

Volcanic geology of Iturup Island, southern Kuril arc

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Volcanic geology of Iturup Island, southern Kuril arc, was investigated in 2 days from August 11th, 2007, especially focusing on the central part of the island. It was performed as a part of joint program for professional researchers of seismology and volcanology between Japan and Russia.

Iturup Island is topographically composed of mountainous area of Tertiary volcanic formations and Quaternary volcanoes surrounded by apron and low relief surfaces, and terraces and alluvial plains along the coast. Two Quaternary volcanoes are preserving volcanic edifices well. Marine terraces develop along the coast and plains of 100 m high extend toward inland.

Neogene Formation occurring along the coast is chiefly subaqueous basaltic andesite that can be correlated with Kanayama Basalt and Sashirui Formation (late Miocene to early Pliocene) of adjacent Shiretoko Peninsula. Some basal andesite is equivalent to Churui Formation or Okushibetsu Volcaniclastics of the Shiretoko. Andesite neck exposes at hilly terrain.

Baransky (1125m a.s.l.) is an active volcano and has intensive hydrothermal area at western flank. Coarse-grained pyroclastic deposits expose along the volcanic flank and partly overlie black volcanic ash soil. This suggests the Baransky is active during Holocene.

Chirip (1587m a.s.l.) is a large composite volcano shares northern peninsula. Chirip has a prominent amphitheater at the western face of summit area. Thick lobate andesite aa lava flows and pumice flow deposits expose along the coast. Overlying black volcanic ash soil is intervened by coarse lithic rich ash layers, which suggest Chirip is also active during Holocene. Part of the upper ash layers can be correlated with eruptive records of AD 1843 and 1860.

Widespread ash fall deposits are found in Pleistocene loam soil and just near the surfaces of peat and dune sand.

Correlations of Tertiary formations between Iturup and Hokkaido are accomplished and may elucidate geological structure of Kuril arc. Baransky and Chirip volcanoes are active and their recent activities must be investigated in detail. Widespread ash fall deposits may play important roles as key beds in order to clarify the eruptive histories of volcanoes.

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