

## PLATE TECTONICS OF THE TAIWAN AREA

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15 Ma ago, as a consequence of a change in direction of the Philippine/Eurasia (PH/EU) convergent motion, a major plate reorganization occurred in S-E Asia. Seafloor spreading ceased in the South China Sea, Japan Sea, Taiwan Sea, Sulu Sea, and Shikoku and Parace Vela basins. Simultaneously, shear motions also ceased along the Taiwan-Sinzi zone, the Gagua ridge and the Luzon-Ryukyu transform plate boundary. Plate boundaries changed drastically. The complex system of eleven plates suddenly changed to a simple two plate system (EU and PH). Six plate kinematic reconstructions spanning from 20 Ma to Present show implications concerning the geodynamic evolution of S-E Asia. Amongst them, the 1000 km-long linear Gagua ridge was a major plate boundary which accommodated the northwestward shear motion of the west PH plate. The formation of Taiwan was driven by two simple lithospheric motions: (i) the subduction of the PH Sea plate beneath Eurasia with a relative westward motion of the western end of the Ryukyu subduction zone (A); (ii) the subduction of Eurasia beneath the Philippine Sea plate with the northern end of the Manila subduction zone (B) dividing the Luzon arc into a southern segment moving above Eurasia and a northern segment colliding with Eurasia. The collision of the Luzon arc with Eurasia occurred between A and B. South of the B, mountain building results from the deformation of the huge accretionary wedge recently deposited south of Taiwan. North of B, compression results from the collision of the Luzon arc with the Eurasian margin.