



Upper Cretaceous Foraminiferal, Radiolarian and Nannoplankton Zonal Scheme (Eastern Europe)

Valentina Vishnevskaya (1), Vladimir Beniamovsky (1), Ludmila Kopaeich (2), and Maria Ovechkina (3)

(1) Geological Institute, Moscow, Russian Federation (valentina.vishnaa@mail.ru), (2) Lomonosov Moscow State University, Moscow, Russian Federation (lfkopaevich@mail.ru), (3) Paleontological Institute, Moscow, Russian Federation (saccamina@gmail.com)

Pessagno E. (1976) first proposed the correlation of the subtropical Upper Cretaceous deposits of the California (North America) on the basis of planktonic foraminifera and radiolarians. Composite scheme for the dismemberment of the bottom sediments of the World Ocean by microfossils was developed based on the study of deep sea drilling materials (Sanfilippo, Riedel, 1985). The existing standard schemes (Hardenbol et al., 1998) were used for the correlation of the Upper Cretaceous sediments of the Tethyan region (Western Europe).

The integration of new micropaleontological and biostratigraphic data from sequences of Eastern European Platform (within the Russian sector) as well as surrounding areas allows us the creation of a united micropaleontological zonal scale for the peri-Tethyan region of the Eastern Europe.

The proposed very promising integrated scheme for the dismemberment of the Upper Cretaceous sediments of the Eastern European area consists of 15 planktonic foraminiferal subdivisions with 19 infrazonal events, 23 benthic foraminiferal zones, 10 radiolarian zonal subdivisions with 18 infrazonal bioevents and 26 nannoplankton zones. The divisibility of the radiolarian zonal scheme is considerably inferior to the schemes created for the same deposits on foraminifera and a nannoplankton that is caused by a sporadic distribution of radiolarians and also insufficient study of the Late Cretaceous radiolarians. At the same time, the radiolarian scale is applicable to those intervals of sequences where other groups of fauna are absent. It is by such sequences, there is a need for a unified zonal scale of microfossils. The estimated diversity of radiolarian assemblages in geological past was used to establish not only different tempos of evolution for these siliceous microorganisms (Vishnevskaya, 2008, 2009), but also chronostratigraphic intervals.

The planktonic and benthic foraminiferal zonations show substage and intrastage subdivisions, whereas nannoplankton and radiolarian zonations allow the establishment of stage boundaries, being mutually complementary. This work was supported by the Russian Foundation for Basic Research (projects 12-05-00690, 12-05-00263, 13-05-00447).