New findings from surfacing Permian-Triassic transmission in Eastern Taurus (Yahyali, Kayseri, Turkey)

Yumun Z.U.

Balıkesir University Dept. of Geology, Balikesir, Turkey, zyumun@balikesir.edu.tr

Turkey consists of several continental fragments which were joined together into a single landmass in the late Tertiary. During most of the Phanerozoic these continental fragments, called terranes, were separated by oceans, whose relicts - ophiolites and accretionary prisms - are widely distributed throughout the Anatolia. The Anatolide-Tauride terrane south of the Pontides shows Gondwana affinities but was separated from Gondwana in the Triassic and formed an extensive carbonate platform during the Mesozoic. Our investigation area, Küçüksu region (Yahyali, Kayseri, Turkey), is located in the eastern part of the Anatolide-Tauride terrane.

There are late Permian-early Cretaceous old units in and around Küçüksu Region (Yahyalı/Kayseri). There are old Scythian-Anisian carbonate rocks on Permian. These units are overlain tectonically by middle Jurassic (Dogger) – early Cretaceous old carbonate rocks. In this study, both the characteristics of Permian – Triassic transmission and the expression of relationship between Divrikdağı and Küçüksu Formations are aimed. In this scope, five stratigraphic sections are taken from the region and microtextural features and foraminifera content of approximately 200 samples compiled from these sections are observed and biozones of Triassic foraminifera obtained are expressed. As a result of these researches; it is detected that there are *Pachyphloia schwageri, Mizzia velebitana* and *Sichotenella* sp. fossiles in the late Permian level and they compose the highest level of Permian and there is a fossil-free zone in one meter thickness in the border of Permian-Triassic. From the samples taken from this fossil-free level a new foraminiferal specimen is formed with *Cyclogyra* ? sp. cf. *mahajeri, Rectocornuspira kalhori, Ammodiscus parapriscus, Mendrospira pusilla, Hoyenella sinensis and Glomospira sinensis.* Based on these fossils; Scythian age is given to this unit. The new foraminifera specimen that is obtained exists together with *Cyclogyra* ? sp. cf. *mahajeri* and *Rectocornuspira kalhori* fossils and represents the Induan stage of Triassic. Although the shell structure and coiling of this fossil resemble to *Cyclogyra* ? sp. cf. *mahajeri* and *Rectocornuspira kalhori* fossils it has important differences as well. The field that is studied starts with oolitic limestone formed of small and regular structured ooid grains on Triassic-Permian border. It is seen that ooids are processed again through the top and uses ooids at the lower level as core and due to this it is concluded that low environment energy increase towards the upper levels of Scythian. In the upper levels alteration is observed in the ooid covers and microfaultings are observed on the unit. The formation of these deformations is thought to occur as a result of settlement of middle Jurassic – early Cretaceous carbonates on the region.

Observations on the Palaeogene of Samothraki Island: implications for the geology of Rhodope and Thrace

Zagorchev I.[1], Ivanova D.[1] and Bassi D.[2]

[1]*Geological Institute, Bulgarian Academy of Sciences, Acad.G.Bonchev str. Bl. 24, 1113 Sofia, Bulgaria, i_zagorchev@geology.bas.bg*

[2]*Dipartimento di Scienze della Terra, Università degli Studi di Ferrara, 44122 Ferrara, Italy*

The geological setting of Samothraki Island is characterized by Jurassic ophiolites (mostly basaltic pillow lavas, and an igneous suite that ranges from gabbro to plagiogranite) of the Circum-Rhodope belt, and younger sedimentary rocks locally subjected to low-grade to greenschist-facies metamorphism. They are covered by volcanics (ranging from basalts to rhyolites) and intruded by granitoids of Oligocene to Miocene age.

The oldest sedimentary rocks are coarse breccias and conglomerates interbedded with polymictic sandstones and siltstones, and locally, thin limestones. All these rocks underwent

strong deformations and low-grade to greenschist facies metamorphism. The petrography of the pebbles indicates a dual provenance. (A) Almost all ophiolitic petrographies are present: basalts and dolerites (pillow-lavas included), gabbros, diorites, plagiogranites. (B) Pebbles (dominant in the upper parts of the section) from low-grade metamorphics of the Circum-Rhodope flysch or of shallow marine origin (coral-bearing limestone included). Coral remains from a conglomerate pebble found at Aghios Georgios have been determined in the past as Late Jurassic to Early Cretaceous. The age of the conglomeratic formation itself is uncertain – it may be Late Cretaceous or Palaeogene.

The Palaeogene terrigenous formation of Samothraki is referred to the Upper Eocene. However, the lowermost parts of the profile may be of pre-Priabonian, and the uppermost ones, of Early Oligocene age. The formation covers unconformably and transgressively the ophiolites or follows over the conglomeratic formation. Sandstones and siltstones with shaly and limestone interbeds are dominant, in the middle parts of the section being interbedded with thick limestones (packstone and wackestone) rich in foraminifers, corals, corallines, bryozoans, echinoderms, gastropods and bivalves. Locally (Kastro at Hora), the section begins directly with the limestone beds hinting at possible reef facies wedging out inside the sandy molasses facies, and passing into olistostrome. The sedimentary microfacies of the limestones correspond to a proximal middle carbonate platform, and may be correlated with similar facies in Thrace. The limestone beds are usually strongly tectonized, and in the basal parts and along contacts with the basement have been subjected to low-grade metamorphism. Near the Kastro at Hora, thin Palaeogene limestone beds are observed as tectonic insertions within the ophiolites of the basement. Strongly fractured limestone interbeds are often boudinaged, and parts of the section pass into mélange of mixed sedimentary and tectonic origin.

Comparisons with the Palaeogene rock sequences and environments of nearby Rhodope and Thrace basins enable reconstructions of the palaeogeography and palaeogeodynamics. Cretaceous crustal thickening during the collisional orogeny was followed by extensional collapse of the orogen, and formation and closure of several Palaeogene troughs. The formation of the Thracian trough began in Palaeocene times, and continued throughout the Eocene. Locally in Thrace (east of Xanthi) and Samothraki, intense south-vergent thrusting is recorded. During Late Eocene time, lacustrine basins developed in the Rhodope area, and were followed by early Oligocene transgression accompanied by volcanic activity. The evolution of this Oligocene intracontinental volcanic island arc (probably formed by extensional collapse of a “plateau” overriding a detached subducting slab) ended with Late Oligocene regression, transtension along major fault belts, and Early Miocene transpression.

Climatology of Erythemally and Vitamin D Weighted Irradiance at Thessaloniki, Greece, from a NILU-UV Multi-filter Radiometer and a YES UVB-1 Radiometer

Zempila M.M.[1], Meleti C. [1], Bais A.F.[1] and Kazantzidis A.[2]

[1]*Laboratory of Atmospheric Physics, Physics Department, School of Science, Aristotle University of Thessaloniki, 54124, Thessaloniki, Greece, mzempila@auth.gr, abais@auth.gr, meleti@auth.gr*
[2]*Laboratory of Atmospheric Physics, Physics Department, School of Science, University of Patras, 26500, Patras, Greece, akaza@upatras.gr*

A UV monitoring network in Greece was established in 2004, equipped with NILU-UV multi-filter radiometers. It was designed to cover geographically Greece and Cyprus, with nine stations distributed at locations representing different environments. The NILU-UV instrument provides irradiance measurements at five wavelength bands centered at 305, 312, 320, 340 and 380 nm, with full width at half maximum (FWHM) of approximately 10 nm. The irradiance measurements at the five wavelengths are used to derive various products, among them the CIE and the Vitamin D weighted irradiances (dose rates). The measurements are recorded in 1-minute intervals and can provide sufficient details about the daily variation of irradiance.