

Provenancial correlation between Kanmon Group, SW Japan and Gyeongsan Supergroup, Korea by age distributions of detrital zircon

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It tries to be restored palaeogeographical reconstruction before the Sea of Japan expands by the comparison with Pre-Cretaceous terranes among Russian coast state and the basement of the Japanese Islands. On the other hand, the Korea peninsula, though it is adjacent with the Japanese Islands, had been contented with a passive position in the geography restoration, because of the lack of comparable basement rock in each other.

Cretaceous neritic to lacustrine sediments, Gyeongsang Supergroup is distributed in the southeast of the Korean Peninsula. A similar lower Cretaceous system is known in SW Japan, the Kanmon Group distributed from northeastern Kyushu to the western edge of Honshu, and the Tetori group distributed in the Hida mountainous. Comparison at these basin will offer the limiting condition to the geography restoration of between Korea and Japan before opening Sea of Japan. In this respect, the Kanmon Group has been compared with the Gyeongsang Supergroup on the basis of the similarity of the trace element composition of whole rocks and the sedimentary facies, and the predicted displacement from paleomagnetic studies. However, it thinks the radiolaria chert gravel contained in Gyeongsang Basin to be a Mino belt origin, or it thinks the orthoquartzite gravel contained in the Tetori Group to be Ogcheon Belt origin, the opinion that the Gyeongsang Basin had been close to the Tetori Group is adjacent consists, too (Lee, 2008).

We separated the zircon and monazite from the sandstone sampled from the Wakino Subgroup of the Kanmon Group and Shindong Group of the Gyeongsang Basin, and compared the EPMA ages. The peak of 2400Ma, 1870Ma, 1100Ma, 730-900Ma, 440Ma, 360Ma, 240Ma, and 190Ma is admitted in detrital zircons and monazites of Gyeongsang Basin. This age distribution shows main hinterland of the Gyeongsang Basin has been the Gyonggi Massif or Ogcheon Belt, and similar to the one of the Kanmon Group at these ages. It is thought that both were shared the hinterland and deposited at the same basin. On the other hand, it is thought that the age of the Late Proterozoic is not seen in detrital zircons of a coetaneous formation of the Tetori Group at all (Arakawa and 2005), and the Tetori Group were belonged at a different basin from the Gyeongsang Supergroup. This offers a big limiting condition in restoring what one geological arrange of Japanese islands to the Asia Continent in the day before when the Sea of Japan opens.