

Eruption history of Tarumae volcano and tephtras since 17th century found in Shiraoi-Tomakomai lowlands

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The Tarumae volcano has been active since the eruption in 1667 after the dormant more than 2,000 years (Furukawa and Nakagawa, 2010, etc). During this duration, sixteen volcanic ash layers were found in this study at outcrops of the Shiraoi-Tomakomai lowlands, south of Tarumae volcano. Volcanic activities since 17th century have been documented more than 70 times for about ten events. However the correlation between the tephtras and the documents has not been performed, excluding 1667, 1739 and 1874 tephtras.

In this study, the sixteen tephtras, named as Nis-1 - Nis-5, Nis-6-1 - Nis-6-4, Nis-7, Nis-8-A - D, Nis-9 - Nis-13, were analyzed in mineral characteristics and refractive index, and were examined in relation to the source volcanoes and chronological sequence along with eruption documents.

As a result. Nis-11 and Ko-a, Nis-8 and 1874, Nis-4 and Ta-a, Nis-3 and Ko-c2, Nis-2 and Ta-b, and Nis-1 and Us-b are correlatable respectively. Nis-10 and 1926, and Nis-9 and 1909 are probably correlatable. Nis-7 may be Tarumae-1864 or Ko-c1. Nis-6-1 - Nis-6-4 can be Tarumae1804-1817, but Nis-6-4 may be Usu 1822. Nis-5 may be Tarumae or Usu 1769.

At the outcrop in the lower slope of Tarumae volcano near Shiraoi-Tomakomai lowlands, a pyroclastic flow deposit was found, including a carbonized tree trunk which was dated by ¹⁴C wiggle matching method to be 1926 as same eruption as Nis-10.

These results and new findings during the latest stage of Tarumae volcano must be significant for the revision of volcanic eruption history and future prediction of natural hazards.

Keywords: Tarumae volcano, tephtra, stratigraphy, Shiraoi-Tomakomai lowlands