

volcano exhibits, perhaps, a greater explosive energy than the ancient one, and hence it may disperse greater volumes of ashes; yet some of the ancient volcanoes, near the beginning of modern geological history, have ejected vastly greater quantities of ashes than have been known to escape during any eruption of historic times. Let us make the acquaintance of some of the most remarkable of lava-covered areas.

Let us turn, first, to what is probably the most extraordinary outflow of lava lying on the earth's surface. A concise, but comprehensive description has been furnished by Professor Joseph Leconte: "Commencing in middle California as separate streams, in northern California it becomes a flood flowing over and completely mantling the smaller inequalities, and flowing around the greater inequalities of surface; while in northern Oregon and Washington it becomes an absolutely universal flood, beneath which the whole original face of the country, with its hills and dales, mountains and valleys, lies buried several thousand feet. It covers the greater portion of northern California and northwestern Nevada, nearly the whole of Oregon, Washington, and Idaho, and runs far into Montana and British Columbia on the north. Its eastern and southern limits are not well known, but its extent can not be less than one hundred and fifty thousand to two hundred thousand square miles, with a thickness of three thousand to four thousand feet in its thickest part, where cut through by the Columbia River. In another place, at least seventy miles distant, where cut into twenty-five hundred feet deep by the Des Chutes River, at least thirty successive sheets may be counted."

The Columbia has cut through the entire breadth and depth of the Cascade range, down to within one hundred feet of sea-level. Here is a cañon one hundred miles long, with the summits of the range rising twenty-five hundred to thirty-eight hundred feet above the river surface. The entire walls of the cañon are composed of ancient lava. When we reflect that the peaks of the Cascade range are simply results of erosion, we can well believe that the highest summits were