Is “Bentong–Raub Suture” of Malay Peninsula a suture or shear? Some geodynamic and petrotectonic mismatch

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ABSTRACT

The so-called “Bentong–Raub Suture” do not characterise by subducting slab with any upper mantle geometry (Benioff zone) neither it contain any subduction related volcanic arc. The lower mantle velocity anomalies do not occur under the Bentong–Raub crustal segment. Deep wide upper mantle zone of high velocity anomaly beneath Sundaland is interpreted as active high density upper mantle flow. The “Bentong–Raub” zone is characterized by dominantly NW-SE trending en-echelon arrangement of structures, pull-apart basins, grabens, streched diamicittes, normal faults, dextral/sinistral strike-slip faults, couple shear faults suggesting its origin from diverging tectonic environment. The intrusions and granitization of the Malay Peninsula have been derived from vertical tectonic environment. The absence of characteristic ophiolite of a suture belt rules-out “Bentong–Raub tectono-stratigraphic” unit from being a subduction related “Suture”. Entire Malay Peninsula and East Sumatra is proposed to be the palaeo-southern shelf margin of Sundaland separated from Gondwana during Variscan–Hercynian movement of Devonian-Permian time. Sibumasu subducted below Sukhothai block of Indochina closing the palaeo-Tethys occurring along Changning–Menglian Suture Zone (CMSZ), Inthanon Suture Zone (ISZ) and Chanthaburi terrane in the Triassic. A sinistral strike-slip displacement of Chantaburi terrane of southern
Thailand along Wang Chao Fault is proposed for the creation of features like normal subsidence, pull-apart basins, strike-slip fault displacement and other shear features of the Malay Peninsula. “Bentong–Raub” tectonostratigraphic unit of Malay Peninsula is attributed to a “Shear Zone” and not a “Suture Zone.

Key Words: Malay Peninsula, Bentong–Raub Suture, Geodynamic, Petrotectonic, Anomalies.