



## **Lithology and biostratigraphy of marine red beds of the eastern Caucasus**

**E. Shcherbinina**

Geological Institute RAS, shcherbinina@ginras.ru

Within the upper Cretaceous marine succession of the E Caucasus, the pink and red colored sediments periodically occur. The lower red bed (RB1) spans the lower middle Turonian interval (lower part of nannofossil zone CC12) and culminates the thick mid-Cretaceous (Aptian to lower Turonian) sequence contained the frequent intercalations of sediments rich in organic matter corresponded to different episodes of OAE1 and OAE2. The RB1 is made up of about 15 m thick pink to dark red massive thin-bedded limestone. It is characterized by scarce macro- and microfossils and increased micarb value and evidently corresponds to switch from high to low productive basin. The RB1 is superimposed by sequence of alternated massive greenish limestone and thin-bedded marlstone (~100 m) with persistently poor microfossils and abundant micarb corresponded to stratigraphic interval from upper middle Turonian to upper Coniacian (upper CC12 to lower CC16 nannozones). In the uppermost part of sequence, several intercalations of dark thinly laminated marlstone, possibly corresponded to OAE3, occur. The second red bed (RB2, 9 m) immediately overlies this "anoxic" interval. It consists of homogenous dark red bioturbated soft limestone at the base and dark pink limestone with stylolitic sutures and large echinoids in the upper part. Nannofossil assemblage of RB2 (CC16) is relatively more diverse and includes common *Watznaueria* spp. that implies more likely oligotrophic environment. Upsection, the 15 m thick layer of white compact limestone contains very poor nannofossils of zones CC16-CC17. It is overlapped by 25 m thick sequence of dark pink bioturbated homogenous limestone with stylolitic sutures (RB3) poor in nannofossil as well. The Paleogene succession of the E Caucasus shows Selandian to Ypresian sequence (~90 m) composed of dark red alternated limestones and marls restricted to central Dagestan. It overlies the thick Danian siliceous limestone and contains abundant and various calcareous microfossils (nannoplankton and foraminifera) that suggest normal

oxic condition. The microfossil similarity of this sequence to those of other Caucasian areas opposes the special environment of red sediment accumulation. Three levels of Cretaceous RBs and the Paleogene red sequence of the E Caucasus show a variety of lithologic and paleoecologic features that implies distinguished natures of RBs. This research is supported by RFBR Project no. 04-05-64835.