

Elatocladus velenovskyi nom. nov., a characteristic conifer of the Bohemian Cretaceous Basin

by

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With 3 plates and 1 text-figure

Abstract

The status of the genus Elatocladus is discussed in the light of a new concept of fossil-taxa. Elatocladus velenovskyi J. Kvaček nom. nov. of sterile conifer twigs is described from the Peruc-Korycany Formation (Cenomanian) of the Bohemian Cretaceous Basin (Czech Republic). New material from the locality of Prague, Hloubětín-Hutě, is reported on and, due to the well-preserved cuticle, a description of the epidermal characteristics of the taxon is included. The Sequoia heterophylla type material from the type locality Peruc is revisited, a lectotype selected and a nomen novum Elatocladus velenovskyi introduced for nomenclatural reasons. Similar previously described Elatocladus species from the Cretaceous strata are discussed. Based on its epidermal characters and macromorphology the new material is preliminarily assigned to the family Cupressaceae s.l. A marked similarity is recorded between E. velenovskyi and E. montanensis from the Early Cretaceous of Montana, and E. smittiana from the Late Cretaceous of Greenland. Associated reproductive structures, i.e. the ovuliferous cones "Sequoia" cylindrica Velenovský & Viníklář, "Sequoia" oblonga Mařík, and "Sequoia" elongata Bayer are briefly discussed.

Key words: Elatocladus, conifer, Cenomanian, Late Cretaceous, Bohemia.

1 Introduction

Conifers have represented a very important group within fossil plants since the late Palaeozoic (Rothwell et al. 1997). In the Mesozoic, particularly Cretaceous, modern families of conifers (Pinaceae and Cupressaceae) diversified and played an important role in plant communities (Farjon 2008). The Peruc-Korycany Formation of the Bohemian Cretaceous Basin provides a fossil flora very rich in conifers. It is sometimes referred to as the Peruc flora and is one of the key classical Cretaceous floras of the world. The first major studies of the flora were those of Velenovský (e.g. 1882, 1883, 1884, 1885a, 1885b, 1888a, 1888b, 1889). In more recent years, the flora has been studied by Z. Kvaček (1992), and J. Kvaček (e.g. 1992a, 1992b, 1995, 1999, 2000a, 2000b, 2007), J. Kvaček & Knobloch (1997), and J. Kvaček & Eklund (2003), J. Kvaček et al. (2005) with the description of many new taxa and the revision of previously described taxa. Conifers formed an important part of the Bohemian Cenomanian vegetation; they were represented in all plant assemblages. In mesophytic habitats, the genera Pinus, Dammarophyllum, and Brachyphyllum occurred (J. Kvaček 2003, J. Kvaček 2007). In swampy habitats, Elatocladus, Cunninghamites, and Quasisequoia were common (J. Kvaček 1999, Bosma et al. 2012). Also in halophytic habitats, mangroves were colonised by conifers, particularly

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