

Disaster research in the Toyama Earthquake(1718)

SAKAMOTO, Masao^{1*}

¹Iida city Museum

1,Introduction

Of the destructive earthquakes recorded in Japan over the past approx.1600 years, the only one that caused widespread damage in the southern part of Nagano Prefecture was the Toyama Earthquake of 1718, which had its epicenter at Minamishinano Wada, Iida City. The Toyama Earthquake struck just after 2 pm on August 22, 1718 with a magnitude estimated at 7.0. This earthquake is considered to have occurred along the Median Tectonic Line.

2,Survey Results

I identified 35 places where disasters occurred in each prefecture of Nagano Gifu Shizuoka and Aichi. Among these places, a number of characteristic disaster examples are shown as follows.

(1)Minamishinano Wada,Iida City: Mt.Moriheizan located close to the epicenter of the earthquake, partially collapsed to form the elevated area called Deyama at its foot. A landslide pushing out from Oshidezawa dammed the Toyama River. **(2)Arakida, Anan Town:** The right bank of the Tenryu River is composed mostly of Neogene strata centered on sandstone and mudstone overlaying granite bedrock. The slope at the place called Kibishima collapsed due to the earthquake and dammed the Tenryu River. **(3)Furujo,Anan Town:** Geologically, this area consists of Neogene sandstone and mudstone. In the Furujo district, landslides occurred in 24 places, and fields with place names that are still in use today were damaged or destroyed in 33 places.**(4)Hisawa,Shimojo Village:** There is an oral tradition stating that the local people saw the collapsed state of mountainsides in the Ina and Akaishi Mountains from this district. **(5)Enshu Yokoyama Town** (Yokoyama Town, Tenryu Ward, Hamamatsu City, Shizuoka Prefecture): A document was found stating that the Tenryu River was stopped at a place called Enshu"Teuna". Currently this place name is not used, but there is a place name "Unna", which is also along the Tenryu River, so it was presumed that this was where the river was dammed.

3,Discussion and Consideration

(1)What this survey shows: The distribution of the records concerning this earthquake disaster with its epicenter on the Median Tectonic Line in Minamishinano Wada, Iida City is quite one-sided. Records of damage were found only on the west side of a border marked by the Median Tectonic Line running roughly north-south. Because the Akaishi Mountains on the east side of the border had almost no inhabitants, no records of damage from the earthquake were left there. Also, over the course of the nearly three centuries that have passed since the earthquake occurred, the amount of documentary material has been greatly reduced as a result of natural and human causes. **(2)Geological specificity:** The disasters associated with this earthquake can be divided into three types according to geological differences and the disaster distribution. The first type involved large-scale landslides and disasters occurring on basement granite. The second type constituted disasters occurring on Neogene strata centered on Anan Town. The third type of disaster occurred on Quaternary terrace gravels and alluvial fan gravels. **(3)Relation to the Hoei Earthquake:** In 1707, the Hoei Earthquake struck with an estimated magnitude of 8.6, making it one of the largest earthquakes in Japanese history. The Toyama Earthquake, which struck 11 years later, is considered to be an after-shock of the Hoei Earthquake.

SSS23-P01

Room:Poster

Time:May 1 18:15-19:30

Keywords: toyama earthquake, the year 1781, earthquake disaster, median tectonic line, hoei earthquake