

Abstract

The study of continental facies is a difficult exercise. Indeed, the poor preservation of the structures or the complexity of the interactions between the living organisms and the minerals, make continental facies difficult to understand. The aim of this study is to observe how *Microcodium* can be used as a proxy to improve the palaeoenvironmental reconstructions in continental environments. However, this is all the more difficult since their mysterious origin has not yet been elucidated. Two major hypotheses best define the origin of this fossil: they could be calcified roots remains of specialized vascular plants or the product of a symbiosis between two microorganisms. The results of this study suggest that *Microcodium* could be the remains of C3-plants roots, capable of dissolving and re-precipitating the carbonate substrate they colonized. Living in an alkaline environment, they seemed to propagate best in soils with low detrital input. The collected data tend to show that the warm climate related to the *Microcodium* was a "monsoon-based" climate: contrasting seasons alternating between dry phases and abundant rainfall.