

Early Permian ostracods from the Tham Nam Maholan section, Loei Province, northeastern Thailand; the paleoecological insight

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Abstract

Ostracods (crustacean) are one of microfossils which play an important role in interpretation of paleoecology and paleoenvironment. This research is the first one using ostracods to interpret environment of deposition of limestones, a part of the Early-Permian Nam Maholan Formation. The studied section is located about 25 km southeast of Wang Saphung district, Loei Province, and is on the northwest side of the Phu Tham Maholan. The section of thick- to very thick-bedded, white to light gray, wackstones to packstones was investigated and sampled every five-meter interval. Ostracods were disaggregated from the limestones by Hot Acetolysis technique (Lethiers & Crasquin-Soleau, 1988; Crasquin-Soleau *et al.*, 2005). Ten of twelve samples yielded ostracods which are well preserved. They can be classified to 3 orders, 5 families and 11 genera; *Bairdia*, *Baschkirina*, *Liuzhinia*, *Silenites*, *Basslerella*, *Paraparchites*, *Shemonaella*, *Kirkbya*, *Knightina*, *Youngiella*, and *Polycopse*. These genera are known to be benthic and shallow-marine forms.

The paleoecological characteristic of ostracod families and/or superfamilies can be used to determine condition of their habitats (Costenzo & Kaesler, 1987; Melnyk & Maddocks, 1988). The assemblage which is dominated by Bairdioidea (58.1%), Paraparchitidea, Kirkbyoidea, Polycopidae (10.30% each), Kloedenelloide (7%), and Cytherideidae (4%) suggests open marine environment, shallow water, subtidal, with wide range of salinity to normal salinity. The oxygen level in sea water can be estimated from percentage of filter feeding ostracods (Lethiers & Whatley, 1994). The filter feeders encountered here are of 27.6% including members of Paraparchitidea, Kirkbyoidea and Kloedenelloide. This points to the normal marine condition where oxygen concentration is around 5.5 mL/L.

Keywords: Permian/ ostracods/ Loei/ paleoecology/ paleoenvironment