

Two-type Submarine volcanoes reconstructed in greentuff in the Miocene in Ou Backbone Ranges, NE Japan

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We reconstructed two-type submarine volcanoes in greentuff in the Early to the Middle Miocene in Ou Backbone Ranges in Nishiwaga town, Iwate Prefecture, NE Japan. The first type (Type A) is very flat polygenetic submarine volcano which is mainly composed of massive lavas, hyaloclastites and no pillow lavas. One of the volcanoes of this type reconstructed in the Oarasawa Formation (the lowermost formation in the study area) was formed related to the extensional tectonics forming half-graben in the Early Miocene (Nakajima et al., 2006). The second type is submarine lava domes (Type B) which consists of massive lavas in central part, perlite and hyaloclastite in the marginal part. Type B was formed when the sea was the most deepest in this area. Prior to these volcanism, explosive volcanism occurred. We concluded that the intensity of eruption of submarine volcano in this study area was due to the water depth. This conclusion supports the idea that the eruption at shallow depth is explosive and that at deep depth is effusive (Allen et al., 2010). Kuroko deposits were formed under the quiet environment after formation of type B lava domes.

[Reference]

Allen, S.R., Fiske, R.S., Tamura, Y., 2010, Effects of water depth on pumice formation in submarine domes at Sumisu, Izu-Bonin arc, western Pacific. *Geology*, 38, 391-394.

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