

Paper Number: 1352

Late Cretaceous ostracod fauna from the Shenjiatun section (Songliao Basin, Northeast China) and its biostratigraphic, palaeoenvironmental implications

Wang Y. Q.¹, Liao H. Y.^{1,2}

¹ Key Laboratory of Economic Stratigraphy and Palaeogeography, Nanjing Institute of Geology and Palaeontology, CAS, 39 Beijing East Road, Nanjing 210008, China; e-mail: yqwang@nigpas.ac.cn

² University of Chinese Academy of Sciences, Beijing 100049, China; e-mail: hyliao@nigpas.ac.cn

Cretaceous ostracods are highly relevant for palaeoenvironmental interpretation and biostratigraphic correlation of non-marine formations in Songliao Basin. A large number of ostracod samples have been collected and studied (e.g. Hanai [1]; Nechaeva [2]; Hao et al. [3]; Ye et al. [4]; Xi et al. [5]; Qu et al. [6]) from drill cores (oil and gas exploration projects, and the SK-1 continental scientific drilling program). However, our samples were collected from an outcrop adjacent to Shenjiatun village. The ostracod fauna, found in Shenjiatun section of the Songliao Basin, consists of 7 species in 5 genera, including *Mongolocypris magna*, *Ilyocyprimorpha sungarinensis*, *Ilyocyprimorpha netchaevae*, ?*Latonia liaukhenensis*, *Daqingella arca*, *Daqingella elegana* and *Candona prona*. This fauna is dominated by *Mongolocypris magna*, which first occurs in the first member of the Nenjiang Formation and becomes extinct at the fifth member of the Nenjiang Formation. Following the ostracod distributions scheme of the Songliao Basin by Ye et al. [4], the species *Ilyocyprimorpha sungarinensis* only occurs in the third member of the Nenjiang Formation and two species from genus *Daqingella* (*Daqingella arca* and *Daqingella elegana*) have been found in the third and fourth members of the Nenjiang Formation. *Candona prona* has a long stratigraphic range (from third member of the Qingshakou Formation to the third member of the Nenjiang Formation). Therefore, according to the ostracod fauna, the deposits of the Shenjiatun section correspond to the third member of the Nenjiang Formation. Upon the basis of palynostratigraphic and marine – non-marine correlations, and high-resolution palaeomagnetic dating, the age of the third member of the Nenjiang Formation is Middle Campanian (Sha [7]; Deng et al. [8]). All ostracod species from the Shenjiatun section belong to superfamily Cypridoidea. Like *Cypridea*, many of them are thought to have resting eggs, enabling them to colonize temporary water bodies.

The studied material from the Shenjiatun section show moderately well ostracod specimens. The majority of the studied specimens are represented by closed carapaces indicating limited transportation, a soft substratum and relatively high rate of sedimentation (Oerli [9]). In addition, most of species are present generally only as adults or the final larval stage. Following Whatley [10] [11], this indicates a high-energy biocoenosis or a gradational thanatocoenosis.

Acknowledgments. This work is supported by Science Foundation of Jiangsu Province of China (BK20141056) and is also contribution to UNESCO-IUGS IGCP Project 632.

References:

- [1] Hanai T (1951) Journal of the Faculty of Science, Imperial University of Tokyo 7: 403-430
- [2] Nechaeva et al. (1959) Ostracodes of Lower Chalk Deposit of Valley Sunlyao, 1-54
- [3] Hao et al. (1974) Cretaceous–Tertiary Ostracods from Songliao Plain, 1-81
- [4] Ye et al. (2002) Cretaceous ostracods and biostratigraphy in Songliao Basin, 1-312
- [5] Xi et al. (2012) Hydrobiologia, 688: 113-123
- [6] Qu et al. (2014) Journal of Paleontology, 88: 786-798

- [7] Sha (2007) *Cretaceous Research*, 28: 146-170
- [8] Deng et al. (2013) *Palaeogeography, Palaeoclimatology, Palaeoecology*, 285: 44-54
- [9] Oerli (1971) *Bulletin du Centre de Recherches, SNPA*, 5: 137-151
- [10] Whatley (1983) In: *Proceeding of the English International Symposium on Ostracoda*, 51-77
- [11] Whatley (1988) In: *Ostracoda in the Earth Science*, 103-123

