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New Mesozoic-Cenozoic palaeotectonic maps used to shed light on Tethyan geological development (Eastern Mediterranean, Taurides and Arabian margin)

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The main objective here is to present and discuss a series of new palaeotectonic maps for the region that includes the easternmost Mediterranean, the Arabian margin and the Taurides, and which assimilate much recently published information. Critical to this is a review of the Taurides which tests alternative reconstructions that involve either the creation of a series of rifts within a large continental area and/or an array of or microcontinents separated by Mesozoic ocean basins. The proposed reconstructions envisage a long-lived Palaeozoic-Early Cenozoic Tethys bordering Eurasia (Rheic and Palaeotethyan oceans), northward subduction of these oceans beneath Eurasia and the rifting of continental fragments from Gondwana (e.g. during Ordovician and Triassic). Consideration of field relations indicates that the various platform units in southern Turkey (e.g. Bey Dağları; Malatya-Keban; Kirşehir) do not restore as a single large Tauride continent. Instead continental fragments rifted from Gondwana during the Triassic to open several Mesozoic oceanic basins, notably the large Southern Neotethyan ocean, the Berit ocean (new name) and the Inner Tauride ocean, while the İzmir-Arkara-Erzincan ocean developed adjacent to Eurasia.
In general, Mid-Permian to Mid-Triassic pulsed rifting culminated in Late Triassic-Early Jurassic spreading. After Early-Mid Jurassic passive subsidence, Late Jurassic-Early Cretaceous was characterised by alkaline, within-plate magmatism related to plume activity or renewed rifting. Late Cretaceous ophiolites formed above subduction zones in several oceanic basins. During latest the Cretaceous ophiolites were emplaced southwards onto the Tauride and Arabian platforms. The Southern Neotethys sutured with the Arabian margin during the Early-Middle Miocene, while ocean crust remained in the Eastern Mediterranean further west. The leading edge of the North African continental margin, the Eratosthenes High, collided with a subduction trench south of Cyprus during Late Pliocene-Pleistocene, triggering rapid uplift. Coeval Plio-Quaternary uplift of the Taurides may relate to break-off or delamination of a remnant oceanic slab. The main uncertainties are the initial fit of Africa vs. Eurasia for Permian-Triassic time (Pangea A or B reconstructions), the relative width of the individual Mesozoic oceanic basins and the extent of lateral shift (terrane displacement) during Tethyan assembly.