Geophysical Research Abstracts
Vol. 20, EGU2018-13409, 2018
EGU General Assembly 2018

Morphospace analyses of the endemic heteromorph ammonite genus Aegocrioceras (Lower Cretaceous, Hauterivian, NW-Germany)

Rene Hoffmann (1), Kenneth De Baets (2), Kurt Wiedenroth (3), and Manuel F.G. Weinkauf (4)

(1) Ruhr-Universität Bochum, GMG, Paleontology, Bochum, Germany (rene.hoffmann@rub.de), (2) GeoZentrum Nordbayern, Friedrich-Alexander Universität Erlangen-Nürnberg, Germany, (3) Am Hohen Holze, Garbsen, Germany, (4) University of Geneva, Department of Earth Science, 13 Rue des Maraîchers, Genève, 1205, Switzerland

Despite the fact that heteromorph ammonites often show a large range of intraspecific variability that variability has rarely been quantified. This is largely due to the rarity of significant amounts of well-preserved material from a single bed and the time consuming procedure to collect the morphological data including ontogenetic changes. Here we quantify the intraspecific variability of 87 specimens of the Hauterivian endemic ammonite genus Aegocrioceras. All specimens have been collected from a single bed in the clay pit Resse in northwestern Germany (Lower Saxony Basin). Data for the conch morphology (diameter, whorl height, whorl interspace, rib spacing) have been collected in 45 degree steps, i. e. over the complete course of preserved ontogeny, using the new software CONCH. The CONCH software will be made freely available. Assessment of intraspecific variation results in the recognition of a single species within our “population” with a high variation in shell morphology including whorl interspace, umbilical width, and whorl expansion. The documented morphological variability cast doubt on the number of valid species for Aegocrioceras and demonstrates the significance of such studies for palaeodiversity studies. Future studies could use our approach to study how intraspecific variation changes through time.