

Numerical Taxonomy Contribution to the History of Quantitative Nummulites Research

Dedicated to the 80th Birthday of Professor György Bárdossy

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Abstract: During the process of classification of biota, an important logical operation is definition. One of its forms is description, enumerating the most characteristic anatomical and morphological features of the living being to be determined. This is also called Typology. When quantitative operations are executed in order to exactly identify the characteristics, one has to deal with Biometry.

Sporadic attempts to define species by means of biometry had been made earlier, but it was only during the past 2-3 decades that these became common. A new approach is taking shape: Numerical Taxonomy.

*The unicellular Nummulites are morphologically rather varied. Accordingly, they are very suitable for this kind of study. The Nummulites possess planispirally coiled tests. Their complicated internal structure has many common features. For this reason it is necessary to characterize these quantitatively, in order to distinguish the different taxa from each other. A early as in 1881, DE LA HARPE expressed the distance between two whorls of the test by a ratio which he named "pas". Later P. ROZLOZSNIK (1924) characterized several more features quantitatively: he introduced the spire diagram for the growth of the spire, the chamber height / length for the shape of chamber, the number of septa in one quarter of the equatorial section. H. SCHAUB from 1951 on uses these regularly in his diagnoses. C. W. DROOGER (1971 extended the quantitative approach to the relations between thickness and diameter of the test, the relation between the beginning and the second chamber, as well as to the expressing in degrees the archedness of the septa. In the past two decades the biometrical methods has been used largely for the taxonomical separation of species groups (MATTEUCCI, R., 1982; RACEY, A., 1992; PAPAZZONI, C.A., 1998). Recently it was possible to clarify some taxonomical problems presented by *N. millecaput* specimens of different stratigraphic position by the application of fuzzy clusters (BÁRDOSSY, GY. FODOR, J., & KECSKEMÉTI, T., 2003).*