Chronology of the Sanbagawa Belt, Kanto Mountains, and its implications for geotectonic development of Japan

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The chronological study on the Sanbagawa belt of Kanto Mountains (type locality of the Sanbagawa metamorphic rocks and the Mikabu Greenstone Complex) set certain development in past decade. The U-Pb age of detrital zircon (Tsutsumi et al., 2009) clarified the protolith of the Sanbagawa metamorphic rocks accreted on late Cretaceous, similar to the Shimanto belt. The K-Ar dating (Miyashita and Itaya, 2002) revealed that uplift timing of the belt is about 20Ma after the sedimentation. Recently, Aoki et al., (2008) showed that the Sanbagawa belt of Shikoku is subdivided into the younger Oboke unit and the older Besshi unit on the basis of protolith age; the Oboke unit correlates to the Sanbagawa belt of the Kanto Mountains. This fact means that the equivalent of Shimanto belt run through along Pacific Ocean side of Southwest Japan Arc.

At the northern part of the Kanto Mountains, the Atokura nappe composed of the Permian granitic rocks, Cretaceous plutonometamosphic complex, and Cretaceous fore-arc sediments (Takagi and Arai, 2003) thrust-up onto the Sanbagawa belt. In addition, the Chichibu belt which is Jurrasic to late Cretaceous accretionally complex, tectonically overlies the Sanbagawa belt. In the Kanto Mountains, such structural feature is postulated on since the 1930's (e.g; Fujimoto, 1937, Seki, 1958). These lines of evidence clearly show that the Chichibu belt occurs as a large-scale nappe on the underlying post-Jurassic the Sanbagawa belt and Shimanto belt suggested by Isozaki and Maruyama (2001).

Reference

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