

## **Studing in Abtalkh formation based on ostracodea in ghaleno section**

**Soleymannori zinat,**

Department of geology, Faculty of sciences, Islamic Azad University, Mashhad branch, Mashhad, I.R.Iran

[zinatnori@yahoo.com](mailto:zinatnori@yahoo.com)

**Allameh mohsen,**

Department of geology, Faculty of sciences, Islamic Azad University, Mashhad branch, Mashhad, I.R.Iran

**Torshizian Habibollah ,**

Department of geology, Faculty of sciences, Islamic Azad University, Mashhad branch, Mashhad, I.R.Iran

### **Abstract**

*In the North & E. North of Iran Kopeh Dagh basin has formed and begins from khazar sea ,passes through Turkmenistan and Iran, then inter Afghanistan . Abtalkh formation is one of the sedimentary unit of this basin that has been studied based on another fossils several times. Abtalkh formation has named from Abtalkh village on the E. North of mashhad. The supposed area is located in No. 135 Kilometers of Mashhad-Kalat road, with geographical features North latitude 59 46 54 and East longitude 36 55 42, and its lithology is mostly of blue-gray chalky shale with layers of marl. There were thin layers of clay sandstone and marl –sandy limestone, near the upper level of mentioned formation. Its down boundary with Abderaz formation and upper boundary with Neyzar formation is conformable and its thickness is 960 M. For studying of formation according to Ostracoda , 49 samples have been taken. For separating Ostracoda of surrounding sediment, samples were washed and then were photographed by electronical microscope. Based on species from genus Xestoleberis , Cytherelloidea we suggested, shallow & warm basin sedimentary for this section on that time.*

**Key words:** Kopeh Dagh – Abtalkh – ghaleno - Ostracoda

### **Preface**

Ostracodeas derived from Arthropoda type and from two kinds of Crustacea. They are small Crustacea (0.2 – 0.5 mm) surrounded by a pearl. This pearl consists of two chitinous or chalky pans which hinge together in the dorsal. Although Ostracodeas live in oceanic planktonic environments, on sea floor, sweet-water lakes and even humid jungle soil, they usually categorized in shallow water benthics and among fossil microfossils are even fewer than foraminifera.

Since Ostracodeas are discovered in all watery environments, using them in biostratigraphy and knowing sedimentation environment is useful.

Variety and multiplicity of Ostracodeas depends on elements like amount of food, light, salinity, Oxygen, temperature, depth and ... . For instance, variety and multiplicity of Ostracodeas in deep and stable off-shore waters are more than shallow and energetic waters. But these variety and multiplicity reduce a bit lower than full light region.

Because of instability of environment, the variety of Ostracodeas in brine waters is also low.

Because of their role in sedimentation environment change and determination of age, Abtalkh formation in Qaleno section has been studied.

### **Discussion**

In this study, 46 pieces of Abtalkh formation sediments has been sampled. After washing and preparing, they have been transferred to special cells by 00 paint brush under optical microscope and photographed by S.E.M for further researches. Pictures compared with available catalogues and articles and fossils identified; and finally with statistical methods is done Paleoechological constraction, environment of fossils and Paleo environment.

Ostracodeas are one of the most important fossil collections in Abtalkh formation. In general, Ostracodeas are one of those fossil collections which live in low-depth places and are varied in that depth. In variety and multiplicity, studied samples are high in number and number of species in low sections of formation is high and in up sections decreases gradually which may caused by instability of basin and Trigenus material flow to sediment environment. That's why there are Marly sandy limestone and sandstones in upper section of formation.

In Qaleno section the real thickness of Abtalkh formation is 980(m) which lower boundary with Abderaz formation and Upper boundary with Neizar formation are gradual and specified by shales to sandy shales conversion and sandstones of Neizar (fig 1,2).

Since Ostracodeas are very sensitive to sediment environment, continental correlations in species level are not useful. That's why small changes in sediment environment causes different Fons. So in such these basins Fons are locally endomic, whereupon available Ostracodeas are different with adjacent sedimentary basin.

Their role for changing environmental conditions increases concerning high sensitivity of them to environmental changes and therefore local Fons. Existing of *Brachlythere* Genus in Abtalkh formation, which is limited to litoral environment, means low depth in this sediment basin. Existing of *Xestoleberis* Genus, which is represents Oxygen and light environment and discovered on see-plants, means almost 50 meters depth presents low depth in this sedimentation basin (fig3). On the other hand, in this formation, multiplicity of *Cytherelloidea* Genus species is because of warm weather conditions in Abtalkh formation sediments sedimentation time.

### **Conclusion**

- 1) Available Ostracodeas represents low-depth and warm temperature in Abtalkh formation sedimentation basin.
- 2) Number of Ostracodeas decreases from lower sections of formation to the upper sections.
- 3) The number of available Ostracodeas in formation is high in multiplicity and variety.

### **Refrences**

- ⊗ Afhar harb,A. (1979). Geology of Sarakhs area and Khangiran gas field .Natn. IRAN Oil Co. Paper presented at 8 th session of ECAE Worving party of senior Geologists .Bandug 1970.
- ⊗ Hadavi,F.(1378). Ostracodea of Abderaz formation.Threed symposium of IRANIAN geological society. Shiraz university.

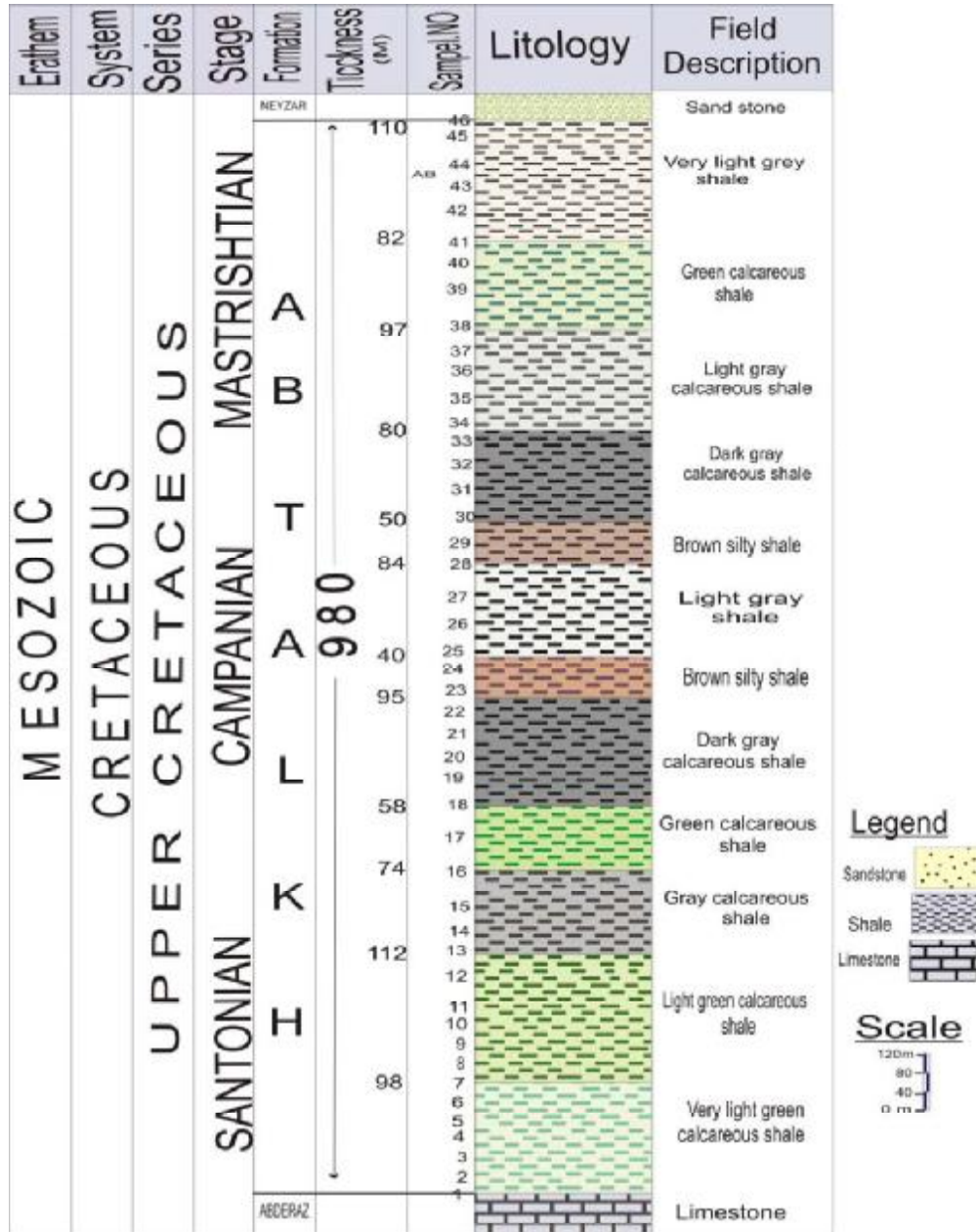


Fig 1: stratigraphic column of Abtalkh formation

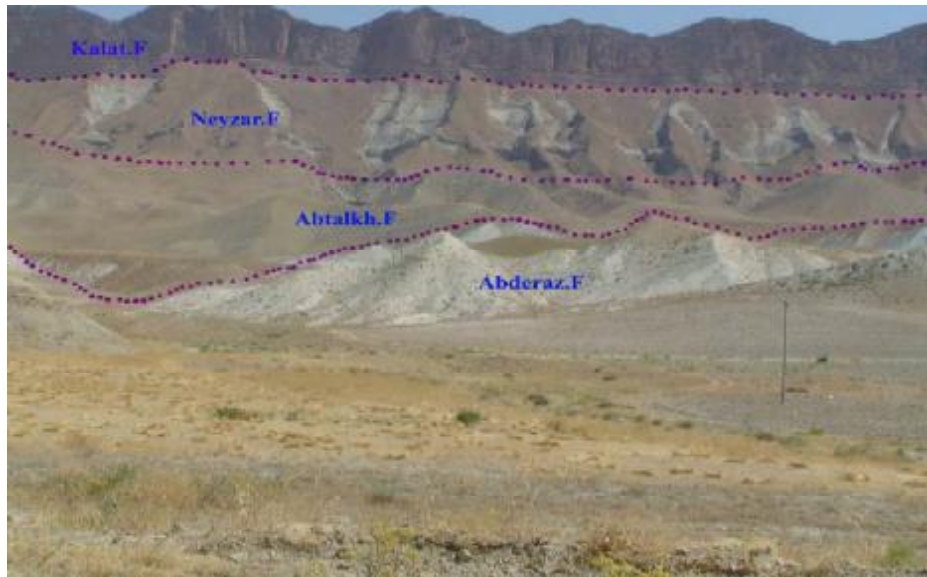
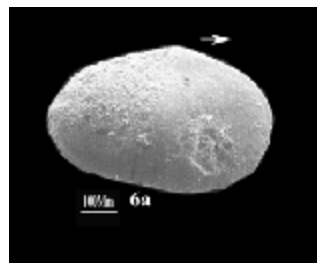
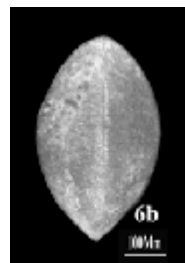


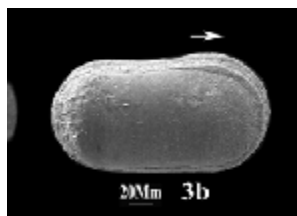
Fig 2 : view of Abtalkh formation



(a)



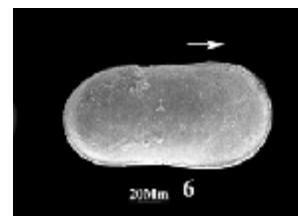
(b)



(c)



(d)



(e)

Fig1 : (a) Genus: Xestoleberis, right valve, (b) Genus: Xestoleberis, Ventral View  
(c) , (d), (e) Genus: Cytherelloidea