

## **New stratigraphical and faunal data on the type Maastrichtian (uppermost Cretaceous; southeast Netherlands and northeast Belgium)**

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The introduction in 1975 of a formal lithostratigraphical subdivision for Upper Cretaceous and lower Paleogene strata in the southeast Netherlands and northeast Belgium has led to a renewed interest in the biostratigraphy and macropalaeontology of these rocks. The use of bioclasts (size range of 1–2.4 mm) has resulted in more reliable correlations between the various units of the Vaals, Gulpen, Maastricht and Kunrade formations, often challenging previous interpretations based solely on lithological features. Attempts are now being made to link such bioclast-based ecozones to sequence stratigraphy and flint rhythmicity (Milankovitch cyclicity), with a strontium isotope backup.

Key index fossils for interregional/intercontinental correlations include dinoflagellates, benthic and planktonic foraminifera, calcareous nannoplankton, ammonites (mostly heteromorphs, such as scaphitids and baculitids), belemnitellid coleoids and inoceramid bivalves. Mainly as a result of close co-operation with non-professional palaeontologists in the area, numerous new records have been published over recent years and more work is underway. Because of the generally coarse-grained nature of these biocalcarenes and the lack of any significant overburden, preservational biases (i.e., aragonite dissolution, selective silicification processes) tend to blur the overall picture. However, obrution deposits at some levels have yielded unsurpassed echinoderm Lagerstätten. Towards the top of the Maastricht Formation (uppermost Maastrichtian), the shallowing trend in these (sub)tropical settings is reflected in the wealth of micro- and macrofossil taxa and of bioerosional ichnotaxa. Numerous new records of sponges, scleractinian corals, octocorals, cirripedes and decapod crustaceans, rudistid and other bivalves, gastropods and ammonoids have been made. Sea grass (*Thalassocharis bosquetii*, occasionally silicified) and other marine plants such as *Mosacaulis spinifer* are common as well. Vertebrates include teleost fish (with a few near-complete skeletons, mostly dercetids), sharks, rays and chimaeras, as well as marine turtles, mosasaurs (five taxa in all) and the odd plesiosaur. Terrestrial elements include various plants, mammals, lizards and birds. Near the Cretaceous-Paleogene (K/Pg) boundary section at the Geulhemmerberg subterranean galleries, east of Maastricht, at the former Curfs quarry unit IVf-7 of the Meerssen Member (Maastricht Formation) has an indigenous earliest Paleocene molluscan fauna with articulated bivalves and survivor species amongst heteromorph ammonites.