

THE EARTHQUAKES OF OCTOBER, 1931, IN THE SOLOMON ISLANDS

By S. GOLD

AMONG the oldest seismic regions of the earth are the Solomon Islands. These islands lie in the Southern Pacific about 1000 miles northeast of Australia. They are volcanic and mountainous.

During the month of October, 1931, a series of earthquakes rocked the eastern portion of these islands. Two of the shocks, occurring on the 3rd and 10th respectively, were extremely severe. A very large tidal wave followed the earthquake on the 3rd and swept everything before it. The parts affected by the wave are indicated on the map.

As a result of these earthquakes about 50 persons were killed and 700 rendered homeless. It is difficult to estimate the total loss of life because, in some parts, the natives are wild and uncivilized.

There are several reasons for the casualties not reaching great proportions. The natives live in simple bamboo and leaf-thatched houses and there are no heavily constructed buildings. Also the population is more or less scattered. Further, along the coast of San Cristoval, which was mostly affected, there are a large number of land-locked harbours formed from old craters, the broken lips of which form the entrances.

Preliminary locations by the United States Coast and Geodetic Survey place the epicentre of the first shock at 14°S. , 160°E. It would seem then that tremendous damage must have occurred on the islands Rennell and Bellona, from which there has been no communication as yet.

For the second earthquake the coordinates were computed to be 8°S. , 160°E. This agrees with the observed data as this earthquake was felt quite severely on Malaita, Florida, Ysabel and Guadalcanal.

At Ottawa the following determinations were made from the seismograms:

	Time at Origin	Δ	Maximum earth displ'nt
October 3	19-13-21 G.M.T.	13,700 km.	224 microns
October 10	0-19-47 G.M.T.	13,300 km.	161 microns

At the Riverview College Observatory, Sydney, Australia, 20 distinct shocks, all probably originating around the Solomon Islands, were registered during the month of October.



FIG. 1. Map showing the location of the earthquakes.

The main damage on each island is noted in what follows.

San Cristoval. The first quake shook this island so violently that two villages disappeared. Then a huge tidal wave between

30 and 40 feet high, swept away 18 villages on the southern coast. Water and sewage services were destroyed at the government residence at Kirakira.

Many parts of the coast line were entirely altered. Salt water sweeping over the island destroyed vegetation and washed surface soil away, showing rocks and coral reef.

Ugi. Violently shaken by the earthquakes.

Malaita. Heavy damage occurred. At Su-u the tidal wave ruined the cement breakwater and the reinforced cement steamer wharf. At Takataka great damage to buildings and goods was reported.

Between Auki and Su-u, off the western coast of Malaita, there is an extensive barrier coral reef, called the Bina Lagoon. There were several well-populated islands along the extent of this reef. The earthquakes destroyed the foundations of these islands, leaving the people swimming in the water. Heavy landslides occurred on the mainland directly opposite.

At Oni Pusu Harbour the reef rose several feet.

Florida. Considerable destruction of property reported. The reinforced concrete wharf at Makambu sank about 12 inches and cracked in several places. Carpenter's wharf at Tulagi was shaken down.

On October 13, 1931, due to a sharp sudden jolt, the harbour bed at Carpenter's wharf rose from 10 to 20 feet, preventing the berthing of ships.

Guadalcanal. Numerous huge landslides occurred among the mountains. Due to the tidal wave a small village on the eastern end, near Aola, disappeared. No other serious damage was reported.

Ysabel. At Fulakora the tremors were quite strong, but only minor damage resulted.

Rennell and Bellona. No news has been received yet from here as these islands are visited only by the Government vessel once or twice a year.

These two earthquakes were also felt by people on ships which happened to be in the vicinity of the islands.

On October 3, the labour recruiting schooner *Mendana* was about one mile off the coast of San Cristoval when the jolts started. A

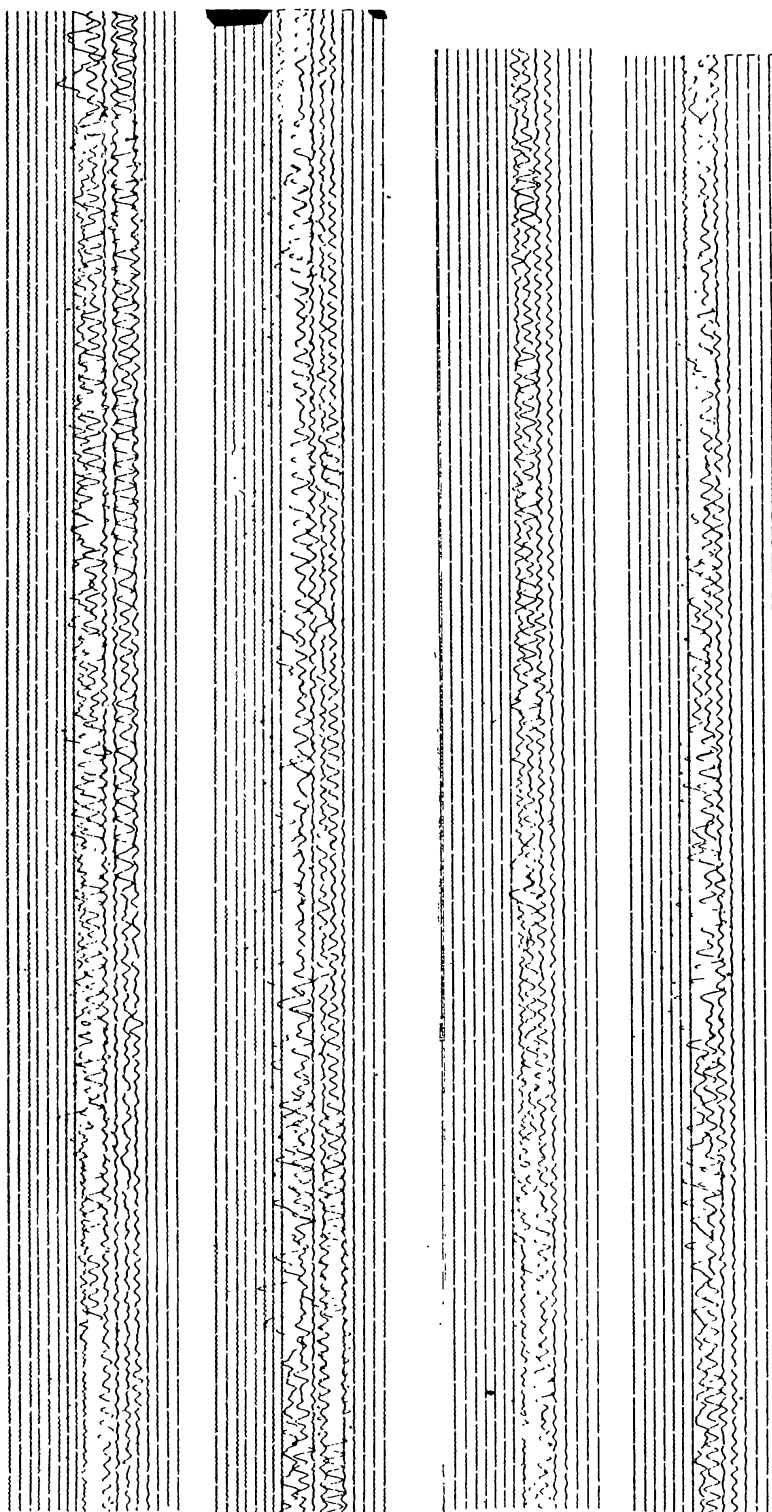


FIG. 2. The two large Solomon Islands earthquakes of October, 1931, as recorded at Ottawa on Milne-Shaw seismograph No. 17, EW component. The upper two strips show the record of October 3 to 5, 1931; the lower two strips that of October 8 to 10, 1931.

submarine disturbance developed around the ship which caused it to roll about alarmingly. The captain reported that the ship's bottom was struck by boulders and sand and there was a smell of sulphur.

On October 10, the steamer *Montoro* was about 60 miles from Tulagi (Florida) when the earthquake occurred. The ship rolled so violently that it was thought she had struck the reef.

One of the Jesuit Fathers of Visale (Guadalcanal) was in his boat about 25 miles west of Guadalcanal on October 10. He reported that the boat seemed to be hit by sledge hammers on the bottom. The rudder of the boat was damaged.

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