Japan Geoscience Union Meeting 2011
(May 22-27 2011 at Makuhari, Chiba, Japan)

SCG008-P02 Room:Convention Hall Time:May 26 14:00-16:30

Radiolaria-bearing bedded chert in the Central Plain of Thailand: its geologic age and correlation.

Yoshihito Kamata[1*], Miyako Kato[1], Katsumi Ueno[2], Akira Miyahigashi[2], Thasinee Charoentitirat[3], Seranee Limruk[3]

[1]Yamaguchi Univ., [2]Fukuoka Univ., [3]Chulalongkorn Univ.

Geotectonic division of Thailand has been established based on fundamental differences of regional geological and stratigraphical features, including the origin of granitoids series, distribution of ultra-mafic rocks which represent position of tectonic suture lines, and fusuline and radiolarian paleontological paleontological data. In the Central Plain of Thailand, however, the tectonic division is vague due to the scarceness of Paleozoic and Mesozoic information by the covering of thick Quaternary sediments. Recently, occurrence of Permian radiolarians from siliceous rocks in the Nakhon Sawan and Uthai Thani areas in the Central Plain has been reported (Saesaengseerung et al., 2007). However, tectonic implication of Paleozoic and Mesozoic rocks distributed in the Central Plain, in other word, extension to the Central Plain of the tectonic divisions such as the Sibumas Block, Inthanon Zone, and Sukhothai Zone which are well established in Northern Thailand, has not been well known.

Recently, we made field survey in Sukhothai, Nakhon Sawan, Uthai Thani, and Kanchanaburi provinces in the Central Plain. Chert beds distributed in the Sukhothai, Nakhon Sawan and Uthai Thani areas are gray or red in color. It is generally recrystallized by contact metamorphism. Under the microscope, the chert is composed mainly of a microcrystalline quartz matrix with radiolarian tests and quartz veins. Poorly preserved radiolarians have been detected from those exposed in eight localities of these areas. Sakmarian (middle Cisuralian) to Capitanian (late Guadalupian) radiolarians such as Albaillella asymmetrica, Pseudoalbaillella fusiformis, Ps. globosa, Follicucullus scholasticus are obtained.

At Bo Phloi in the Kanchanaburi area, we examined green to greenish gray chert. Under the microscope, radiolarian tests are observed to be embedded within a clay-rich cryptocrystalline quartz matrix. Calcareous foraminiferal tests have often been obtained from the chert by acidic treatment. Moreover, a lot of thin-shelled bivalves, probably Daonella or Halobia, are found in several horizons of the chert. It also yields well-preserved Middle Triassic (Anisian) radiolarians such as Eptingium manfredi, Pseudostylosphaera japonica, Triassocampe coronata, and others.

Based on the radiolarian occurrence and lithology, the Permian chert in the Nakhon Sawan and Uthai Thani areas are correlated with the Khanu Chert distributed in the Sukhothai area of the Sukhothai Zone in Northern Thailand.. On the other hand, the Triassic chert exposed at Bo Phloi in the Kanchanaburi area clearly exhibits hemipelagic deposition on the eastern margin of the Sibumasu Block, based on its lithlogy, radiolarian age, and faunal content characterized by possessing calcareous tests of thin-shelled bivalves and foraminifers.

Keywords: Central Thailand, Sibumasu Block, Sukhothai Zone, radiolarians, Permian, Triassic