



The Phanerozoic history of the Black Sea and its margins: long-lived, predominantly (trans)extensional tectonics within a convergent zone until the Tertiary

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The Ukrainian Shield is predominantly Archaean in age and is adjoined by surmised Proterozoic-aged crust along the northern shelf of the Black Sea and on the Crimean Peninsula that is covered by Palaeozoic and younger sediments of the Scythian Platform. The Black Sea itself and what lies to its south represent the Tethyan orogenic belt, which comprises the accretionary results of a long period of (European and African) plate convergence (since at least the Triassic and perhaps earlier) that also involves several older crustal fragments. Neoproterozoic (Pan-African) aged crust of the Sinai Peninsula occurs to the south of this belt beyond the rifted continental margin of the eastern Mediterranean Sea. The nature of the crustal basement of the Crimean Orogen, underlying (Late Palaeozoic?)-Mesozoic sedimentary rocks affected by basin inversion tectonics at the end of the Middle Jurassic(?-pre Early Cretaceous) and again in the Tertiary, is unknown. It has been speculated to comprise a subduction-accretion complex (possibly correlated with the mainly Triassic aged Sakarya Zone of northern Turkey) but could also be thinned, older, European crust. Much of the actual evidence of such correlation is covered by the Black Sea or, on land, by younger sedimentary units. The (western) Black Sea is believed to be a back-arc rift basin that opened in mid to Late Cretaceous times. The Pontide margin of north-western Turkey is formed by the Istanbul Zone, with Proterozoic-aged basement probably correlative with Moesian crust found in southern Romania and Bulgaria. Much of the Phanerozoic geological history observed in the Black Sea and on its margins, within what is in general a zone of convergence, is characterised by extensional tectonics. Crustal shortening became a dominant regional process only in Late Cretaceous-Tertiary times, when su-

turing of previously independent continental fragments occurred in central and southern Turkey. This took place not only within and near the suture zones themselves but also in cratonic, intraplate settings north and south of the Tethyan Belt itself at about the same time (the Donbas Foldbelt to the north and the Syrian Arc Foldbelt to the south). The implications for this on lithospheric processes occurring within zones of convergence will be discussed. The authors acknowledge what they have learned from TRANSMED VIII and MEBE project colleagues (but accept responsibility for their own conclusions).