

# The Historic Typhoon Deposits in the Coastal Lake Sediments along the Western Coast of Kyushu Island, Japan, Presumed by Diatom Analysis

\*Kaoru Kashima<sup>1</sup>, Yu Fukumoto<sup>2</sup>, Tsuyoshi Haraguchi<sup>3</sup>

1. Department of Earth and Planetary Sciences, Kyushu University, 2. Ritsumeikan University, 3. Osaka City University

The hazard histories during the last 6700 years at Lake Ikeda (Lake Daija) at western coast of Kyushu Island, southwest Japan were presumed by diatom assemblages in the lake core deposit. Lake Ikeda (Lake Daija) was a small coastal freshwater lake of about 200 m diameter, and Woodruff et al (2014) presumed the huge typhoons in 1274 and 1281 called “Kamikaze” Typhoons in the lake deposit. We took all core drilling until the base of the Holocene deposits there in 2016, and analyzed diatom assemblages of 500 samples during 8000 years with 2-4cm intervals.

The lake was the brackish lake, dominated by *Cyclotella caspia* (*C. atmus v. gracilis*), *Thalassiosira* spp., *Diploneis smithii*, *Tryblionella* spp. Since 6700 yBP, the lake was changed to be freshwater lake by the sand dune to separate the lake from marine. The freshwater environment has been continued until now, and freshwater plankton and benthos species, such as *Aulacoseira* spp. *Cyclotella* spp. (freshwater), *Achnanthes minutissima*, *Staurosira* spp., *Synedera* spp. were dominated.

The following 9 times, we presumed the eventual deposits caused by natural hazards such as huge typhoons during the freshwater period; about these 6700 years. Three of them were characterized by *Pinnularia* spp., *Eunotia* spp. and resting spores of Chrysophyceae, presuming huge deposition of flooding materials (F1:5800 yBP, F2:2500yBP, F3:670 yBP). In addition to them, 6 times of marine invasions characterized by *Cyclotella caspia* (*C. atmus v. gracilis*), *Tryblionella* spp., resting spores of *Chaetoceros* were presumed (M1:6400 yBP, M2:4200 yBP, M3:3800 yBP, M4:1900 yBP, M5:1400 yBP, M6:1100 yBP). All of them were presumed as huge typhoons or high tide events. The Kamikaze Typhoon by Woodruff et al (2014) was correlated as F3 Event.

Keywords: Diatom analysis, Typhoon deposit, High tide event, Holocene, Western coast of Kyushu Island, Japan