

## **REVISITING THE TECTONIC EVOLUTION OF TURKEY AFTER FOUR DECADES**

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### **ABSTRACT**

*Almost forty years ago we published the first plate tectonic synthesis of the tectonic evolution of Turkey. At the time our knowledge of the pre-Tethyan events was very meagre and we therefore confined our synthesis to times post-dating the origin of Pangaea and the Tethyan realm. Now, for the first time we are able to see more clearly the outlines of the Palaeozoic evolution in Turkey, at least from Devonian onwards. Even the earlier events, including the Pan-African development, appear more intelligible than before. Much more recent information has accumulated on the neotectonic evolution of the country, especially in consequence of the 1999 earthquakes in northwestern Turkey. But the model we proposed in 1981 concerning the neotectonics of Turkey has remained substantially the same. No major amendments seem necessary.*

*Surprisingly, the palaeotectonic parts of our 1981 model also have largely withstood the test of time. We ourselves introduced one major novelty in 1982 by isolating the Kırşehir Massif from the rest of the Menderes-Taurus Block. Also, the collision of the Bitlis Massif with Arabia was moved to the Eocene as a result of new work by Yılmaz and his students and colleagues. The rest of the 1981 model remains intact despite the many attempted rebuttals published since. One major recent novelty is the discovery by Şengör and his students and colleagues of the Protogonos arc that governed the Hercynian evolution from North America to Iran and beyond during the Palaeozoic and perhaps even during the Ediacaran and the Cryogenian. When the Hercynian collision was completed in Europe during the late Carboniferous, that arc continued its activity in the east as part of the Cimmerides and became extinguished only after the Cimmeride collisions in the early Jurassic. There are thus no Hercynian events in Turkey except in the İstanbul fragment.*

*The Palaeozoic development of the İstanbul Zone is clearly a part of the circum-Moesian orogenic events and seem to be the easternmost part of the Hercynides providing a transition to the Scythides. But a hypothesized 180-degree rotation of Moesia greatly displaced it and locked it into the Tethysides as a truly exotic unit.*

*The geology of Turkey has entered a very exciting phase by the availability of numerous new isotopic ages, GPS and satellite imagery and increasingly better geophysical control. The publication of the 1/100.000 scale geological maps by the MTA (in places even down to 1/50.000 scale) is a very laudable undertaking and we hope that it will continue unabated to publish the remaining few sheets. We very much hope that a new series of 1/25.000-scale geological maps may commence publication also.*

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