A normal typed gigantic earthquake occurred in the sea region south west of Samoan Islands at 6h48min, September 29, 2009. The tsunami accompanied with this earthquake hit the coasts of Upolu Island, the main Island of the Independent State of Samoa, Islands of American Samoa, and Niautuputapu Island of the Kingdom of Tonga. Total number of the casualties was 183, and 142 people of them were residents of Upolu Island. We enter Upolu Island on October 12, two weeks after the event, stayed about ten days, gathered eyewitnesses’ accounts, and measured tsunami run-up heights. Several minutes after the shaking of the main shock, huge waves of the tsunami hit the southern and eastern coasts of Upolu Island. Maximum run-up height of 13.2 meters was recorded at Lalomanu Village located at the east south top of the Island, where seawater rose up to the top of the bank behind the residential area, and all houses were swept away. Seawater invaded up to the point about one kilometer apart from the shoreline, where fishery boats were carried. Another earthquake of M8.3 occurred in 1917 in nearly the same area as in 2009 and Samoa Island also suffered severely from the tsunami, but nobody knew the handed down legend of it.