



Article

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Full description of *Cordulagomphus primaerensis* from Santana Formation (Lower Cretaceous of Brazil) (Odonata: Aeshnoptera: Proterogomphidae)

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Abstract

Thanks to the discovery of a new specimen, we discuss and confirm the differences proposed by Petrulevičius and Martins-Neto, 2007 (in Bechly, 2007) between *Cordulagomphus (Procordulagomphus) primaerensis* Petrulevičius and Martins-Neto, 2007 and its close relative *Cordulagomphus (Procordulagomphus) michaeli* Bechly, 2007.

Key words: Insecta, Lower Cretaceous, Crato Member, Brazil, taxonomy

Introduction

Although known by one species from the English Wealdian (Vernoux et al. 2010), the Lower Cretaceous Cordulagomphinae were very diverse in the Santana Formation of Aptian age, Brazil (Martill et al. 2007; Bechly 2010). They share some synapomorphies with the Proterogomphinae from the Upper Jurassic of Solnhofen, Germany. Both subfamilies are included into the Mesozoic family Proterogomphidae (Bechly 1998; Bechly et al. 1998). Petrulevičius and Martins-Neto in Bechly (2007: 213) provided a diagnosis, comments and drawing of *Cordulagomphus (Procordulagomphus) primaerensis* Petrulevičius and Martins-Neto, 2007. After the discovery by E.M. and D.A. of a new specimen (Figs. 3-4) that we attribute to this species, we consider useful to give a full description, diagnosis, figures, and a new discussion on the affinities of this species.

Material and methods

The holotypes of the described species of Odonata from the Santana formation are stored in different institutions foreign to Brazil. The holotype described herein is the first one stored in a Brazilian repository, following the recommendations of Petrulevičius et al. (2001) based on Brazilian law of protection of its fossiliferous heritage. In this study we follow the wing venation nomenclature of Riek and Kukalová-Peck (1984), emended by Kukalová-Peck (1991), Nel et al. (1993) and Bechly (1996). The higher classification of fossil and extant Aeshnoptera is based on the work of Bechly et al. (2001).