

ORIGIN OF THE SERRA DO MAR, BRAZIL

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The Serra do Mar is the most remarkable relief feature in SE Brazil. It is strongly controlled by basement structures, limiting the Atlantic Plateau along almost 1,000 km of sinuous scarps facing the Santos Basin. The Atlantic Plateau was leveled - although not completely - by the Japi erosion surface in Senonian. Where not deformed by flexures or faults, the surface is now as high as 1,200-1,300 m above sea-level. A 88-90 Ma-old tectonic-magmatic event caused the uplift of the northwest border of the basin which in turn was the source-area of sediments accumulated both in Santos basin and in the Paraná basin. The water divide among them at the end of Senonian was probably close to the Santos Basin on the present medium-continental platform as indicated by coarse clastics found in marginal units. Deformation of Japi surface from Paleocene until possibly Meso-Miocene formed half-grabens and uplifts, in part affected by the scarp retreat. The reactivated faults are parallel to the basin hinge-line and Proterozoic faults. We suppose that the mountain range was a product of the post-Cretaceous event after subsidence of fault-blocks in the platform. The recent discovery of well-preserved Permian palynomorphs in Cretaceous-Tertiary beds of the Santos basin reveals that the spasmodic uplift of the range has continued until Miocene. The coastal elevations, promontories and islands were left as erosion cut the Japi surface and Neogenic others. The poor available knowledge on the effects of tectonism started at the continental platform does not allow a confirmation of this hypothesis yet.