

Diapiric melange of the Shimanto belt in south Kii peninsula

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Pebbly mudstone melange, called "Sarashikubi beds", locally constitute the upper member of the Oligocene to Lower Miocene Shimanto belt in southern Kii peninsula. It is lithologically subdivided into three units, A, B and C in ascending order (Hisatomi et al. 1980). Unit A and C show of block-in-matrix texture in which clasts sandstone and conglomerate are in muddy matrix. Clasts size widely varies, and contains a large amount of mudstone fragments other than larger (~10m) the sandstone blocks, mud matrix is very few in amount. Although Unit A is a massive without any layering, while in Unit C shows stratification due to both size and amount of clasts. Unit B consists of layered sandstone and conglomerate beds with evidence of shallow-marine normal sediments. Conglomerates shows grain supported texture with sandy matrix. That melange has been interpreted as olistostrome formed by large-scale subaqueous slope failure. However, the involvement of mud diapirism is suggested by the following reasons, 1) Distribution of Unit A is discordant with the peripheral surrounding strata. 2) Preferred orientation of the blocks long axis in Unit A is predominant than in the debris flow deposits of the Unit C, which suggests the possibility of clast rotation due to shear at the time of intrusion. 3) Unit A and Unit C includes characteristic disaggregated sandstone block which characterize the Tako mud diapir (Lewis & Byrne, 1996). 4) The elastic-wave velocity and density of sandstone clasts included in melange is larger than those surrounding strata. 5) Near the "Sarashikubi beds" there is often a clastics injections. In particular, the 30m scale mud diapir was found at the Tanosaki, 1km east from the "Sarashikubi beds". 6) Carbonate nodule were found from the "Sarashikubi beds" as well as surrounding strata. They are several centimeters to 0.5m in diameter. In cross-section, they show concentric structure of dark gray calcite, with euhedral pyrite crystals (~1mm).

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