Study of Ostracodes in Abderaz Formation in Kopet – Dagh Basin

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Abstract

Kopet-Dagh sedimentary basin is located in the east northern of Iran and contains sediments of Jurassic to recent ages. One of the lithostratigraphic units in this basin is the Abderaz Formation. The formation is made up of calcareous shales, marly shales, and chalky limestone. In order to study paleontology and recording of ostracoda of this formation in Hamam Ghaleh section samples. Some of the samples proved to be rich in Ostracodes and some 23 genera and 42 species were recorded.

Age of Abderaz formation is Late Turonian – Early Santonian and too the formation was deposited in a shallow – open marine environment with warm climate conditions.

Discussion

Abderaz Formation is the one of Formations Kopet Dough basin in North East Of Iran. Lithology composed of green to bluish calcareous shale, marly shale and 3 to 4 chalky limestone band. This Formation is located on the Aitamir Formation with disconformity and Abderaz Formation very slow transverse to Abtalkh Formation. This section located in 20 kilometer in Mashhad to Kalat road before Hamam Galeh Village. In this section Abderaz Formation had 607 meter thickness. This study is perfect and universal study on the Abderaz Formation, removed 44 samples in this section collected and samples identified after labrotary methods and take photo with electronic microscope. recognized 23 Genera and 42 Species to osteracods. Frequency of osteracoda in samples are very variable. identified this osteracods in this section are as follow: Alatacythere sp., Bairdia pseudoseptentrionalis, Bairdia sp., Bairdoppilata gliberti, Brachocythere romboidales, Brachocythere sphenoides, Brachocythere sp., Cythereis cf. bicornis, Cythereis dullasensis, Cythereis lixula, Cythereis ornatissima, Cythereis sp1., Cythereis sp2. Cytherella cf. parallela, Cytherella ovata, Cytherella speetonensis, Cytherella sp1. Cytherella sp2. Cytherelloidea granulosa, Cytherelloidea stricta, Cytherelloidea sp. Cytheropteron fossatum, Dolocytheridea polymorphica, Eucythere solitaria, Haplocytheridea cf. H.plummeri, Haplocytheridea sp. Krithe whitecliffsensis, Macrocypris sp. Neocythere virginea, Nigeria cf. N.arachoides, Nigeria sp. Paijenborchella sp. Paracypris wrothamensis, Paracypris sp. Polycop sp. Pontocyprella harrisiana, Pontocyprella recurva, Pontocyprella sp. Pterygocythereis sp. Schuleridea sp. Trachyleberidea geinitzi, Veenia cf. V para triplate(plate1)

Numerous of osteracoda from this formation are two family Platycopeda and Podocopeda. From frequency genus in family Platycopeda are Cythereella, Cytherelloidea (. Abdol Mohsen, E. Morsi, S. 2000). and Podocopida are Schuleridea, Pterygocythereis Macrocypriis Pontocyprella ,Bairdoppilata . analysis of diversity diagram (fig1) exist variable in diversity in this formation indicate variable depth because tectonic in basin abderaz formation. depth and lithology and nutrient, and diversity in this fossils group is effected. with high depth, osteracoda is low and with low depth osteracoa is high. Genous in this formation Cythereis
with 6 species 29% from fossils group and Bairdia with 2 species 20% from fossils group, this genus exist in most of samples. Cytherelloidea with 3 species 15% from fossils group and Cytherella 5 species 14% and Nigeria with 8% and Brachycythere with 4%. Age of Abderaz formation in this section basis of osteracoda Upper Turonian – Coniacian – Lower Santonian, corolated with ages of index dinoflagellates and foraminifera, bivalvia, echinodermata, in this formation created many progradation and retrogradation in the active basin. For example Cytheropteron, Pracypris in 1, 2, 9, 10, 11, 14, 15, 19, 24, 25, 29, 30, 36, 42, 43 samples indicates progradation and high depth (Moore, R.C., 1961) and Bairdia with Bairdia pseudoseptentrionalis Bairdia sp, Brachycythere sp Cythereis lixula Cythereis dullasensis Brachycythere romboidale Cythereis cf. bicornis in 4, 6, 7, 16, 17, 18, 20, 23, 27, 32, 33, 34, 35, 38, 39, 41, 44 samples indicates regression and low depth.

Conclusion of study osteracoda Alatacythere, Cythereis, Cytherelloidea Cytherelloidea granulosa Cytherelloidea stricta Cytherelloidea sp in most of Abderaz samples indicates warm climate in Abderaz formation environment.

Reference


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1. Krithe whitecliffsensis
2. Paracypris sp.
3. Krithe whitecliffsensis
4. Cytherella sp.
5. Krithe whitecliffsensis
6. Cytherella ovata
7. Cythereis lixula
8. Cythereis ornatissima
9. Cythereis dullasensis
10. Cythereis sp.
11. Cytherelloidea stricta
12. Cythereis sp.
13. Cytherelloidea stricta
14. Haplocytheridea sp.
15. Cythereis cf. bicornis
16. Haplocytheridea cf. H.plummeri
Figure 1: diagram of osteracoda diversity