

fertile soil of Lewis and Chehalis; and after passing the Chehalis river is a mass of fine clay, extending from Montezuma toward Shoalwater bay. It is from this fact that one is able to tell whether the surface for some miles east of him on Puget sound is level or not by examining the glacial drift deposits. If it is clay on the surface he can walk for many miles before reaching rocky, mountainous ground, to the northeast of such deposits.

The chain of volcanoes on the west flank of the Cascade range, from Mount St. Elias, in Alaska, to Mount Shasta, in California, all began to raise their heads about the close of the glacial period. The volcanic forces of the coast were concentrated at such points, and while they were coming up the coast was settling. The mountains cooled internally, contracted in length, the gorge of the Columbia and the canyon of the Fraser made a passageway through the mountains for those rivers to the ocean. But the Columbia came not into existence until long after the glacier had disappeared and Baker and Rainier and these other volcanoes had been actively at work.

North of the Chehalis river and west of Hood's canal is a region very little known. Here is a mountain parallelogram about fifty miles square. All around it are to be seen the old Coast range with its rounded summits worn down about one-third of the way to their base, while the sharp, well-defined, jagged peaks of the Olympic mountains show no trace of other than local glacial action. This difference is plain to be seen from the east, south and west sides, but on the north an older range, running parallel to the straits, hides these newer, wilder, sharper and more jagged peaks from view.

While the whole coast was settling, these volca-

noes, by the amount of matter they were throwing to the surface, were still further hastening the final catastrophe that took place. Earthquake fissures hundreds of miles in length and of unknown depth rent the sound country. The San Juan mountain chain was broken north and south, east and west. The mountain range that had crossed the sound country in the vicinity of the narrows west of Tacoma, and had perished in battling with the glacier, although worn to its base, yet presented such obstacles to the earthquake that the channel of the sound, where it cuts through this old mountain base, is only about a mile wide, about one-fifth or one-sixth its average width. It is probable that Vancouver's island was separated from the mainland. Gray's harbor, Shoalwater bay, the valley of the Lower Chehalis, the valley of the Columbia west of the Cascades, the Willamette valley and San Francisco harbor, with the valleys of the San Joaquin and Sacramento, were all formed by sinking of the surface and immense fissures in the earth, at about the same time the sound country was formed.

Mount Baker, Mount Rainier and the Olympic mountains form three angles of a nearly equi-angular triangle. The main Cascade range between Baker and Rainier was quiet. These two mountains acted and reacted on each other, and the surplus force not being able to go east, was driven to the other angle of the triangle. Hence the Olympic mountains came up, not a range, not one well-defined peak, but a dozen or more sharp, jagged peaks, each distinct, but together occupying the whole ground, and presenting a surface so rough, so broken and so difficult to travel over that few have ever ventured to explore them.—*Eldridge Morse, in Snohomish Eye.*