

Cretaceous geological evolution of the Central Pontides

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Before the Late Cretaceous opening of the Black Sea as a back-arc basin, the Pontides constituted part of the southern margin of Laurasia. During the Late Jurassic – Early Cretaceous (Kimmeridgian-Berriasian) the region was a wide carbonate platform, which passed south into a continental margin dominated by carbonate deposition. The limestone deposition was terminated by uplift and erosion during the Valanginian and Hauterivian, followed by the deposition in the Central Pontides of an over 2-km-thick sequence of Barremian-Aptian turbidites. Paleocurrent measurements and detrital zircon ages indicate that the major part of the turbidites was derived from the East European Platform in the north, implying that the Black Sea was not open before the Aptian (AKDOGAN et al., 2017). The middle Cretaceous turbidites formed a large submarine fan, 400 km by 90 km, extending from a mixed clastic-carbonate shelf in the north along the present southern Black Sea coast, to the Tethyan subduction zone in the south. The distal turbidites in the south were deformed and metamorphosed in the subduction zone during the Albian (OKAY et al., 2013). Albian times also witnessed accretion of Tethyan oceanic crustal and mantle sequences to the southern margin Laurasia, represented by Albian eclogites and blueschists in the Central Pontides (OKAY et al., 2006).

A new depositional cycle started in the Late Cretaceous with the Coniacian-Santonian red pelagic limestones, which lie unconformably over the older units. The limestones pass up into thick sequences of Santonian-Campanian arc volcanic rocks. The oceanic crust in the West Black Sea basin was generated during this arc volcanism. The arc volcanism ceased in the middle Campanian, and the interval between late Campanian and middle Eocene is represented by a thick sequence of siliciclastic and calciclastic turbidites in the northern part of the Central Pontides. Coeval sequences in the south are shallow marine and are separated by unconformities.

AKDOGAN, R. et al., 2017. *J. Asian Earth Sc.*, **134**, 309–329.

OKAY, A.I. et al., 2006. *Geol. Soc. Am. Bull.*, **118**, 1247–1269.

OKAY, A.I. et al., 2013. *Tectonics*, **32**, 1247–1271.