



## **Sedimentology and paleogeography of Plio- Pleistocene Bakhtyari Formation at Ghalat and Garu- Charmakan Mountains , NW of Shiraz , Iran**

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The studied region is located at Folded Zagros Zone , in which Bakhtyari Formation , as the youngest one in this Zone , has a considerable extension in the region .The region consists of some low – high anticlinal and synclinal structures which are parallel to each other and exhibit beautiful outcrops. The conglomeratic Bakhtyari and calcareous – dolomitic Asmari- Jahrum Formations overlie the synclines and anticlines respectively . Two elevated synclines (Ghalat and Garu- Charmakan Mountains) form abnormal reliefs with the height of more than 3000 meters and , contrary to the most part of the Folded Zagros , overhanging adjacent anticline , which separates them . The trend of the reliefs is NW – SE , and Cenozoic continental and marine deposits form their stratigraphic succession .In this succession , from top to bottom , a series of Formations crops out : (1) Plio- Pleistocene Bakhtyari F. (polymictic conglomerate ) ; (2) Upper Miocene Aghajari F.( conglomerate , sandstone , mudstone) ; (3) Lower Miocene Gachsaran F. (marl and lenses or layers of gypsum and anhydrite in marl) ; (4) Oligocene – Miocene Asmari F.(limestone and dolomitic limestone ) ; and (5) Eocene Jahrum F.( dolomite and dolomitic limestone).

To introduce conglomeratic facies of Bakhtyari F. a number of six cross sections were measured . The information resulted from these measurments showed that , from the view point of its (coarse) clasts composition , Bakhtyari F. generally consists of two types of conglomerates : (1) Limestone – Chert Clasts Supported Conglomerate (LCCSC) , and (2) Limestone Clasts Supported Conglomerate(LCSC). The chronological and spatial relationship between these conglomerates , due to existence of some faults at their approximate boundary, are not easily distinguished, and it seems each has its own independent time and place spreading . Analytical works on sedimen-

tology shows that , in response to the uplifting of Zagros Mountaint Ranges , these coarse grained sedimentary rocks were deposited as fluvial deposits and alluvial fans by ephemeral and permanent bedload supported rivers . These deposits are usually known as alluvial facies . Since two or more lithofacies may genetically be related to each other , some researchers have described alluvial deposits as genetical facies , which may consist of two or more lithofacies. In this research similar description method has been used and , thus , in describing the features of each conglomerate its different, but related, lithofacies have been described likewise . **LCCSC** consists of three different lithofacies : (1) Conglomerate(the dominant facies) , in which the composition is closely related to grain size . Coarser grains are of limestone composition and finer grains are of chert composition ; (2) sandstone , and (3) mudstone. Conglomeratic facies , in view point of its clasts size , is divided into two subfacies : (a) boulder- cobble conglomerate with the composition of dominantly limestone , and (b) pebble – granule (microconglomerate) facies , with the composition of dominantly chert. **LCSC** consists of two different lithofacies : (1) Conglomerate , which is the dominant facies of LCSC (more than 90% of the clasts are of limestone composition), and (2) sandstone , which is subordinate .

Epirogenic movements in Paleogene caused some fluctuations in the sea level of that time , which resulted in a bed of chert microconglomerate at the Jahrum- Asmari contact ; so the conglomerate as the coarse clastic sediments flew in the existing basin in Paleogene – Neogene boundary. The regression of sea in Bourdigalian caused a set of continental environments ( lacustrine , fluvial and alluvial deposits) to occur. These environments, during their existence , recieved a large quantity of sediments, which was due to the erosion of newly uplifted highlands in neighbouring northern parts of Zagros Zone. Accumulation of these sediments caused a pile of them , which its vertical succession thickness reached to more than 5000 meters. The upper part of this succession forms Bakhtyari Formation , which its textural characteristics and sedimentary structures specify a non- marine depositional system and considered as " standard" lithofacies of alluvial fans and braided rivers. Researches on alluvial structures have been done in a large number of tectonic settings , one of which is forland basin. Tradationally , the deposits of forland basins are considered as continental molasse.