTION OF *ELATTONEURA OCULATA*

*Elattonneura oculata* is endemic to Sri Lanka. Apparently, it is rare and nowhere abundant. Currently it is known from a dozen localities in southwestern part of the island (Ratnapura, Matara, Colombo, Kegalle and Galle districts), which is known as the “Wet Zone” and listed among global “hot-spots” for its outstanding biodiversity.

In order to update the species distribution, all published and unpublished records are presented here:

- (1) Western prov.: Colombo distr., Kottawa, 24-IV-1892; 2♂, Col. Yerbury (from KIRBY, 1894); –
- (2) Western prov.: Colombo distr., Labugama, 24 mi ESE of Colombo, 9-III-1962; 1♂, A. Perera (from LIEFTINCK, 1971); –
- (3) Sabaragamuwa prov.: Kegalla distr., Kithulgala, Kelani Valley Forest Reserve, 21-X-2004, 1♂ (photographs), A. Salgado; –
- (4) Sabaragamuwa prov.: Ratnapura distr., right tributary of the river (Black river) that flows into the Kalu Ganga at Ratnapura, 5 km SE from the village Gallella, 29-I-1995, 6♂, 1♀, M. Bedjanić (from BEDJANIĆ, 2002); –
- (5) Sabaragamuwa prov.: Ratnapura distr., stream 500m SW of the Sinharaja Field Research Station, Sinharaja Forest Biosphere Reserve, 1-II-1995, 1♂, 1 tandem (photographs), M. Bedjanić (from BEDJANIĆ, 2002); –
- (6) Sabaragamuwa prov.: Ratnapura distr., stream in Sinharaja Forest Biosphere Reserve, 10-V-2006, 2♂ (photographs), K. Conniff; –
- (7) Southern prov.: Galle distr., lake at Udagama, 14-IV-2004, 1♂, 1♀ (photographs), K. Conniff; –
- (8) Southern prov.: Galle distr., Hiyare Forest near Udagama; 7-X-2006; 1♂, 1♀, 1 tandem, K. Conniff; –
- (9) Southern prov.: Matara distr., Deniyaya, Gin Ganga River at Pitadeniya Forest Camp in Sinharaja Forest Biosphere Reserve, 4-XI-2001, 2♂, M. Bedjanić & A. Šalamun; –
- (10) Southern prov.: Matara distr., Deniyaya, Kakuna Falls on Aranuwa Dola Rivulet in Sinharaja Forest Biosphere Reserve, 4-XI-2001, 3♂, 1 tandem, M. Bedjanić & A. Šalamun; –
- (11) Southern prov.: Matara distr., Deniyaya, main path from the entrance to Sinharaja Forest Biosphere Reserve to the Kakuna Falls on Aranuwa Dola rivulet, 29-IV-2003, 3♂, 2-V-2003,

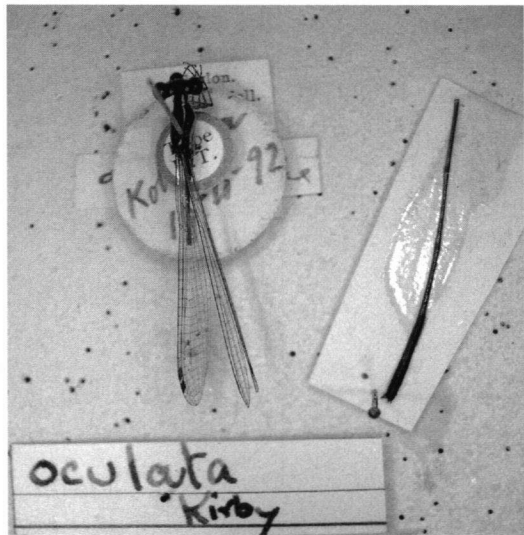


Fig 1. Type specimen of *Elattonneura oculata* (Kirby, 1894) from the collection of NHM London. – (Photo: M. Bedjanić).

5♂, M. Bedjanič; – (12) Southern prov.: Matara distr., Deniyaya, right tributary of Gin Ganga at Elawatta Tea Factory, 30-IV-2003, 3♂, M. Bedjanič; – (13) Southern prov.: Matara distr., Deniyaya, Gin Ganga river 2,5km upstream of Deniyaya village, 30-IV-2003, 2♂, M. Bedjanič.

## CONSERVATION ASPECT

Altogether ca 120 odonate species are currently known from Sri Lanka, including some new endemic species that are in the process of description. The level of endemism is extremely high, with about 47.5% of taxa confined to the island. The families Chlorocyphidae, Euphaeidae, Protoneuridae, Platystictidae, Gomphidae and Corduliidae consist almost exclusively of endemic taxa, thus making the odonate fauna of Sri Lanka additionally interesting for biodiversity and ecological studies (BEDJANIČ, 2004; 2006).

A rough estimation that more than 80% of the described species confined to Sri Lanka can be classified as endangered, is of considerable conservation concern. Only recently, this fact was recognised on the global scale. In 2006, 20 highly threatened dragonfly species were officially included on the new IUCN Global Red List of Threatened Animals (BEDJANIČ, 2005). Although *Elattonneura oculata* was not included into this unenviable company, the author's later assessment of the species in the frame of the global IUCN Red Listing Species Index (RLSI) project, clearly showed that it is endangered on the global scale.

As shown from the currently known records and Figure 2, *E. oculata* occurs only in southwestern Sri Lanka. It is predominantly restricted to the vicinity of small streams and rivulets in the remaining primary rainforest, which is a severely fragmented habitat, under threat of further destruction. Many potential habitats in the southwestern and central parts of the island were completely destroyed during the last decades. According to the criteria and subcriteria of the IUCN Red List Categories, Version 3.1 (IUCN 2001), the extent of occurrence of *E. oculata* is estimated at clearly less than 20.000 sqkm, but

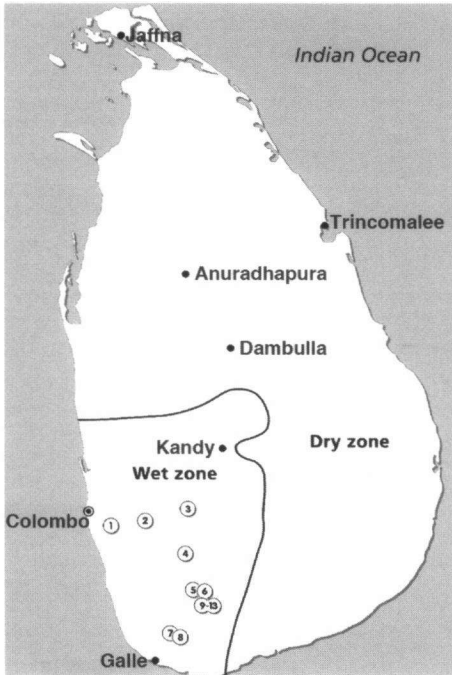


Fig 2. Currently known distribution of *Elattonneura oculata* (Kirby, 1894).

its area of occupancy is speculated at even less than 500 sqkm. Consequently, *E. oculata* is to be classified as globally endangered (EN) species.

The destruction of primary and secondary rainforests, destruction of forest corridors along streams, pollution and other pressures on streams and rivers in the southwestern and central parts of Sri Lanka are continuously the major threat for exceptionally rich endemic odonate fauna of the island (BEDJANIČ, 2004; 2006). *E. oculata* is no exception in this respect. Estimated indirectly from the perspective of its currently known ecological requirements and habitat demands, its populations have surely declined during the last decades. However, numerous recent records may indicate that its future survival is not as precarious as in some other dragonfly species on Sri Lanka.

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