

## A Specific Diatom Indicative of the Degradation of Coastal Ecotones

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In Japan, the Jomon culture, which endured from ca. 13000 until ca. 2300 years ago, represents one such adaptation to the diverse marine and littoral resources of the Holocene. During the Jomon period, the retreat of the ice sheets in high-latitude regions, where the major expansion of ice sheets and glaciers took place at the last glacial maximum, caused eustatic sea levels to rise from about -55 m at the start of Holocene (11,500 years ago) to around modern elevation at about 6000 years ago. The Holocene marine transgression that is called the 'Jomon marine transgression' in Japan culminated around 7000-6000 years ago. At that time the sea reached its most landward position in many of Japan's coastal regions, and coastal inlets or embayment were most extensive.

Diatom assemblages in sediments can offer us reliable information for the environmental conditions at the time of sediment deposition. In the successive sediment sequences recording the Jomon marine transgression, a heavily silicified sub-spherical diatom has been often encountered, and this characteristic form of diatom has been described as a new species of *Pseudopodosira* (Tanimura and Sato, 1997).

*Pseudopodosira kosugii*, a brackish water diatom, has been identified in only two present-day habitats: in the Obitsu-gawa river mouth in the Chiba Prefecture, and in the Gamou lagoon in the Miyagi Prefecture. Along most of the Japanese coast, however, this species occurs abundantly in the successive diatom assemblages of sedimentary sequences formed as a result of the Jomon marine transgression (Sato et al., 1996).

In this study, stratigraphic distributions are shown for the northeastern coast of the Seto Inland Sea. During the Jomon period, this species was specific to the transition from marine to freshwater environments and was widely distributed. A present-day habitat of this species, such as exists in Obitsu-gawa river mouth facing Tokyo Bay, provides a window onto the former natural environment of the tidal flats. The scarcity of this species in other habitats is probably due to the deterioration of coastal environments. Thus, *P. kosugii* is sensitive for habitat degradation and is a good ecological indicator in the assessment of coastal ecotones.