The first detailed record of Permian-Triassic boundary sediments in deep-water facies in North-East Asia (Kolyma-Omolon region)

Biakov, A.S., Horacek, M., Vedernikov, I.L. and Zakharov, Y.D.

1 N.A. Shilo North-East Interdisciplinary Scientific Research Institute, Far East Branch, Russian Academy of Sciences, Portovaya 16, Magadan, 685000 Russia, abiakov@mail.ru

2 BLT Wieselburg HBLFA Francisco-Josephinum, Rottenhauserstrasse, 1, 3250 Wieselburg, Austria

3 Karl-Franzens, Universität Graz, Heinrichstrasse, 26, Graz, 8010 Austria

4 Far East Geological Institute, Far East Branch, Russian Academy of Sciences, Stoletiya Prospect 159, Vladivostok, 690022 Russia

The first detailed record of Permian-Triassic boundary (PTB) sediments in deep-water facies in the North-East Asia (Balygychan basin, Kolyma-Omolon region) is obtained. Pre-Otoceras part of the Changhsingian stage (Pautovaya Fm) where Late Changhsingian bivalve Clariaioides aff. primitivus (Yin) was found [1] are characterized here by relatively high δ13Corg values (about –23–25 ‰), decreasing to event-level (lower part of the Gherba Fm) to –27 ‰. This level supposedly corresponds to the base of Otoceras layers and is associated with the extinction of typical Permian fauna (Inoceramus-like bivalves of Intomodesma genus and gastropods Straparolus sp.), and the complete disappearance of the bioturbation. Previously, we recorded the signs of anoxia at this level [2]. In the lower part of the Gherba Fm δ13Corg values constitute about –27 ‰, gradually decreasing up the section to –29 ‰. Weakly expressed negative excursion (–29.9 ‰) is fixed at approximately 5 m below the first finds of ammonoid Tompophiceras (about 80 m from the event level), with which we associate the position of the PTB. The new data show a good agreement with both the Setorym section in the South Verkhoyansk region [3], where the same excursion is fixed and determined the approximate position of the PTB, and with a number of other sections of the Boreal and Tethyan superrealms.

This study was supported by the Russian Foundation for Basic Research, projects No 14-05-00217, 14-05-00011, and Austrian National Grant for the IGCP 572 project and is contribution to IGCP 572 and 630.

References

