



(KEYNOTE SPEAKER)

**PROGRESS AND PROBLEMS CONCERNING THE TECTONIC
DEVELOPMENT OF ANATOLIA**

ALASTAIR H.F. ROBERTSON¹, OSMAN PARLAK², TIMUR USTAOMER³

¹ University of Edinburgh, School of GeoSciences, EH9 3FE, Edinburgh, UK

² Istanbul University, Department of Geological Engineering, 34850 Istanbul, Turkey

³ Cukurova University, Department of Geological Engineering, 01330 Adana, Turkey
(Alastair.Robertson@ed.ac.uk)

ABSTRACT

The Palaeozoic-Cenozoic tectonic development of Anatolia is interpreted in the context of the Pontides/Eurasia to the N, and the E Mediterranean/N Africa to the S. In our previously proposed tectonic reconstruction, Palaeotethys mainly subducted northwards beneath Eurasia during late Carboniferous, closing in the W but remaining open in the E until Eocene. Some southward subduction also occurred beneath the N Anatolide margin. The combined Anatolide-Tauride continental block rifted from N Gondwana during Late Permian-Early Triassic, with final break-up to form S Neotethys during Late Triassic-Early Jurassic. The Niğde-Kırşehir massif represents a separate rifted block, with the Inner Tauride ocean opening to the south of it. In SE Turkey, the Bitlis and Pütürge Massifs, and in S Turkey the Alanya Massif represent one, or several, smaller rifted continental fragments. Supra-subduction zone-type ophiolites formed within the Izmir-Ankara-Erzincan ocean during Jurassic (176-186 Ma) and also during the Late Cretaceous within the Inner Tauride Ocean (92-93 Ma), the Berit ocean (84-87 Ma) and S Neotethys (93-94 Ma) during Late Cretaceous. Available ophiolite metamorphic sole ages generally overlap with crystallisation ages implying early initial emplacement. Ophiolites and accretionary melange were emplaced southwards onto the Arabian platform during latest Cretaceous. The Izmir-Ankara-Erzincan ocean and the Inner Tauride ocean finally closed by late Eocene, but the S Neotethys in SE Turkey did not suture until mid-Miocene. Diachronous subduction and collision are ongoing in the easternmost Mediterranean (e.g. Cyprus). Some alternatives are proposed in recent publications: Pangea B-type restoration; southward subduction and back-arc rifting of S Neotethys; Inner Tauride units derived from north of the Niğde-Kırşehir massif; Late Cretaceous ophiolites derived from a single trench-subduction system to the east; Eocene suturing in SE Turkey; also, progressive southward closure of a single Tethys. Alternatives will be discussed and, where appropriate, assimilated into a revised regional tectonic model. The best way forward remains critical testing of key tectonic relations and correlations, especially using multi-disciplinary datasets, aided by new high-precision dating.

Keywords: *Turkey, Anatolia, reconstruction, Tethys, alternative models*