

Multnomah
County

PHANTOM MONTAVILLA VOLCANO?

1940?

By

John Eliot Allen

Twenty million years ago the region where Mt. Tabor, in east Portland, now stands was submerged beneath the flowing waters of the ancestral Columbia, which, Dr. Hodge tells us at that time crossed the Cascades where Mt. Hood now stands. Flood waters in this giant stream of the Troutdale epoch carried quartzite and other gravels for hundreds of miles from the northeast and deposited them in gravel bars and deltas in the Portland area. These gravels filled up to an elevation higher than the present Mt. Tabor, well over 600 feet, and the great flood plain probably covered many tens of square miles in this part of western Oregon.

When volcanos burst forth in the high Cascades and Mt. Hood began to spew forth ashes and lava, this river was dammed and deflected far to the north. Forces within the crust of the earth caused it to warp and fold. New river courses began to cut down through these arched gravel deposits of the Portland area. These streams cut valleys in the gravel plains, dissecting them until the topography had much the appearance that it has today. Small new volcanos and cones broke through the gravels of the east Portland plains and poured out lava upon them.

Rocky Butte, to the northeast of Mt. Tabor was once a small andesite volcano, Kelly Butte to the southeast was also in part composed of lava. If there was then a volcano to the east of the present day Mt. Tabor, perhaps its crater lay somewhere above Montavilla. A small cinder cone grew up, low on the west flank of this hypothetical volcano. The tremendous flood waters of the Ice Age, which coursed down the Columbia and flowed over the Portland area from the northeast to the southwest, may have been hundreds of feet in depth, they undermined and cut away most of the east half of Rocky Butte and most of the north half of Kelly Butte. The currents striking Rocky Butte were deflected to the south towards Montavilla volcano. The currents striking Kelly Butte

were deflected to the north and northwest towards Montavilla volcano. A flood over three miles in width was thus constrained by these obstacles into a channel less than two miles wide and the Montavilla volcano stood in the center of these rushing waters.

It is no wonder that nearly all of the lava of Montavilla volcano has been washed away, leaving only its western base of Troutdale gravel, and a few boulders such as those found at the Division Street reservoir and further to the south and west. The wonder is that these waters, which at one time rose so high that they flowed through the Belmont Street windgap at an elevation of 400 feet, did not completely wash out and away the small, soft, unconsolidated cinder cone. Although the floods of the ice age cut down and carried Montavilla Volcano away, it served a purpose, however, in protecting the gravels at its western base, so that in its destruction it preserved the Mt. Tabor and the Mt. Tabor cone of today. As the waters gradually receded over a period of thousands of years, the glacial gravel deposits which had been built up during the major floods to an elevation of 300 feet were scoured and eroded, first to a terrace with an elevation of 200 feet then down again to a terrace with an elevation of 100 feet, the last to be formed before the present river terrace.

The great scour channels of the east and north sides of Rocky and Kelly Buttes remain as a mute reminder of the old course of the currents; the old channels also remain as closed depressions on the west of Rocky Butte and north and south of Mt. Tabor.

Now Montavilla volcano is gone. Only one other phase of erosion has acted upon Mt. Tabor in recent times; the W.P.A. cut away half of the cinder cone.