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Description of a new genus and species of Cerophytidae (Coleoptera: Elateroidea) from Africa with a cladistic analysis of the family

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Abstract

The family Cerophytidae is revised to include *Afrocerophytum vix* **gen. nov.** and **sp. nov.**, from the tropical rainforest of western Africa. *Afrocerophytum* and *A. vix* (type locality: Ivory Coast, Tai Region, neighborhood of Gouleako village) are described and illustrated. A key to the Cerophytidae genera is provided. The new genus is distinguished by four autapomorphies: anterior edge of phallobase rounded and not emarginate, base of tergite IX not fused at middle with the base of sternite IX, basal region of penis weakly constricted, and coxites divided into proximal and distal lobes. A cladistic analysis was conducted including all 22 species of known Cerophytidae and using representatives of the families Eucnemidae, Throscidae, Brachypsectridae and Elateridae as outgroups. The strict consensus cladogram produced from the resulting eighteen most parsimonious trees is (*Cerophytum* (*Afrocerophytum* (*Brachycerophytum*, *Phytocerum*))). *Cerophytum*, the Holarctic clade, is the sister group of the Gondwanian clade (*Afrocerophytum* (*Brachycerophytum*, *Phytocerum*)); the Ethiopian clade *Afrocerophytum* is the sister group of the Neotropical clade (*Brachycerophytum*, *Phytocerum*).

Key words: *Afrocerophytum*, new species, biogeography, Ethiopian Region, phylogeny, rare click beetle

Introduction

In 2004, just after publication of a revision and cladistic analysis of the family Cerophytidae Latreille, 1834 (Costa *et al.* 2003), we received from Albert Allen (Boise, Idaho) the photos of a presumed female of Cerophytidae from Africa, who had received them from Ivo Jenis (Prague, Czech Republic) with a request to confirm its identification. Then we began several contacts to discover additional specimens in different European and African museums in order to obtain study material. Finally we gathered a male and three females. The male is very similar to the females, including antenna shape, which is very short and serrated in both sexes. The male was collected on the Ivory Coast, more than 1800 km distant from Equatorial Guinea and Gabon. Although at present the forests around the Gulf of Guinea (including the Ivory Coast) are fragmented and disjunct, they were wet tropical forest formations since the Upper Cretaceous until the Middle Eocene (Maley 1996). Based on the currently available data, we decided to consider the four specimens to represent one new species and its geographic distribution related to the tropical rainforest of western Africa.

This work focuses on the description of *Afrocerophytum vix* **gen. nov.** and **sp. nov.**, including illustrations and a key to Cerophytidae genera. It further focuses on a revision of the phylogeny of Cerophytidae (Costa *et al.* 2003) in order to elucidate the relationships of that new taxon from the Ethiopian Region, with Holarctic and Neotropical representatives of the family.

Material and methods

This study was done at the Laboratory of Coleoptera Systematics, Evolution and Bionomics of the Museu de

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