

Extent of 'Ultra-Samarka' terrane in southern Sikhote-Alin, Far East Russia

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Similar tectonic frameworks of Sikhote-Alin in Far East Russia have been proposed by Kojima (1989), Khanchuk (1982) and Natal'in (1983). Recently Kojima et al. (2000), however, indicated that the Samarka terrane, so-far believed to be of Jurassic accretionary complexes, actually included geologic units correlatable to part of the Permian Ultra-Tamba terrane and Maizuru terrane in Southwest Japan. We made a field survey in the area north of the Kojima et al (2000)'s study area in 2001, and had evidence suggesting that the rocks of the 'Ultra-Samarka' terrane were distributed widely in this area. The field work was supported by Dr. L.A. Izosov (Pacific Oceanological Institute) and S.V. Kovalenko (Geological Survey of Primorye).

Sandstone, shale and acidic tuff together with minor gabbro occur along the Malinovka River south of Malinovo town; these rocks have been considered to be part of the Samarka terrane. The relationship between the sedimentary rocks and gabbro could not be observed in the field. The sedimentary rocks were deformed and foliated at some localities. The sandstone is poorly-sorted graywacke, and consists mainly of lithic fragments with minor amounts of quartz, plagioclase and K-feldspar. The lithic fragments are acidic volcanic rocks, shale, intermediate or basic volcanic rocks, and chert. Heavy minerals include biotite, garnet, zircon and tourmaline. The shale is dark or light gray in color; it is massive or interbedded with the sandstone, and occasionally includes sandstone lenses. The acidic tuff is light green in color, several to 15 cm in thickness, and is interbedded with the shale. The shale and acidic tuff yield no age-diagnostic fossils like radiolarians. Part of the sedimentary rocks in this area have characteristics in common with the rocks of the Udeka Formation and the Ultra-Tamba terrane.

We report that the rocks of the 'Ultra-Samarka' terrane is widely distributed in the Malinovka area, although their occurrence in the Kojima et al (2000)'s study area to the south is restricted in a narrow zone between the Khanka and Samarka terranes. In order to make more accurate tectonic subdivision of this area, we must reveal the geologic structure and regional extent of these rocks.