



## **A 16 events tsunami catalogue from Sweden**

Nils-Axel Mörner

Paleogeophysics & Geodynamics, PL 5675, S-26995 Båstad, Sweden

In 1995, we found field evidence of the first tsunami event in Sweden in the autumn of varve 10,430 BP. In 1998, a second event was recorded; in varve 9663 BP. After that, we had established a successful technique for the recording of paleo-tsunamis. At present we have a catalogue including 16 separate events. Some of those had waves breaking into lakes 10 to 20 m above the corresponding sea levels. The breaking-in of a tsunami wave is usually seen as a graded or double-graded sand layer in marine clay or lake gyttja. The sand layer includes planctonic microfossils of the open Baltic. Out of the 16 events, 5 refer to the West Coast (occurring 12,400, 11,600, 11,250, 1600 and 900 BP) and 11 to the Baltic (occurring 10,430, 9663, 9428, 8600, 8000, 6100, 4000, 4000, 3500, 2900 and 2000 BP). Our tsunami events are always established in association with paleoseismic events. At the time of deglaciation, the sea level was significantly higher over the coasts of Sweden, providing enough water depth for the creation of large tsunami waves. In the off-shore region, sandy-gravelly layers were deposited. They range from tsunami beds via hybrids between tsunamis and turbidites to true off-shore turbidites. In varved clay sequences, the turbidites can be dated as to a single varve-year. The height of the breacing wave is recorded in the difference between the sea level at the time of the tsunami and the height of lakes into which the run-up water of over-washing reached, depositing tsunami layers. The distance of the land area between the shore and the invaded lake is also significant. The spatial distribution of a tsunami event is another important parameter.

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