

## Investigations of the volcanic ejecta and tsunami deposits in the southern part of Kunashir Island, southwestern Kuril arc

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In October, 2007, an international scientific symposium and field excursions took place in Kunashir Island, southwestern Kuril arc. The volcanic and seismic disasters have frequently occurred around the Kuril Islands. In order to reduce the damages of these natural disasters, we should reveal the frequency and scale of volcanic eruptions, earthquakes and tsunamis. In the symposium, Japanese and Russian scientists reported and discussed the latest results of volcanological and seismical studies. In addition, the public lecture for disaster prevention also took place for local residents.

After the symposium, the geological excursions for the volcanic ejecta and tsunami deposits were held on the southern part of Kunashir Island. We investigated tsunami deposits at peaty lands in the middle southern part of the island. We can continuously observe several tsunami deposits and distal tephra. These would be useful data to discuss the tsunami history around Kuril Islands.

We performed geological investigations for basement rocks and the ejecta of two active volcanoes, Rausu and Tomari volcano, in the southern part of Kunashir Island. Basement rocks are well exposed on the coast line. We observed the exposure of two layers of basaltic lava flows, intrusive rocks showing remarkable columnar joints and a pile of thick and continuous tuff layers. Rausu volcano (888 m), located in the middle southern part of the island, has dacitic lava dome at the summit. At the western flank, we described and sampled the pyroclastic deposits more than 10 m in thickness in detail. Tomari volcano, located in the southern part of the island, has a caldera with a diameter of 4.5 km. Two domes and an explosion crater of the post-caldera activity exist in the caldera. We observed thick lacustrine deposit rich in rounded pumices and overlying phreatic ejecta by the crater-forming eruption inside the caldera. Outside of the caldera, the pyroclastics of the caldera-forming eruptions are observed at the southeastern to southern flank of the volcano. At the southeastern flank, we observed two pyroclastic flow deposits (upper and lower) interbedded by several pyroclastic fall deposits (20 m in total thickness). Paleosol layers are recognized between each pyroclastic fall deposit and the underlying lower pyroclastic flow deposit. It seems that Tomari caldera was formed by successive plinian eruptions. Plutonic xenoliths, such as diorite and gabbro, are often recognized in the pyroclastic fall deposits. In addition, thin (5-8 cm) light brown-colored ash layer is recognized between pyroclastic deposits of Tomari volcano. The ash layer might be distal tephra from Hokkaido.

We will perform petrological investigations, dating and stratigraphic correlations of these rock samples to reveal the volcanic history of Kunashir Island. These data would give important information to discuss the entire volcanic history and related tectonics of the Kuril arc.