

Occurrence of Woody Pumice from the Okinawa Trough

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Woody pumice was first discovered from sea bottom of the Okinawa Trough, and has long been considered as an indicative of submarine eruptions. I had a chance to dive to a depth of around 1000 meters of the same trough, and observed the occurrence of woody pumice. Woody pumice was found almost everywhere on the sea bottom which represents the surface of a large rise whose topography is just like a thick lava flow or a flat lava dome (10km x 7km x 450m). The size of woody pumice ranges from a meter to more than several tens of meters long. The large blocks are apparently in situ, and represent the crucial part of submarine silicic lava. Both mineral assemblages of phenocrysts and the bulk composition of woody pumice also support this observation. Small pieces are therefore not ejecta but collapsed blocks from the larger ones. No apparent quenched, fragmented structures were observed on the surface of the large pumice. It is therefore considered that the woody structure was formed as the result of the rapid strain (elongation) of gas-rich lava to one direction, and that high discharge rate of magma also would be essential to form woody structure under the deep submarine condition.