

Formation of the Atokura Nappe and post-Cretaceous tectonics of Southwest Japan

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¹None

Recently, the existence of a Paleogene paired metamorphic belt was suggested in central Japan (Ono, JpGU Meeting 2008, G122-P002). In order to evaluate the suggestion, it is necessary to study the Paleogene geology and tectonics of central Japan.

Early Paleogene Sanbagawa Belt

Crystalline schist clasts are found from the middle Eocene conglomerates of the Shimanto Belt of central Shikoku. K-Ar white mica ages of four schist clasts are 71Ma - 78Ma (Yoshikura et al., 1991, G.S.J. Meeting, p.434). Clasts of quartz schists and cherts are common in sandstones of the Shimanto Belt of east Shikoku. Quartz schists and cherts are believed to be supplied from the Sanbagawa and the Chichibu Belts, respectively. As sedimentary ages of the sandstones are late Paleocene (56 - 60Ma), parts of the Sanbagawa metamorphic rocks were exposed in early Paleogene (Oyaizu and Kiminami, 2000, Mem. Geol. Soc. Jpn., 29-41).

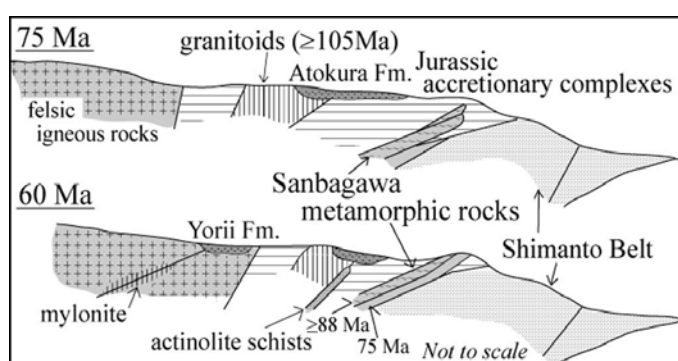
The early Paleogene Sanbagawa Belt may be located in the eastern part of the Paleogene forearc. The geology of the forearc is suggested by geological bodies of the Atokura Nappe which were parts of the early Paleogene forearc.

Formation of the Atokura Nappe

Probably, the Paleogene Sanbagawa Belt was covered by the Atokura Nappe at 40Ma plus or minus 10Ma. Just after the formation of the Atokura Nappe, the Median tectonic line of central Japan was formed in the root zone of the Atokura Nappe where Ryoke metamorphic rocks were in contact with Sanbagawa crystalline schists. In central Japan, the fundamental geological structure of the Southwest Japan was established after the formation of the Atokura Nappe.

Geology of early Miocene Atokura Nappe

The Atokura Nappe is covered unconformably by the early Miocene Uchiyama Formation and middle Miocene Kozono Formation. The Atokura Nappe below the Kozono Formation appears to be less than 100m in thickness at many localities. Hence, Atokura thrusts are often observed in the Yorii-Ogawa area. Moreover, angular schist clasts are often found in the southern part of the Ogawa basin. The thin Atokura Nappe suggests a large time gap between the formation of the Atokura Nappe and the sedimentation of the Kozono Formation.



Keywords: Atokura Nappe, Opening of the Japan Sea, Paleogene tectonics, Crystalline schist clast, Median Tectonic Line