Abstract Title

The Prosek section (Middle Volga Region, Russia), possible GSSP candidate for the Callovian Stage

Abstract Text

Continuous sections of the suitable thickness and completeness across the Bathonian / Callovian boundary rich in ammonoids and well-correlated with their counterparts from other regions are uncommon around the world. Recently we undertook integrate study of the Prosek section of the total thickness ca. 10 m and after detailed analysis of ammonite succession we proposed this section as a GSSP candidate (Kiselev, Rogov, 2007). Here we present also new information concerning its mineralogy, cyclicity and magnetic properties (Manikin et al., in press). Bathonian/Callovian boundary beds in the Middle Volga Region Volga area includes mixture of Boreal, Subboreal and Submediterranean taxa, providing well basement for long-distance correlation. We recognize the following zones and faunal horizons (bottom-up): Upper Bathonian, Calyx Zone, infimum horizon (with Cadoceras calyx, C. infimum, Kepplerites svalbardensis, etc); Bodylesvkii Zone, bodylevskyi horizon (with Cad. bodylevskyi, K.ex gr. keppleri). Lower Callovian, Elatmae Zone, breve horizon (with Cad.breve, K. ex gr. keppleri, and Macrocephalites jacquoti), frearsi horizon (differ from underlying horizon by presence of other species of Cadoceras, C. frearsi), quenstedti horizon (with Cad. quenstedti, M. aff. jacquoti or M. prosekense). The same ammonite succession traced through adjacent areas of the Russian Platform. Presence of the common ammonite species in the Bathonian–Callovian boundary beds of Europaen Russia, Germany, and East Greenland are permit correlate of its infrazonal scales. Correlation of the largest part of the Elatmae Zones with the Apertum Zone is based on phylogenetic analogues of the index-species. Results of the sinking fraction investigation permits to recognize four members which also well-revealed by means of grain composition analysis and changes in petromagnetic properties. These members correspond to four successive stages of the basin development. Boundaries of these members marked by more or less abrupt shift in considered features, nevertheless both biostratonomical and sidementological analysis shows continuity of the section and absence of the gaps near to the boundary under consideration. The Bathonian-Callovian boundary determined at the base of breve horizon (=base of the bed 6 in Kiselev &Rogov, 2007) coincides with base of member II. Ferromagnetic fraction responsible for magnetic susceptibility oscillation represented by magnetite particles of 0,1-0,16 mm size. Angular outline of these particles suggest for terrigenous origin of Fe_3O_4. Changes through the remanent magnetization graph caused by oscillations of magnetite contents and reflect changes in terrigenous input. This study was supported by the Russian Foundation for Basic Research (project no. 06-05-64284).

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