bounding fault southwards of the Thermaikos Gulf provides an example for possible tsunami generation at only one segment of NAFZ along an approx. 55 km normal fault at the southern fault-bound margin of the North Aegean Basin.

The Herodotus Histories report on inundations and sea withdrawals occurring during the Greek-Persian war, which occurred near Potidea on Kassandra. In the ancient Greek village Mende we found evidence for a tsunamigenic layer, dated with shells to 2500 BP, which may tentatively be interpreted as the sedimentary remains of the “Herodotus tsunami” in 479 BC. Other tsunamigenic events, e.g. near Sozopoli village, occurred c. 5000 BP.

Triassic and Jurassic radiolarians from the Dinaridic Ophiolite Belt (Zlatibor area, SW Serbia)

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The Dinaridic Ophiolite Belt of western and SW Serbia is made up of ophiolites and widespread mélanges containing different components up to nappe-size, interpreted as radiolaritic-ophiolitic trench fills in front of advancing nappes. Matrix ages of the different mélange complexes are very rare, but play a crucial role in the reconstruction of the emplacement of the ophiolite nappes. From the radiolaritic matrix between different ophiolite, radiolarite and rare carbonate blocks of the ophiolitic mélange in three southern Zlatibor areas (A. south of Trnava in the valley of Katušnica River, B. south of Ljubiš in one double road curve, and C. east of Ljubiš near Visoka village) we isolate radiolarians of Early Callovian to Middle Oxfordian age; therefore the age of this Trnava/Ljubiš mélange Blocks of ribbon radiolarite in the mélange are of Middle (Ladinian) to Late Triassic (Norian) age indicated by radiolarians. These radiolarites are interpreted to derive from the sedimentary cover of the Neotethys oceanic crust. Therefore the age of the reworked oceanic crust must be slightly older than the youngest radiolarite component. A derivation from the Middle Triassic volcanics, which is widespread in the Dinaridic realm, can be excluded. These volcanics are covered by Late Ladinian and Late Triassic shallow-water carbonates, missing in the clast spectrum of the mélange.

According to this radiolarian data the age of the radiolaritic-ophiolitic mélange corresponds to the age of the Sjenica ophiolitic mélange further south. Also the component spectrum is similar. The whole Trnava/Ljubiš mélange succession is interpreted to be a primary sedimentary synorogenic radiolaritic trench-fill sequence that formed simultaneously with nappe emplacement and ophiolite obduction/accretion, overprinted by contemporaneous and younger tectonics forming a typical mélange. This mélange was deposited during the late Middle to early Late Jurassic period coeval with ophiolite nappe thrusting in the Neotethys realm. The depositional area could be interpreted to have been a deep-water trough in front of advancing nappes.

Of special interest is the overlying mélange sequence which consists of different carbonate blocks of Triassic age, of both deep-water and shallow-water origin deriving from an outer carbonate shelf. The carbonatic mélange in the Sirogojno area is relatively matrix-free, only in some fissures in lagoonal Dachstein Limestone blocks remnants of the matrix are preserved. This resembles the situation in Krš Gradac near Sjenica, where Middle to early Late Jurassic radiolarite matrix with Triassic radiolarite components occur between blocks of lagoonal Dachstein Limestone. The derivation source of the carbonate blocks should be the Drina-Ivanjica Unit high further to the east. We consider therefore westward transport of the ophiolitic mélange and the ophiolite nappes as well as westward transport of the carbonate mélange on top. Westward directed ophiolite obduction and thrusting in Jurassic time largely occur in the Dinaridic-Albanide realm, but the exact age of the emplacement is still a matter of discussion: Middle to early Late Jurassic or latest Jurassic to earliest Cretaceous. Our new data confirm (a) an allochthonous derivation of the ophiolitic mélange and the overlying ophiolite nappes (obduction), (b) the Middle to early Late Jurassic formation of the radiolaritic-ophiolitic mélange in the Dinaridic Ophiolite Belt and (c) their westward transport in Jurassic time. A younger, second westward thrusting phase, is documented by underlying radiolarite sequences with intercalated shallow-water debris of Kimmeridgian to Tithonian age. These occurrences are tectonic windows below the overthrusted ophiolitic and carbonate mélanges. This clearly shows a polyphase thrusting of the ophiolithic mélange in westward direction.

An autochthonous origin of a Triassic Ocean between the Outer Dinarides and the Drina-Ivanjica Unit as northward continuation of Pelagonia/Korabi units, as proposed by another group of authors, can be excluded. This would exist in the lagoonal area of the Triassic carbonate platforms in the Dinarides, separating for example in Late Triassic time the restricted lagoon (Hauptdolomit) from the open lagoon (Dachstein Limestone).

Genetic significance of the Cretaceous black and red shales from the Eastern Carpathians (Romania)

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In the outer nappe systems of the Eastern Carpathians, namely the Moldavids, marine Upper Cretaceous red sediments overlay the Lower Cretaceous organic-rich black shales. The oldest parts of the black shale units are composed of Upper Valanginian-Upper Barremian hemipelagic and pelagic muddy siliciclastic rocks and carbonate muds, commonly intercalated with fine-grained turbidites. These features indicate an abyssal plain setting. During the sedimentation of the middle part of the black shale units, in the Late Barremian-Early Albian interval, the depth of the basin increased. This assumption is based on the occurrence of mainly hemipelagic sediments, with a few thin turbiditic intercalations.

The youngest part (Albian *pro parte*) of the black shale units is characterized by a turbiditic sedimentation, with mainly sandy sequences of middle and lower deep-water fans. A continuous decreasing of the basin depth is to be assumed. The presence of the authigenic glauconite in the Albian sandstones suggests a palaeoenvironmental change, linked to the occurrence of oxygenated turbidity current circulation.

A significant shift in the sedimentation regime of the Eastern Carpathian Moldavids took place in the Late Albian, when Cretaceous Oceanic Red Beds (CORB) occurred. This type of sedimentation lasted up to the Coniacian. The lower part of the CORBs, composed of radiolarites intercalated with variegated shales, pyroclastic tuffs and thin sandstones, is interpreted as a hemipelagic and pelagic sedimentation in an abyssal plain environment, where rarely turbidites occurred. Upwards, there are mainly burrowed variegated red and green shales. The youngest parts of CORBs are characterized by increased thickness and frequency of the turbidites. While the main part of the CORB is carbonate-free or has very low carbonate content, the upper part of these strata becomes rich in marls and mudstones, indicating a decreasing of the basin depth.

The accumulation of the black shales in the Eastern Carpathians during the Late Valanginian-Late Albian interval is linked to the existence of a small, silled basin of the Moldavian Trough, in which restricted circulation led to the density stratification of the water column, resulting in the deposition of anoxic Lower Cretaceous sediments (i.e., the black shales). Because of the tectonic deformation that took place during the Late Albian time, the restricted circulation changed to an open circulation regime in the Moldavian Trough. Hence, the anoxic regime was progressively replaced by an oxic one, across the Albian-Cenomanian