History of two types of earthquake recorded on marine terrace and fossil in the Mumaung Island, western Myanmar.

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The potential for giant tsunamigenic earthquakes off the west coast of Myanmar, along the plate-boundary north of the 2004 Sumatra-Andaman earthquake source has been debated. Tectonic environments, recent stress and crustal strain observations, and historical descriptions of geomorphological changes and eyewitness accounts of the 1762 Bengal earthquake all support future earthquake potential, but no clear evidence has been reported. We found paleoseismological evidence along the Rakhine coast of Myanmar indicating the coastal uplift associated with the 1762 earthquake. Several marine terraces with at least four (partly six) emerged steps along the coast of the Mumaung Island, the Rakhine coast of Myanmar, indicates sudden sea level changes associated with earthquakes. Height of each steps were measured to be 3-5 m, 7-10 m, 12-14 m and 15-18m above mean sea level in ascending order. On the lowest step, we detected two levels of emerged oyster reef indicating paleo-tidal level at 4.6 m and 6.4 m. The lower reef can be correlated to the 1762 earthquake involved emergence of the lowest step, but the higher reef seems to be not related to the higher step. Amount of uplift of the penultimate event was estimated to one thirds smaller than the 1762 event. This suggests that two types of uplift events exist in this area. We should note that not only visible large uplift events shown in marine terrace, but also smaller uplift events caused between each. Timing and recurrence of the past events will be discussed after obtaining radiocarbon dating result.