

Traces of Tsunamis of the Nankai Earthquakes in the Bottom Sedimentary Layers of Kirima-Ike Lagoon, Susaki City, Shikoku Island

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A series of gigantic earthquakes accompanied with huge tsunamis occurred in the sea region off the Nankai District, the Pacific side of Shikoku Island and the western part of Honshu Island periodically in the intervals of about one hundred years. Lagoon Kirima-Ike is located at the river mouth of Sakura river, Susaki City, Kochi Prefecture. Whenever a gigantic earthquake occurred in the open ocean area, sea water rushed into the lagoon by tsunami waves, and thin sand layers were formed. We gathered piston core sampling at several points for the bottom sedimentary layers of the lagoon, and found out four eminent and four weak traces of past tsunamis. We checked vertical distributions of radius grade of sand, magnetic susceptibility, existence of nanno plankton. We also made dating by the carbon 14 method for four layers.

We found four eminent tsunami traces at the depths of 10-15cm(Event 1), 60-68cm(Event 2), 167-172cm(Event 4), and 210-215cm(Event 5) below the lagoon bed. In addition, we find four weaker traces at 84cm(Event 3), 230cm, 260cm, and at 274cm(Event 6,7, and 8). The result of carbon 14 dating showed that the Events 2 and 4 were formed AD 1929-1950 and AD 1670-1730, respectively and they are suggested to be the tsunamis of the 1946 Nankai and the 1707 Hoei Earthquakes. The event 5 shows the years of AD1490-1550, so it was formed by the tsunami accompanied with the 1498 Meio-Nankai Earthquake, which is not always confirmed its existence by the historiographical discussions.