

## Mid-oceanic limestone of the Cambrian accretionary complex in the Gorny Altai mountain, southern Russia

# Yuko Uchio[1], Yukio Isozaki[2], Mikhail Buslov[3], Tsutomu Ota[4], Atsushi Utsunomiya[5], Shigenori Maruyama[6]

[1] Earth and Planetary Sci., Tokyo Inst. Tech., [2] Earth Sci. & Astron., Univ. Tokyo Komaba, [3] UIGGM, Russian Acad. Sci., [4] Physics, Tokyo Inst. of Tech., [5] Earth and Planetary Sci., Tokyo Inst. Tech., [6] Earth and Planetary Sci., Tokyo Institute of Technology

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In order to get information of mid-oceanic environment at the Vendian-Cambrian boundary, we examined the Vendian-Cambrian limestone contained in the Cambrian accretionary complex in the Gorny Altai mountain in southern Russia.

The Vendo-Cambrian Baratal limestone occurs as large allochthonous blocks in the Cambrian accretionary complex. The primary stratigraphy of the Baratal limestone was analysed in detail in the eastern part of the Gorny Altai mountain.

Baratal limestone conformably overlies basaltic greenstones. The geochemistry greenstones directly underlying the Baratal limestone have similar to those of modern oceanic island basalt or oceanic plateau basalt. All types of the limestone lack coarse-grained terrigenous clastics. Baratal limestone in the study area is lithologically divided into six types; 1) massive limestone, 2) limestone breccia, 3) laminated limestone, 4) calcilutite limestone, 5) siliceous nodule bearing calcilutite limestone, and 6) slumping limestone.

Massive limestone consist of micritic limestone and some parts of that contain stromatolites that suggest shallow-marine environment. The limestone breccia contains clasts of micritic limestone greenstones and chert. Poor grading, ill-sorting and thinly bedding suggest that the limestone breccia was formed as sediment-gravity-flow (debris flow) deposits. Some part of massive limestone and limestone breccia contain ooids that suggest shallow-marine environment. In addition, laminated limestone and bedded micritic limestone are associated with the limestone breccia. And, some limestone have slumping structure, that indicate the limestone was formed as a sliding deposit.

Greenstones under the Baratal limestone indicate similar geochemistry of modern oceanic plateau basalt or oceanic island basalt. The absence of terrigenous clastics is found in all types of limestone. These evidences suggest that the Baratal limestone as a whole was originally deposited in a mid-oceanic environment, and, the limestone has formed probably on and around a paleo-plateau or ancient seamount.

Sedimentary environments of these six types of limestone are inferred as follows; Type 1, massive and micritic with shallow-water stromatolite, is inferred to have formed on the top. Type 2, limestone breccia, represents sediment-gravity-flow (debris flow) deposit probably accumulated on the slope. Type 3 corresponds to allodapic limestone (limestone turbidite) accumulated at the base of slope. Type 4 and Type 5, micritic limestone, and with siliceous nodules, are also supposed to have deposited at and around the bottom of slope. Type 6, slumping limestone represents slide deposit probably accumulated on the slope. The Baratal limestone was formed on the top and around the paleo-plateau (paleo-seamount).