

Typologic versus population concepts of chronospecies : implications for ammonite biostratigraphy

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Acta Palaeontologica Polonica 30 (1-2), 1985: 71-92

The effects of the application of horizontal (population) as opposed to vertical (typologic) taxonomy on precision of ammonite chronozonation are discussed and an example of stratigraphic inference that can be derived from the population method is presented. An almost complete macroconch from Świętoszewo, Pomerania, is compared with a standard, biometrically studied series of samples from the Early Volgian of Brzostówka, Central Poland. Specimens identical morphologically with that from Świętoszewo can be found among extreme end-members of the population variability much above and below the horizon of the best fit with the mean for the sample. Time correlation is thus a probabilistic kind of inference as the probable identity of time decreases with increasing distance from the horizon of the best fit. For this reason vertical (typologic) diagnoses of chronospecies cannot result in better and more reliable correlations than a horizontal (population) one. Because the typologic species concept leads to false representation in phylogenetics and biogeography it is proposed to abandon its use in biostratigraphy.

Key words: ammonite, biostratigraphy, chronospecies, taxonomy, correlation

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