

**2nd INTERNATIONAL SYMPOSIUM ON THE PETROLEUM GEOLOGY
AND
HYDROCARBON POTENTIAL OF THE BLACK SEA AREA**

**A STUDY OF TECTONIC UNITS OF
THE AREA ALONG TURKISH-
GEORGIAN BORDER**

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The aim of this study is to map the border area as a whole and evaluate main geological characteristics of the region.

Two main tectonic units are respectively observed along the border area, which are the Adjara-Trialeti unit to the North and the Artvin-Bolnisi unit to the South. The lowermost part of these units, particularly in the study area, is characterized by the Late Cretaceous arc association of the eastern Pontides.

Along the Adjara-Trialeti unit, the Maastrichtian-Paleocene hemipelagic limestones to turbiditic terrigenous clastics overlie the arc rocks conformably and pass gradually upwards to the Eocene volcanic rocks. Middle Eocene volcanic rocks which follow from bottom to top as an alternation of turbiditic rocks and basaltic volcanics, dellenitic volcanics and also shallow marine basaltic volcanoclastic rocks appear to be at least 7 km. in thickness. This sequence is followed conformably by the Late Eocene shoshonitic volcanics.

Along the Artvin-Bolnisi unit, the Maastrichtian-Paleocene shallow marine limestone and turbiditic terrigenous clastic rocks overlie the arc rocks and pass upwards to the Eocene volcano-clastic rocks with local unconformities. The Middle Eocene volcanic rocks show similar succession to that of the Adjara-Trialeti unit and appear to be 1.5-2 km in thickness. This sequence is followed conformably by the Late Eocene shallow marine clastics.

In spite of the differences in terms of thickness, local unconformities and type of rocks units noted above, the Maastrichtian-Eocene sequences of both tectonic units can be correlated and it could also be concluded that Artvin-Bolnisi block played a marginal role for the Adjara-Trialeti basin.

Oligocene shallow marine to continental clastics overlie the both tectonic units conformably and can be interpreted as a regressional sequence.

All these rock units presented above were folded and in places thrust at the end of Oligocene-Early Miocene, in NE-SW trend.

In the study area, Late Miocene-Pliocene continental clastics and volcanics and also Quaternary basalts and andesites overlie respectively all the older units unconformably and represent a molassic deposits of new tectonic period.

As a result of this study, the following conclusions are reached: 1) the facies Adjara-Trialeti units are traced along the Black sea coast in Turkey, as well. 2) there is no any volcanic activity during Maastrichtian to Paleocene. So it can also be noted that the Late Cretaceous arc activity ceased before Maastrichtian time, along the border region.