

A microcrinoid zonation for the Late Cenomanian–Campanian interval – Chalk Group, Anglo-Paris Basin, and its potential for global correlation

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Microcrinoid remains, mostly comprising isolated ossicles belonging to the pelagic order Roveacrinida, are often abundant in chalk facies residues, but have previously been largely ignored or overlooked by micropalaeontologists. Detailed sampling and processing of the Late Cenomanian–Campanian interval in the Anglo-Paris Basin (northern France, southern England) has yielded over 50 species of Roveacrinida, most of which are undescribed forms belonging to the families Saccocomidae and Roveacrinidae. Higher diversity faunas are found in the Late Turonian, Mid-Coniacian and Early Campanian intervals, separated by units of lower diversity and variable abundance. The material provides the basis for a microcrinoid biostratigraphy for the Late Cenomanian–Campanian which recognizes 25 zones, with a mean duration of approximately 400 kyr.

Because Roveacrinida were members of the mesoplankton, living in the upper part of the water column, they were widely distributed by ocean currents, and some species, such as *Applincrinus cretaceus*, have a global distribution. Furthermore, they do not show significant latitudinal variation in their distribution, and therefore have potential for Boreal-Tethyan-Austral correlation. It is therefore likely that at least part of the zonation is very widely applicable and offers potential for long-distance correlation. For example, the zonation developed in the Early Campanian of the UK can be identified in the Gulf Coast of the USA, and permits the identification and quantification of hiatuses in central Texas. It is also expected that Roveacrinida are present in deep sea cores, but their value is perhaps limited by the small volumes of sediment usually available.