GEOLOGIC PAST

Highlighting Articles from *GSA Bulletin*

27 DAYS OF EARTHQUAKES

***GSA Bulletin*, July 1910**

Lawrence Martin: *Alaskan Earthquakes of 1899*

In a paper first presented to the Society at its annual meeting on 29 December 1909 (published in *GSA Bulletin* on 5 July 1910, v. 21, p. 339–406), Lawrence Martin describes the 3–29 September 1899 earthquakes in the Yakutat Bay region, Alaska. He states that seismographs as far away as South Africa and Italy recorded the shocks, "several of which equaled, and one (September 10) far surpassed, the 1906 California earthquake in duration and amplitude" (p. 342). Plate 29 includes a comparison of the seismographs recorded in Catania, Italy, for both the 10 September Alaska "great earthquake" and the 18 April 1906 San Francisco earthquake. Martin is quick to report, however, that "in this wilderness portion of Alaska there was no serious property damage and no recorded loss of life" (p. 342). Local observers of the earthquakes included prospectors, a ship's captain in Yakataga, 100 miles to the west, and telegraph operators along the Klondike trail. Shocks were felt across an estimated 216,000 mi^2.

For the earthquakes on 3 and 10 September, and then for those from 11 to 29 September, Martin includes detailed accounts by observers as close as the coast of the proposed epicenter, Disenchantment Bay, and as far away as the lower Yukon River, 730 miles to the west-northwest. Two-hundred and ten miles away, a U.S. Army captain described the shock of 3 September as causing "groves of cottonwoods to wave like wheat" (p. 351). Prospectors at the "very origin of the earthquake … counted 52 shocks on 10 September, culminating in the great earthquake at noon" (p. 359). Their accounts include an observation of a wave about 20 feet high rushing onto shore, washing several men up onto a moraine, followed by a second wave 20 or 30 feet high. Multiple avalanches were observed, and changes in the level of the land included "uplifts of … 40 to 47 feet on the northwest side" of Disenchantment Bay. Seventeen miles to the southeast, "minor faulting broke a hill into strips" (p. 361).

Much seismographic data is recorded in this paper, and an extensive comparison to other Alaskan earthquakes is included.

Lawrence Martin accompanied the U.S. Geological Survey party during its field observations in the summer of 1905 as special assistant in physiography and glacial geology.