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Geochemical character of metamorphosed mafic rocks from the collision boundary between Shan-Thai and Sibumasu craton in

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The collision boundary between Shan-Thai craton and Sibumasu craton is distributed from the Nujiang area in Yunnan province of China to the Khanom area in western Thailand, through Myanmar and The Inthanon area of Thailand (Osanai et al., 2010). Especially in the Inthanon area, the metamorphic ages were determined as 210 Ma (Nakano et al., 2010). This boundary is important for understanding the tectonic evolution of multiple collision orogeny during Permian-Triassic Asian continent growth. This study focus to metamorphosed mafic rocks that consider to have distributed between of those cratons before collision.

The metamorphosed mafic rocks from the collision boundary between the Shan-Thai and The Sibumasu cratons appear as blocks or Layers in granitic gneiss and pelitic gneiss. In the Nujiang area, the metamorphic rocks indicate greenschist? to amphibolite?facies conditions. Variations of the metamorphosed mafic rocks are clinopyroxene amphibolite, amphibolite and epidote?hornblende schist. The metamorphic rocks from the Inthanon area and the Khanom area suggest amphibolite?facies conditions. Major mineral assemblages of the metamorphosed mafic rocks from the Inthanon area are garnet + hornblende, clinopyroxene + hornblende and hornblende. Hornblendes are usually green?brownish color and show graonblastic texture. On the other hand, in the Khanom area, mineral assemblages of metamorphosed mafic rocks are clinopyroxene + hornblende, hornblende and epidote + hornblende.

The bulk chemical compositions of amphibolite and mafic schist from the Nujiang area show $\text{SiO}_2 = 46.2-51.7$ wt. %, $\text{XMg} = 0.45-0.72$ and various Nb/Y ratios ranging from 0.09 to 0.82. They are plotted within the fields between with-in plate basalts and MORB in some discrimination diagrams. Furthermore, the chondrite normalized REE patterns show two patterns; LREE-enriched pattern (OIB type) and flat pattern (E- to T-MORB type). These geochemical characters and mode of occurrence indicate that they would be derived from oceanic crust, which are distributed between the Shan-Thai craton and the Sibumasu craton before collision.

Keywords: Inthanon, Khanom, Nujiang, Metamorphosed mafic rock, Geochemistry, Collision boundary