Tectonic Reconstruction of Paleo-ocean and Island Arc System
- Tethys paleogeography between Sibumasu and Indochina -

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Mainland of Southeast Asia is a good field for examination of the Permo-Triassic paleogeography of the Paleoocean and Island Arc System. Sibumasu and Indochina are contrasting microcontinental blocks in the Mainland of Southeast Asia. Recently, Ueno (1999) and Charusiri et al. (2002) summarized the Tethys paleogeography and provide tectonic frameworks between two continental blocks. More recently, Hisada et al. (2004) proposed the marginal sea, perhaps a back arc, spread along the western margin of Indochina, north of the NW-SE trending Mae Ping Fault. Fundamental tectonic divisions are as follows; Indochina continental block, Nakhon Thai marginal sea, Sukhothai island arc, Inthanon accretionary prism, and Sibumasu continental block. In this paper, our recent results of the Tethys paleogeography between Sibumasu and Indochina are introduced.

Chutakositkanon (2004) documented that four tectono-stratigraphic mélange units constitute the Sa Kaeo-Chanthaburi accretionary complex developed during the Permian and Triassic along the western margin of Indochina, south of the Mae Ping Fault. They are Khao Prik, Khao Hleam, Ban Nong Bon and Soi Dao units, and the overlying Pong Nam Ron Formation. Among them, the Khao Hleam unit is characterized by strong deformation and shear structures. Blocks of basaltic pillow lava, volcaniclastic rocks, serpentinite, limestone, chert and sandstone in shaly matrix can be observed in mélanges. The Soi Dao unit also contains basaltic pillow lavas and their associated volcaniclastic rocks dominantly. Besides, serpentinite occurs rarely as small exposures.

Sibumasu is characterized by the presence of dropstone. Recently, Ampaiwan (2004) confirmed the occurrence of not only dropstone structure but also dump structure around Phuket, Thailand. Ages of the diamictite-bearing stratigraphic sections, Ko Sire and Ko He Formations, have been considered as the Asselian and the Early Sakmarian, respectively. The well-preserved dropstone and dump structures in Ko Sire provide very clear evidence of ice-rafted sedimentation. The Ko He Formation was formed with the resedimentation of previous glacial deposits by debris flow processes. The origin of the debris flows was probably triggered by earthquake during rifting event from Gondwana.

References

[1] K. Ueno, Proc. Int. Symp. on Shallow Tethys (ST) 5, 1999.

[2] P. Charusiri, V. Daorerk, D., Archibald, K. Hisada, and T. Ampaiwan, *J. Geol. Soc. Thailand*, 1, 2002.

[3]K. Hisada, V. Chutakositkanon, P. Charusiri, and K. Ueno, *Gondwana Research*, **7**, Supplement. Issue, 1310-1312, 2004.

[4] V. Chutakositkanon, Doctoral Thesis of the University of Tsukuba, 139pp, 2004.

[5] T. Ampaiwan, Master Thesis of the University of Tsukuba, 72pp, 2004.