

Archaeocyathan knowledge base: influence of the sections orientation for identification

Adeline KERNER^{1*} and Régine VIGNES-LEBBE²

¹Research Centre on Palaeobiodiversity and Palaeoenvironments, UMR 7207, Muséum National d'Histoire Naturelle, Paris, France

²Research Centre on Palaeobiodiversity and Palaeoenvironments, UMR 7207, Université Pierre et Marie Curie, Paris, France

* kerner@mnhn.fr

Specialists of Cambrian studies may encounter in their researches some Archaeocyatha remains. These important fossils for biostratigraphy as well as paleogeography or paleoecology must be imperatively studied in oriented thin sections to be identified. Keys, easy to use and adapted even to incomplete specimens, were lacking before 2011, when a knowledge base was established using the software XPER². A free access interactive key is then available online including the 307 valid genera described with 120 descriptors (85 morphological and ontogenetic, 8 stratigraphic and geographic and 27 defining taxonomic ranks). A correlation table links traditional terminology and computerized one. The identification accuracy, computer-aided or not, depends on the number and on the type of available thin sections. Quantifying the influence of the orientation of these sections, rather impossible with the classical method is easier was possible with the knowledge base and XPER² thanks to the automatic checking of the genera discrimination. A third of genera can always be discriminate with only a transverse section. With an oblique section or a combination of transverse and longitudinal sections, only seven to twenty out of the 307 genera (around five percent of genera) cannot be discriminate at all.