

ABSTRACTS OF THE PAPERS PUBLISHED ONLY IN THE TURKISH EDITION OF THIS BULLETIN

THE CONTROL OF THE FORCED - REGRESSION, TRANSGRESSION AND SEDIMENT SUPPLY ON THE SEDIMENTOLOGICAL AND SEQUENCE STRATIGRAPHICAL DEVELOPMENT OF THE BASIN MARGIN DEPOSITIONAL SYSTEMS; ERMENEK BASIN, MIDDLE TAURIDES

Ayhan ILGAR *

ABSTRACT.- The Ermenek basin located on the Bozkır and Aladağ nappes in the central Taurides, is filled with Early Miocene lacustrine elastics (Yenimahalle fm.) and Middle Miocene reefal shelf carbonates. This study concentrates on the facies analysis and sequence stratigraphic framework of clastic basin fill sediments on southern margin of the Ermenek basin. Sediments deposited in alluvial fan, Gilbert-type delta, beach and shoreface environments are transitional laterally and vertically in the succession. These depositional systems are repeated in the vertical section. The control of the lake-level changes in relation with tectonics, climate and sediment supply are also considered besides sedimentary processes on the sedimentological and sequence stratigraphic development of the basin margin depositional systems. Sequence along fault-bounded southern margin of the basin consists of stream-dominated alluvial fan and delta plain deposits, mass-flow dominated-delta foreset deposits and high energy beach and shoreface deposits. Retrogradational or progradational stacking patterns of these facies associations indicate high frequency lake-level changes. Four unconformity-bounded sequences represented by forced regressive erosional surfaces have been identified within the Yenimahalle formation. Lowstand systems tracts of alluvial fan deposits overlie the sequence boundaries. Retrogradational stacking pattern of Gilbert-type delta, shoreface and beach deposits overlapping alluvial fan surface constitute transgressive systems tracts of 1. 2. and 3. sequences. Progradational Gilbert-type delta of sequence 4 represents highstand systems tract over lowstand systems tract. The sequences show paleogeographic changes that developed with lake-level changes during depositional evolution. The development of the facies, systems tract and sequences were controlled by tectonism, climate and sediment supply besides sedimentary processes. Tectonism resulted in the change of accommodation space (increasing or decreasing) by controlling basin subsidence or rise. The amount of water and sediment supply into basin was controlled by climate whereas the distribution and lateral variation of facies within the sequence is attributed to sediment supply and the source area.

MIDDLE - UPPER MIOCENE STRATIGRAPHY OF ÇANAKKALE, NW TURKEY

Eşref Atabey'; Ayhan ILGAR* and Alper SAKITAŞ*

ABSTRACT.- Middle-Upper Miocene terrigenous and marine sedimentary rock units deposited in Truva basin outcrop throughout the eastern shore of Dardanelles. These deposits overlie unconformably Paleozoic schists, marbles, quartzites, Permian-Triassic ophiolites and Eocene volcanic rocks between Çanakkale and Truva; only Eocene volcanics and volcanoclastic deposits in the vicinity of Lapseki, north of Çanakkale. The sedimentary rock units are composed of Middle Miocene Sarıyar formation and Upper Miocene Çanakkale formation. Sarıyar formation overlying metamorphic and magmatic basement units with an angular unconformity contains red-dark red colored alluvial deposits. Çanakkale formation containing marine deposits overlies Sarıyar formation with an unconformity. Çanakkale formation consists of Güzelyalı, Tekkedere and İntepe members that have distinctive lithological components, sedimentary features and depositional environments. These are transitive laterally and vertically to each other. Güzelyalı member that contains mainly fine to coarse sandstones, and lesser amounts of mudstones, siltstones and conglomerates deposited on beach and shoreface. İntepe member is composed of mudstones and siltstones deposited and sandstones. Sandstones developed with the tidal processes have

bidirectional cross-stratifications, planar and trough cross-stratification, flaser and lenticular beds. Tidal channel deposits that have erosional bases in lagoon mudstones are observed. These are made of medium to coarse sandstones, conglomerates and abundant broken shell fragments. Tekkedere member contains algal mat limestones, oolitic limestones being a product of shoals, and conglomerates and coarse sandstones beach. Upper Miocene Çanakkale formation is overlain by Pleistocene marine terraces and Pleistocene-Recent alluvial deposits.

Key words: Middle-Upper Miocene, Stratigraphy, Çanakkale.

SEDIMENTARY INFILL AND GEOLOGICAL EVOLUTION OF ÇAMELİ NEOGENE BASIN, DENİZLİ-SW TURKEY

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ABSTRACT.- Çameli basin is one of the western Anatolian grabens formed during the neotectonic period. The basin contains data which may enlighten neotectonic stage of the region due to its setting and successions. Characteristics of the basin fill are determined by the facies analysis and key data related to time interval of the deposition are provided by using mammalian faunas. NE-SW trended Çameli basin begins to open as a graben under the control of the Dirmil fault at the east and Bozdağ fault at the west during the Late Miocene (10.8-8.5 Ma). Growth faults seen intensively in the preliminary sediments of the basin composed of alluvial fan, river and lacustrine deposits point out an effective extension. After this period, the basin is divided into two parts by an intensive faulting at the Early-Middle Pliocene (3.8-3.2 Ma). Later, the impression of extensional tectonics relatively decrease and the basin turn into a large lacustrine environment. The lacustrine deposits overlap both fault that separate the basin into two parts, and marginal faults and this stage continues until Middle to Late Pliocene (3.5-2.5 Ma). While the lake basin become shallow by filling of alluvial fan and river delta progradation. lacustrine carbonates precipitate in the central part of the basin. After this stage the basin is broken again in Late Pliocene (2.6-1.8 Ma) by two fault systems that are parallel to marginal basin faults indicated with a travertine layer. The final deposits of the basin are alluvial sediments deposited by this faulting stage. According to the growth faults seen in the sediments accumulated after the latest faulting stage, the extension has been reactivated and the Çameli basin more or less has taken recent form.

Key words: Çameli, Neogene, graben infill, Neotectonics, facies analysis, southwest Turkey

GASTROPODA FAUNA OF KASABA MIOCENE BASIN (WESTERN TAURIDS, SW TURKEY)

Yeşim İSLAMOĞLU****

ABSTRACT.- In this study, 37 numbers of gastropoda species which were found in the Uçarsu and Kasaba formations outcropping in the Kasaba Miocene basin, have been determined systematically and their paleogeographic distributions have been told. Species, which were found into the Uçarsu formation such as *Turritella terebralis turritissima* Sacco, *Turritella terebralis subagibbosa* Sacco, *Turritella (Peyrotia) desmarestina* Basterot, *Turbonilla (Mormula) aturensis* (Cossmann ve Peyrot), *Cassidaria tauropomum* (Sacco) and *Vexillum (Uromitra) pluricostata percostulata* (Sacco) belonging to Early Miocene, they haven't been known in the Middle Miocene. *Cerithium zejszneri* Pusch which was found into the Kasaba formation is a species peculiar to Middle Miocene. According to this, the age of Uçarsu formation as Upper Burdigalian and the age of Kasaba formation as Langhian have been accepted. A great deal of the investigated gastropod fauna distributed both in Tethys and Central Paratethys during early and middle Miocene. Most of the fauna such as *Turritella (Turritella) tricarinata* (Brocchi 1814), *Turritella terebralis turritissima* Sacco, *Turritella terebralis subagibbosa* Sacco, *Turritella (Haustator) striatellatus* Sacco, *Turritella (Peyrotia) desmarestina* Basterot, *Turbonilla (Mormula) aturensis*

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(Cossmann ve Peyrot), *Cassidaria tauropomum* (Sacco), *Mitrella (Macrurella) cf. nassoides grateloupi* (Peyrot), *Vexillum (Uromitra) pluricostata percostulata* (Sacco), *Clavatula (Clavatula) calcarata francisci* (Toula), *Conus conoponderosus* (Sacco) and *Conus clavatulus* d'Orbigny only displays widespreading only in Tethys Tethian origine fauna and and typical species demonstrate that the study area is part of the Proto- Mediterranean - Atlantic biogeographic provence. In the study region, the species which are known only Central Paratethian marine stages have been found. *Cerithium zejszneri* Pusch found in Kasaba formation, is peculiar to Lower Badenian and *Murex (Bolinus) subtorularius* Homes ve Auinger is a species characteristic for Karpatian and Badenian. This situation shows wide connection and faunal immigrations also from western central paratethys to mediterrane

Key words: Antalya, Kasaba, Miocene, Gastropoda, Systematic, Paleontology

GRAVIMETRIC MODELING OF BASIN AND RELATION WITH EARTHQUAKE DAMAGES

Hakkı ŞENEL

ABSTRACT.- After the 17 August 1999 earthquake, as the regional distribution of the damaged buildings at Gölcük-izmit and surroundings are examined, it can be observed that some of the buildings in some regions that have the same quality and type with other buildings in other areas have more damage. This work attempts to point out that the concerned situation is closely related with the alluvium and basement topography over lined by the deposit layer as well as the rigidity of the soil. After 17 August 1999 earthquake, considering the allocation of heavy damaged buildings in the study area it can be seen that, they are close to the half basins whose southern sides are open or buried valley walls. This direction is in the way of the Earthquake waves. This situation clearly demonstrates the focusing effects of the earthquake waves. In order to show the focusing effect of the earthquake waves, 785 gravity data in 4 km² area are measured in the settlement of İzmit municipality and their modelling with inverse solution techniques were done to obtain the shape of the basement topography which is covered with alluvium. The location of the collapsed, heavy and intermediate damaged buildings was plotted on the calculated basement map and accordingly basin depth and damage distribution were observed as correlated. This relation will be preliminary information for the locations where the damage would be more concentrated in probable further earthquakes. The basement rock shows a deepening attitude towards the southern part of the study area. Basement topography is clearly formed by the buried sequential valley-hillside structures and slope of buried basin is close to right angle over some places. It is interesting that the damage density on the high stored buildings increases on the alluvial areas that are over the buried valley shape basement topography. The vertical or sub vertical hillsides of the basement topography covered by alluvium can be considered as buried fault planes. The surface topography that is seen as valley-hillside in the northern of the study area shows continuity to the west with the alluvial cover in southern of the study area needs to be taken into consideration of the oblique faulting.

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