Tectono-stratigraphy and geologic age of Jurassic accretionary complexes (Otchizawa and Nogurizawa formations) of the Southern Chichibu belt in Ueno Village, Gunma Prefecture, northwest Kanto Mountains, central Japan

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The Chichibu Belt extends over 1,000 km from Okinawa Islands to the Kanto Mountains, central Japan, comprising Jurassic to Early Cretaceous accretionary complexes (Northern Chichibu and Southern Chichibu belts) and allochthonous fragments of an island arc/around-arc basin system of Ordovician to Cretaceous age (Kurosegawa belt). Based on the lithology and geological structure, Matsuoka et al. (1998) subdivided the Southern Chichibu belt into three units: the Ohirayama, Togano, and Sambosan units. Among them, the Ohirayama unit was first defined as chaotic rocks distributed between the Kurosegawa belt and the Togano unit in the Sakawa area, Kochi Prefecture, Shikoku; however a complicated geologic structure around in the type locality has hampered understanding of the nature and formation process of the unit. In contrast, this unit occurs widely in the western part of the Kanto Mountains (Nakatsugawa Group) (Hisada et al., 1992) and a recent study shows that the rocks in this area remain important geologic structures at deeper levels of the accretionary complex such as duplexing (Ueno et al., 2011). Here I present the results of detailed tectono-stratigraphic and radiolarian biostratigraphic investigations of the Otchizawa and Nogurizawa formations of the Nakatsugawa Group (Ueno et al., 2011) in Ueno Village, Gunma Prefecture, northwest Kanto Mountains.

The Otchizawa and Nogurizawa formations of the study area can be subdivided into six units (Units A to F) bounded by faults, in structural ascending order. Rocks of these units strike N60° to 80°W and dip 55° to 80° to the north. Unit A corresponds to the Otchizawa Formation, and Units B to F correspond to the Nogurizawa Formation in the previous studies. Unit A is composed of Permian limestone and basaltic rocks within a muddy matrix. Units B, D, and F consist of sheared mudstone beds with blocks of sandstone, chert, and basaltic rocks. Unit C is characterized by fault-bounded slices of chert and sandstone associated with lesser siliceous shale and sheared alternating sandstone and shale. Unit E is composed of large chert bodies and basaltic

rocks.

I collected 186 samples of chert and muddy rocks from which I attempted to extract radiolarians using a standard HF acid etching technique. As a result, I obtained Early Jurassic radiolarians (*Bagotum* sp., *Droltus* sp., and *Katroma* sp.) from siliceous shale of Unit C. I also recovered *Eucytidiellum* sp. and *Parahsuum* sp. from mudstone sample of Unit C.

The present tectono-stratigraphic and biostratigraphic results show that Unit C characterized by repeated tectonic slices of chert and sandstone is a key geologic unit to reconstruct of an ocean plate stratigraphy of the accretionary complex in this area. More information on ages of chert of Units C and D is also needed to better understand accretionary process.

References

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