

## Abstract

The studied material comes from the Bohemian Cretaceous Basin, Peruc-Korycany Formation Cenomanian age, from the localities Pecínov and Praha - Malá Chuchle. Recent plants were used for comparison with fossil xerophyte and mesophyte plants. Fossil and recent material was macromorphologically documented and analyzed using cuticular analysis.

In the systematic part, eleven fossil taxa from divisions Lyginopteridophyta, Cycadophyta, Ginkgophyta, Pinophyta and Magnoliophyta were described. From these, three new taxa were established: bennetite leaf of *Zamites mirovanae* sp. nov., angiosperm leaves of *Dicotylophyllum labutae* sp. nov. and *D. pecinovense* sp. nov. Based on the study of macro- and micro-morphology, it was distinguished which part of the studied material belongs to the extremophytes. Observations of micromorphology showed that plants that were exposed to water stress were trying to overcome this constraint by adjusting their micromorphology.

Analysing previously published and newly acquired data helped to separate halophytes from other studied fossil taxa. These plants from the environment of salty marshes and tide-influenced swamps are characterised by thick cuticle, stomata embedded in stomatal chamber and/or surrounded by raised rims or papillae. They show various forms of wrinkles or papillae on their external surface of epidermis and are comparatively abundant in sediments of the Peruc-Korycany Formation. The boundary between mesophyte and xerophyte could not be unequivocally distinguished, but at least there were two xerophytes identified, namely *Pseudoctenis babinensis* and *Dicotylophyllum labutae*. Xerophytes are characterized by thick cutinisation of epidermis, stomata in deep stomatal chambers surrounded by raised rims or papillae. The external side of epidermis is formed by various ornaments, wrinkles or papillae. Mesophytes are characterized by xerophyte-like features, but these features are much less pronounced. These plants originally grew in the vicinity of streams, rivers and sedimentation basins. They are comparatively rare in the fossil record of the Peruc-Korycany Formation.

Comparison with recent plants has confirmed the extremophile character of many floral taxa of the Peruc-Korycany Formation. The presence of xerophytes indicates a seasonal climate, which probably dominated during the Cenomanian in the Bohemian Massif.

Key words: extremophytes, xerophytes, mesophytes, halophytes, cuticle analysis, Cretaceous, fossil leaves