

Discovery of eclogitic glaucophane schist from the Omi area, Renge metamorphic belt, the Inner Zone of southwestern Japan

Tatsuki Tsujimori*, Akira Ishiwatari* and Shohei Banno**

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* Department of Earth Sciences, Faculty of Science, Kanazawa University, Kanazawa 920-1192, Japan

** Emeritus Professor, Graduate School of Science, Kyoto University, Kyoto 606-8502, Japan

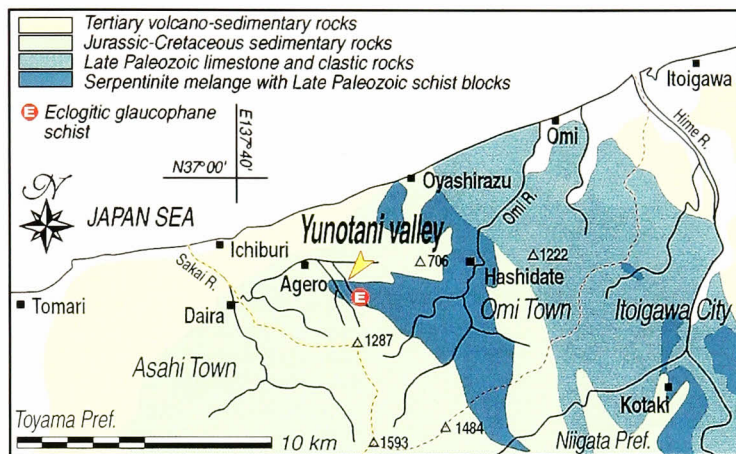


Fig. 1. Locality map of the Omi eclogitic glaucophane schist. The geological boundaries are based on the 1:200,000 geological map 'Toyama' issued by the Geological Survey of Japan (1996).

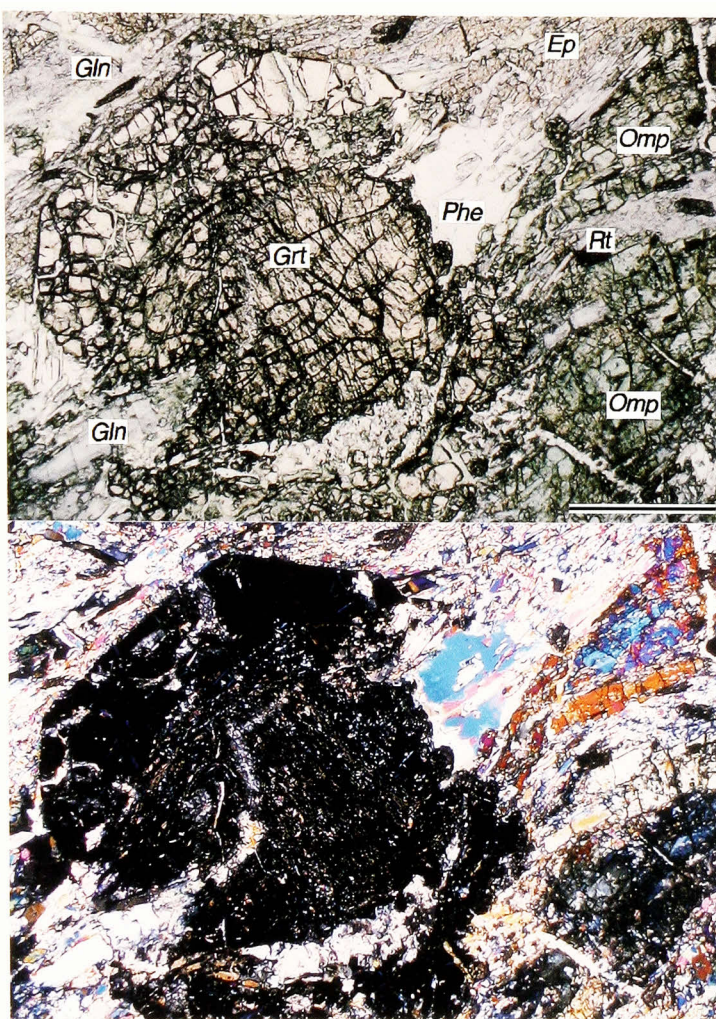
Eclogitic glaucophane schist has been discovered as a boulder (about 4 m diameter) from the Yunotani valley in the western Omi area of the late Paleozoic Renge metamorphic belt (Fig. 1). The eclogitic glaucophane schist (Fig. 2) occurs as a mafic layer (1.2 m wide) intercalated within pelitic schist (garnet-paragonite-phengite schist), and is characterized by the mineral assemblage garnet (modal volume: 21%) + omphacite (19%) + glaucophane (37%) + epidote (19%) + rutile + phengite + albite + quartz (Fig. 3). This is the first finding of the late Paleozoic eclogite facies metabasite, which is almost devoid of retrogression and preserving textural evolution (Fig. 4) and mineral zoning (Fig. 5) during progressive metamorphism. This rock provides an evidence for the eclogite facies metamorphism in the late Paleozoic Western-Pacific margin. More detailed description will appear in Tsujimori et al. (in press).



Fig. 2. Occurrence of the composite boulder of eclogitic glaucophane schist (dark-colored, 1.2 m wide band in the right half) and garnet-paragonite-phengite schist (light-colored left half). Schistosity is steeply inclined to the right.

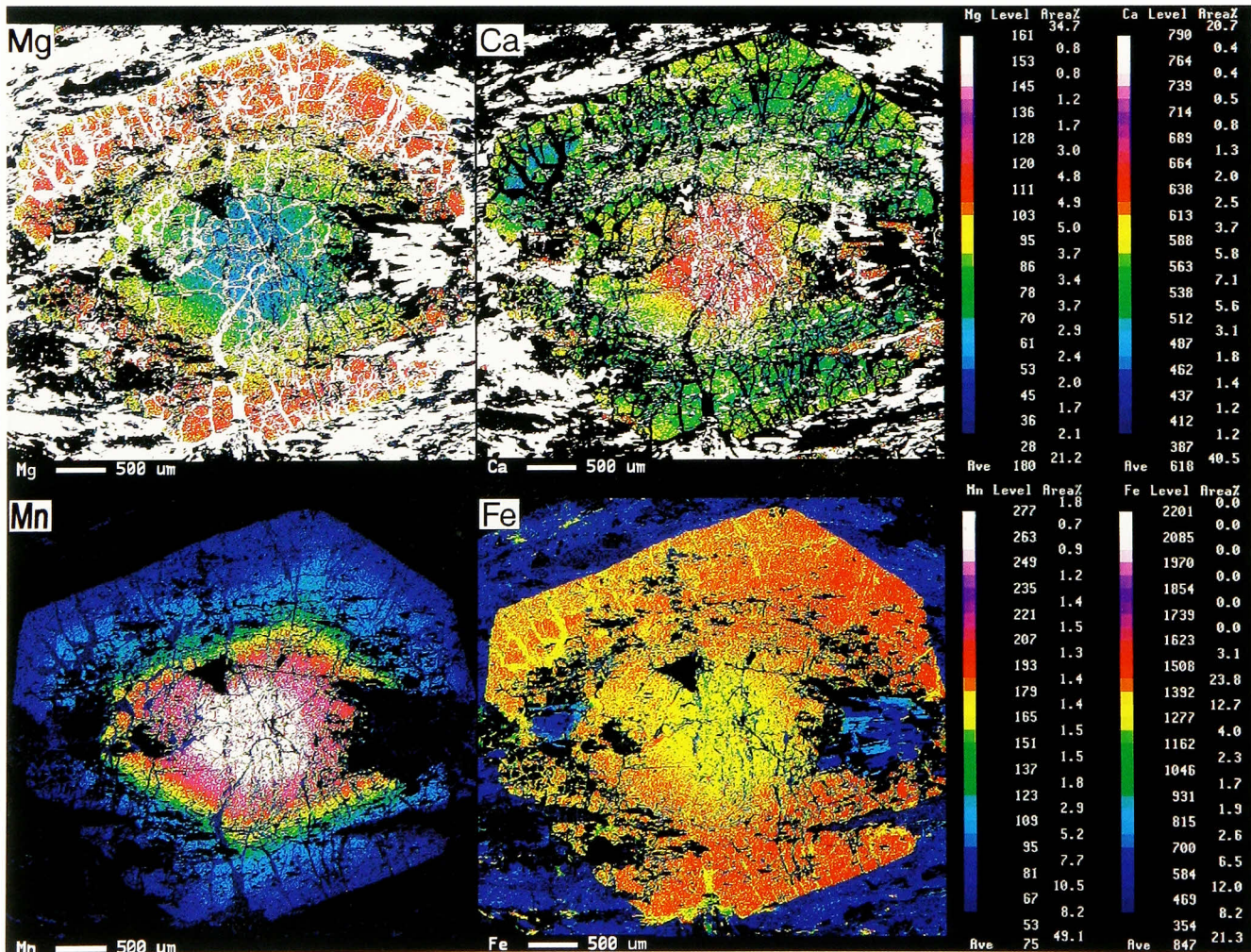


Fig. 3. A hand specimen of the Yunotani eclogitic glaucophane schist. Note that the compositional banding and preferred orientation of glaucophane, omphacite, epidote and phengite define a schistosity. Some calcite veinlets cut the schistosity.



◀ **Fig. 4.** Photomicrograph of textural relations in the Yunotani eclogitic glaucophane schist. Green-colored omphacite coexists with both garnet and pale-blue glaucophane. Some epidote and phengite are also present. These eclogite facies minerals form penetrative schistosity (S_1), though the blueschist facies mineral inclusions forming earlier schistosity (S_2) are preserved in the rotated garnet core. Open (upper) and crossed (lower) nicols. The scale bar is 1.0 mm.

▼ **Fig. 5.** Electron microprobe element image (quantitative) of a garnet porphyroblast from the Yunotani eclogitic glaucophane schist. Mg, Ca, Mn and Fe X-ray mappings of garnet were carried out with a JEOL JXA-8800R at 20 kV accelerating voltage, 70 nA probe current, $5 \times 5 \mu\text{m}$ pixel size and 150 ms dwelling time. Note that the Mn zoning decreasing toward the rim suggests its prograde growth.



Reference

Tsujimori, T., Ishiwatari, A. and Banno, S., 2000, Eclogitic glaucophane schist from the Yunotani valley in Omi Town, the Renge metamorphic belt, the Inner Zone of southwestern Japan. *Jour. Geol. Soc. Japan*, in press. (in Japanese with English Abstract)