

Tsunami height distribution of the 1843 Tenpo Nemuro-oki earthquake

TSUJI, Yoshinobu^{1*}; HORIE, Takehito²; HASHIMOTO, Keisuke²; SASAKI, Takayuki²; MABUCHI, Yukio³; OKADA, Kiyohiro³; KUROYANAGI, Yousuke³; OOIE, Takayuki³; KURIMOTO, Masashi³; KINAMI, Takahiro⁴; IMAMURA, Fumihiko⁵

¹Fukada Geolog. Inst., ²Alpha Hydraulic Eng.Consultant, ³Pacific Consultant, ⁴Kubiki Techno., ⁵IRIDeS, Tohoku Univ.

A large earthquake occurred in the sea area east offing Nenuro, Hokkaido at 6 AM, April 25, 1843 and is called Tenpo Nenuro-Oki earthquake whose magnitude is estimated at M7.5. A tsunami was accompanied with this earthquake, and hit the Pacific coast of Hokkaido and the east coast of Sanriku district, the north part of Honshu. Historical documents which record the tsunami were published by Musha (1941) and ERI, university of Tokyo(1984). It is recorded in the diary kept by a priest of Kokutaiji Temple at Akkeshi town, Kushiro district, Hokkaido that the Akkeshi branch office of the Tokugawa Government and huts of Ainu race were swept away in the residential area around the temple, and in Muko-Gishi area, north opposite coast of Akkeshi all houses were washed away and 34 Ainu people were killed. The official report written by an officer at Kushiro described that one hut and one barn were swept away at Betsufuto, about 36 kilometers east of Kushiro, and 2 houses were swept away at Atoega village. Documents written by the local meteorological observatory of Namuro described that 50 houses village were swept away at Hanasaki, about 8 kilometers south west of Nemuro Town, and survived people moved their residences to Honioi village about 6 kilometers north of Hanasaki. In this official report also it was recorded that a boy called Yamamoto Koshichi was lived on the coast of Notsuke peninsula. He experienced the tsunami there when he was 12 years old. He mentioned that the wave was divided into two waves in the offing of Notsuke coast, and the bigger wave hit the south coast of Shiretoko Peninsula. On the basis of those records, we conducted field survey for three times, and obtained the distribution of the tsunami height as the figure. The authors of the present study wish to express their thanks to JNES for its financial support in promoting our research.

Keywords: historical earthquake, historical tsunami, Hokkaido, Nemuro, Kushiro, Kuril trench

