Ephemeroporus quasimodo sp. nov. (Crustacea: Cladocera: Chydoridae), a new species from the Brazilian Cerrado

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Abstract

A new species of Chydoridae cladoceran (Crustacea: Cladocera: Chydoridae) is described from the Cerrado (a Brazilian tropical savanna ecoregion), Central Brazil. Ephemeroporus quasimodo sp. nov. differs from other species of the genus in a high dorsal keel on carapace and posterior part of the head shield, which resembles a hunchback. Parthenogenetic females, ephippial females and males are described, including details of trunk limb morphology. The species is endemic to shallow wetlands found in the Cerrado, where pristine conditions are preserved. Some questions on genus morphology and taxonomic status of Ephemeroporus species occurring in Brazil are discussed.

Key words: Anomopoda, Chydorinae

Introduction

Information on the Cladocera (Crustacea) species in Brazil is still incomplete, despite old history of studies (Richard 1895, Sars 1901) and the recent effort in reducing the gaps of knowledge of the Brazilian biodiversity, supported by governmental agencies (Santos-Wisniewiski et al. 2011).

Aquatic biota of the Cerrado (a Brazilian tropical savanna ecoregion) is a target of several projects of the Research Group on Aquatic Environments of the Universidade Católica de Brasília (GEEA). The projects have been directed to studies of pristine aquatic ecosystems, which could offer reference data for evaluation and restoration efforts in this domain.

The intensification of the cladoceran inventory due to performing of these projects led, apart the offering a list of species for previously unstudied areas (Sousa & Elmoor-Loureiro 2012, 2013; Sousa et al. 2013), to the first record of the genus Monospilus Sars, 1862 from the Neotropical Region (Sousa & Elmoor-Loureiro 2013), as well finding of new endemic species, such as Celsinotum candango Sinev & Elmoor-Loureiro 2010. Other new species have been recognized, although not yet formally described, as Ephemeroporus sp. listed in Sousa & Elmoor-Loureiro (2012).

Of ten Ephemeroporus species presented in the world checklist of freshwater Cladocera taxa, six have been reported from the Neotropical Region (Kotov et al. 2013): Ephemeroporus acanthodes Frey, 1982, Ephemeroporus archboldi Frey, 1982, Ephemeroporus barroisi (Richard, 1894), Ephemeroporus hybridus (Daday, 1905), Ephemeroporus poppei (Richard, 1897), and Ephemeroporus tridentatus (Bergamin, 1939). Of these species, just E. poppei has not been reported from Brazil.

In Brazilian freshwaters, the majority of the records belong to three species—E. barroisi, E. hybridus, and E. tridentatus—co-occurring throughout almost all the territory (cf. Elmoor-Loureiro 2000, 2010). In the Southern region, however, E. hybridus is the single species reported (Hollwedel et al. 2003; Bohrer et al. 1988; Gazulha 2012).

Less frequently reported taxa are E. archboldi, cited from Lagoa Bonita, Federal District (Smirnov 1996), and E. acanthodes, found in the upper Paraná river floodplain (Serafim-Junior et al. 2003) and Lençóis Maranhenses (Van Damme & Dumont 2010).
description available for *E. tridentatus* (Paggi, 1983). However, Paggi (1983) registered three setae on filter comb of trunk limb V, while four setae were observed in *E. quasimodo* sp. nov., which is the number proposed in the description of the genus in Alonso (1996). On the other hand, Alonso (1996) reported the occurrence of the accessory seta on trunk limb I of the genus (which is seen in figure 127A, for *E. phintonicus*). Despite numerous attempts, the accessory seta was not found in *E. quasimodo* sp. nov., and it should be pointed out that it was also not mentioned or drawn for *E. tridentatus* (Paggi, 1983). Therefore, a more thorough study on trunk limb morphology of the different species of *Ephemeroporus* is necessary, allowing the parameters for the genus to be established.

With addition of the new species, the list of *Ephemeroporus* in Brazil rises to six species: *E. acanthodes*, *E. archboldi*, *E. barroisi*, *E. hybridus*, *E. quasimodo* sp. nov., and *E. tridentatus*. Nevertheless, this list should not be considered as complete.

As previously discussed in the literature, what is called *E. barroisi* around the world represents a group of cryptic species (Frey 1982; Kotov et al. 2011). The difficulties for bringing light to this complex of species derive from the lack of types or specimens from type locality (Syria). Separation of North American *E. acanthodes* (Frey 1982) and Iberian *E. margaleffi* and *E. epiaphantoii* (Alonso 1987) was based on the comparison with specimens from Iran regarded as true *E. barroisi*. Then Yalim & Çiplak (2010) assumed that specimens from Mediterranean Anatolia, Turkey, represent the species originally described by Richard, and provided a description of parthenogenetic female, ephippial female and male. Unfortunately, their redescription was not so accurate (Kotov et al. 2012) and could not support a future revision of Brazilian populations identified as *E. barroisi*, in order to clarify their taxonomic status.

Another question that could be raised is the validity of the occurrence of *E. archboldi*, in Brazil, which was reported only from Lagoa Bonita, Federal District (Smirnov 1996, as *E. cf. archboldi*). However, this pond has been sampled for about 30 years, mainly for educational purposes, and this species has not been identified again in any sample (Elmoor-Loureiro unpublished data).

The present paper describe a new species of *Ephemeroporus* from the Brazilian Cerrado biome, whose most diagnostic feature is the high dorsal keel on the carapace and posterior part of the head shield. Its potential use as a bioindicator of the pristine condition of the Cerrado’s freshwaters was also discussed, and some questions were raised on morphology and taxonomic status of *Ephemeroporus* species occurring in Brazil, which will hopefully contribute to inspire future studies.

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References


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