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NEW YTTRIUM CARBONATE AND PHOSPHATE MINERALS FROM THE HIGASHIMATSUURA BASALT

The Higashimatsuura basalt, distributed throughout the Higashimatsuura peninsula, Saga Prefecture, Kyushu, Japan, comprises five lithological units. The units are based on the stage of volcanic activity. The most recent stage has yielded three new minerals: kimuraite-(Y) (Nagashima et al. 1986, *American Mineralogist* 71: 1028-11033), kozoite-(Nd) (Miyawaki et al. 2000, *JMPS* 98: 137-141), and kozoite-(La) (Miyawaki et al. 2003, *American Mineralogist* 85: 1076-1081). The Higashimatsuura basalt is the only basalt reported to include these rare earth minerals. Their regional distribution and detailed mineralogy, except at the type localities, remain to be investigated. My mineralogical study of the Higashimatsuura basalt commenced in 2000, and continues now with my students Tomotaka Kusuzaki, Yasuhiro Takai, and Ayaka Shobu, and my colleague Mr. Shoichiro Iwano, an amateur mineralogist who contributed to the discovery of kimuraite and kozoite-(La).



FIGURE 1 Assistant Professor Uehara's laboratory members in the display room of the Ko collection, Kyushu University

We recently found two new minerals, hizenite-(Y) (IMA 2011-30) and rhabdophane-(Y) (IMA 2011-31), in the alkali basalt.

Hizenite [$\text{Ca}_2\text{Y}_6(\text{CO}_3)_{11}\cdot 14\text{H}_2\text{O}$] is found in Mitsukoshi, Karatsu, Saga Prefecture, in the 5th-stage basalt (Fig. 2). Some members of IMA visited the type locality during the IMA2006 Kobe field trip FE2 (Fig. 3). "Hizen" refers to the classic country name of the locality of the mineral. The name existed in northwest Kyushu (Saga and Nagasaki prefectures) from the 7th century to the 16th century, and it remains in the name of the town in Karatsu. Hizenite is orthorhombic, and its lattice parameters are $a = 0.6295(1)$ nm, $b = 0.9089(2)$ nm, $c = 6.349(1)$ nm. From the chemical composition and lattice parameters, we think that hizenite has an alternating-layer structure, kimuraite (2.4 nm) and lokkaite (3.94 nm), on a one-to-one relation along the c axis. This mineral was reported by Takai and Uehara (2013, *JMPS* 108: 161-165).

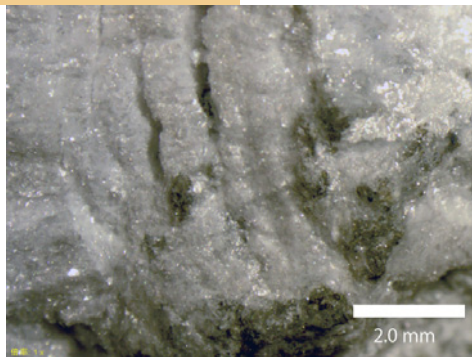


FIGURE 2 Photomicrograph of hizenite-(Y). Hizenite occurs as small, platy crystals (25–50 μm in size and 0.04–0.2 μm in thickness), forming radial aggregates up to 1 cm in a druse.



FIGURE 3 Type locality of hizenite-(Y). S. Uehara (center) and S. Iwano (left) investigated the REE minerals in 2004.

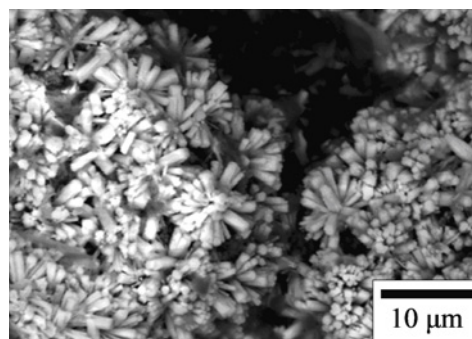


FIGURE 4 Backscattered electron image of rhabdophane-(Y). This is the first finding in nature of a rhabdophane-group mineral whose predominant REE is Y. This picture is also shown on the home page of the JAMS website.

Rhabdophane-(Y) ($\text{YPO}_4\cdot\text{H}_2\text{O}$) occurs in a small druse in the second-stage basalt at Hinodematsu, Genkai-cho, Saga Prefecture (Fig. 4). This mineral was reported by Takai and Uehara (2012, *JMPS* 107: 110-113) as a new Y-dominant mineral of the rhabdophane group.

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ADVERTISING JAMS AT JPGU2014 MEETING

The Japan Geoscience Union Meeting 2014 (JpGU 2014) was held in "Pacifco Yokohama" at Minatomirai, Yokohama, Japan, from April 28 to May 2, 2014. One hundred and ninety-three scientific sessions, which included 45 international sessions, were held. More than 7000 participants attended this meeting. The Japan Association of Mineralogical Sciences (JAMS) had an exhibition booth to advertise JAMS to JpGU 2014 participants. We exhibited our journals—*Journal of Mineralogical and Petrological Sciences (JMPS)* and *Ganseki Koubutsu Kagaku (GKK)*—as well as books authored by our members. Some back issues of *Elements* were also on hand. The JpGU 2015 meeting will be held in "Makuhari Messe," at Chiba, Japan, May 24–29, 2015. We welcome your participation.

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Original Articles

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Letter

'Background holes' in X-ray spectrometry using a pentaerythritol (PET) analyzing crystal

Takenori KATO and Kazuhiro SUZUKI