

The “Flysch Basin” in the Western Mediterranean Alpine Chains

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The “Flysch Basin” represents a major Meso-Cenozoic Domain of the Betic, Maghrebian and Apenninic Chains. Since the Middle Jurassic, it constituted, the southernmost branch of the Western Tethys, separating the Africa-Adria Margin from a microcontinent (Mesomediterranean Terrane). The “Flysch Basin” representative rocks (mainly sedimentary and, rarely, magmatic) outcrop continuously from the Gibraltar Arc to the Southern Apennines. They are stacked below the basement nappes originated from the microcontinent (Internal Zones) and override the cover nappes deriving from the Africa-Adria Margin (External Zones).

New data suggest that, in spite of its dimension (3.000 km in length), the “Flysch Basin” underwent a surprisingly homogeneous pre-orogenic and tectonic evolution. All over the basin, the sedimentary cover starts with Upper Jurassic-Lower Cretaceous radiolarites and limestones which are, in turn, topped by Cretaceous-Paleogene marly-clayey deposits with calcareous turbidites. From the early Miocene, the onset of the Africa-Adria-verging tectogenesis in the Mesomediterranean Terrane changed the mainly pelagic “Flysch Basin” into a rapidly migrating southwards foredeep in which immature siliciclastic turbiditic sediments, interfingered with mature Africa-derived deposits. At the same time, a calc-alkaline volcanic arc, related to the Europe-dipping subduction, provided locally abundant volcanoclastic detritus.

The history of the “Flysch Basin” ends at the Burdigalian-Langhian boundary, when its terranes were included in the Maghrebian-Apenninic accretionary wedge, and the collision between the Africa-Adria Margin and the paleochain, docked to the European Plate, occurred. Later on, Langhian thrust-top basin deposits sutured the “Flysch Basin” units including some of those piled through back-thrusts onto the internal nappes.