Bucovinian Nappe. It characterizes the lower half of the algal limestones, overlying Lower Anisian massive dolomites. The *Diplopora annulata* Zone characterizes the Upper Illyrian substage and Ladinian stage of the Middle Triassic. The zone has been identified in both Bucovinian and Transylvanian Nappes. The mentioned zone defines the upper half of the white algal limestones in Bucovian facies and the white-gray limestones in Transylvanian facies. The *Ophthalmidium exiguum* Zone corresponds to Carnian and was only separated in Transylvanian limestone facies. The *Glomospirella friedli* and *Miliolipora cuvillieri* zone characterizes the Norian. The zone was separated only in the Transylvanian Nappes of the Rarau Syncline, where it occurs in two distinct lithologies: nodular red limestones and white limestones. The *Angulodiscus tenuis* Zone corresponds to Rhaetian Transylvanian facies. It was established in the red and grey limestones of the Rarau Syncline. Comparing the zones established by various authors in the Tethysian domain with the zones separated in this study in the Triassic carbonate deposits of the Eastern Carpathians, one will notice similarities and identities, especially at the Olenekian and Anisian stage. Starting with the Upper Triassic, the index-species here proposed are completely different of those that define the zones of the West Carpathians, Bulgaria, or the entire Carpathian-Balkan region. This proves the existence of some particular conditions, specific to sedimentation, within the north region of the Eastern Carpathians.

Biogeographic connections between Thracean-Aegean region and Eastern Paratethys

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The Thracean-Aegean region was an area with mainly continental deposition during long time from the Late Oligocene to the Early Miocene. Sedimentological evidence from the roughly terrigeneous sediments testifies intensive uplift environments in the South Balkanids. Marine connections with the Mediterranean took place via the Pre-Alpine and Slovenian corridors during this time (Rögl, 1998; Popov et al., 2004).

The marine Middle Miocene sedimentation is very restricted in this region: S. Gillet (1957) illustrated Lower Sarmatian (Volhinian?) cardiids and Rückert-Ülkümen (1993) found foraminiferal assemblage with Sarmatian endemic species (such as *Elphidium hauerianum*) from the area west of İstanbul. The upper Sarmatian (Khersonian) Beds with *Mactra caspia*, *M. bulgarica* were described from the same area (Pamir, 1933; Erentoz, et al., 1953; Arıç-Sayar, 1957; Sayar, 1989). Probably, the region was a brackish water gulf of the Eastern Paratethys, extending to the Çanakkale region (Taner, 1997), but without continuation into the Aegean area. Data about the presence of Sarmatian and Maeotian in Macedonia (Stevanovic in Pontien, 1989; Stevanovic, Ilyina, 1982) are erroneous. Lagoonal fauna, of composition very similar to the Maeotian one, is alternated here with the real marine facies bearing *Arca*, big pectens and corals. Similar marine–brackish alternating facies are known in the Alçıtepe Formation outcropping in the northern Aegean, Gelibolu and Çanakkale regions (Sakınç & Yaltırak, 2005, Çağatay et al., 2006, 2007).

Brackish sediments with the Pontian-like mollusk and ostracod fauna are recognized in the whole Aegean Depression from the Northern Greece to Athens area. These deposits of the Choumnikon Formation are characterized by normal polarity and correspond to C3An.1n Subchron (6.30-6.04 Ma). The Choumnikon fauna includes numerous taxa with Paratethyan affinity: endemic lymnocardiines, *Congeria* and ostracods, but also euryhaline marine genera such as *Cerastoderma* and *Mactra* among mollusks, which were absent in the Pontian of Eastern Paratethys as well as in the Pannonian Basin. We believe that the origin of the Choumnikon brackish elements is related to the oldest Pannonian biota. This formation is 40-50 m thick, underlain and overlain by sediments with marine Mediterranean fauna. At the

beginning of the Pontian (~ 6.0 Ma) this fauna populated the Eastern Paratethys. The Pontian brackish mollusks of the Eastern Paratethyan fauna comprised *Congeria, Dreissena, Abra*, inherited from the Maeotian time, and lymnocardiines *(Pseudocatillus, Paradacna, Pontalmyra, Eupatorina, Euxinicardium),* migrated to the Eastern Paratethys (Popov, Nevesskaya, 2000). Two last genera are unknown in the Pannonian Basin, but are present in the Aegean association. The species of the Late Pontian fauna inhabited the Mediterranen at the "Lago-Mare" stage (Esu, 2007).

At the same time, a few brackish basins existed in the Anatolian part with endemic non-Paratethyan fauna: Denizli Basin, in the western Anatolia, with *Theodoxus, Micromelania*, sculptural *Valvata, Radix, Pseudocardita* (Oppenheim, 1918; Taner, 1974a, b; Wesselingh et al. 2008) and Yalova Basin, (Yalakdere formation) in the Eastern Marmara region (Emre et al. 1998).

During the Pliocene continental environments prevailed again in the Thracean–Aegean region. However, earliest Zanclean Mediterranean transgression reached the northern Aegean, Dacic, and Taman basins (Çağatay et al. 2007; Maruntianu, Papaianopul, 1995; Semenenko, 1997).

Later, at the early-middle Quaternary time one-way connection prevailed and the Chaudian *Didacna* of Black sea origin was found in Çanakkale region (Andrussov, 1896; Taner, 1983), and Caspian *Didacna subpyramidata* Pravosl. was described from the middle Pleistocene of the Iznik lake basin (Islamoğlu, 2009). Late Pleistocene connections took place and were described in details based on microphytoplankton (Aksu et al., 1995, Mudie et al., 2002) and mollusks (İslamoğlu et al., 2001; Kazancı et al., 2004). In the latest Pleistocene (Neueuxinian), the Marmara basin was affected by only Paratethys, by interrupting the connection with the Mediterranean (İslamoğlu & Tchepalyga, 1998).

Evolution of drought severity for a 118-year period in the Republic of Moldova

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The Republic of Moldova is among several Balkan countries affected by extreme drought. Some districts in the country suffer from severe droughts approximately once per every 3 years, with serious consequences for the agricultural and food sectors. Any contribution to understanding and predicting drought conditions will be a step toward minimizing drought impacts. Droughts in Moldova were evaluated using meteorological data since 1955 and/or a long time series (1891–2009) recorded at Moldova's State Hydrometeorological Service. Evolution of drought severity for the 118-year and/or 54-year time series is based on the S_i-m drought index, using temperature and precipitation series for the calculations. In addition to meteorological data, the crop yields for corn (*Zea mays* L.), a crop widely grown in Moldova, were used to demonstrate drought impact. The S_i-m shows an increasing tendency toward more intensive and prolonged severely dry and extremely dry summer months. The analysis shows that 86% of the poor yield years were recorded for corn when drought occurred during April and July–August. Corn yield is also highly sensitive to the occurrence of a short drought spell in August (e.g., 1994, 1999, 2003 and 2007). Finally, the negative regression coefficient for corn yield indicates that corn is most vulnerable to extreme droughts during April. This was the second cause for poor yields, and particularly in southern districts during 1946, 1947, 2000 and 2009. In these dry steppe areas, extremely dry Aprils may explain 38% of the variability in corn yield.