

Historical Records on Earthquakes, Tsunamis and Volcanic Eruptions in Japan

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Japan's combination of high seismic, tsunamic and volcanic activities and a long history has produced copious written records of historical earthquakes, tsunamis and volcanic eruptions since around the 6th century. They are contained in official and private histories, chronicles, biographies, letters, diaries, memoranda, essays, etc. Systematic collection, publication and investigation of such historical documents began late in the 19th century. Concerning earthquakes and tsunamis, around 8,400 historical records of about 250 pre-1867 earthquakes were clipped and printed in Musha's (1941, 1943a, b, 1951) books of four volumes. Since the 1970's a huge amount of additional historical documents of earthquakes and tsunamis has been collected intensively from all over the country. Usami and his colleagues (1981-1994) have compiled a series of books of 21 volumes containing about 45,000 new clippings of documents. Thus, almost all of Japan's known historical materials on earthquakes and tsunamis have now been transcribed into 25 printed volumes preserving their original styles in classical Japanese language. The collections include records of about 400 destructive earthquakes from A.D. 599 to 1872 as well as those of some huge trans-Pacific tsunamis. Epicentral coordinates and magnitudes have been estimated for about half these events and details of earthquake and tsunami disasters have been summarized in catalogues. Musha's books also include a large number of historical records on volcanic eruptions and related phenomena, while Usami and his colleagues concentrated on earthquakes and tsunamis only. The existing collections of historical sources, however, contain rather many low-quality records that produce errors and fictitious (fake) earthquakes/tsunamis/eruptions, and are difficult of full utilization because they are just massive printed materials. Therefore, constructing a full-text digital database of all historical records after careful examinations from historiographical viewpoints, as Ishibashi *et al.* (2005) have started for the Ancient and Medieval ages, is the next important task to give wide-ranging researchers easy and full utilization of historical records. Revision of earthquake/tsunami/eruption catalogues and construction of, e.g., a seismic intensity database with international standard are also necessary.

Keywords: historical records, earthquake, tsunami, volcanic activity, Japan, collection, publication, catalogue, database.

References

- [1] K. Ishibashi, *Annals of Geophysics*, **47**, 339-368 (2004).
- [2] K. Ishibashi *et al.*, *AOGS 2nd Annual Meeting*, SE18 (2005).