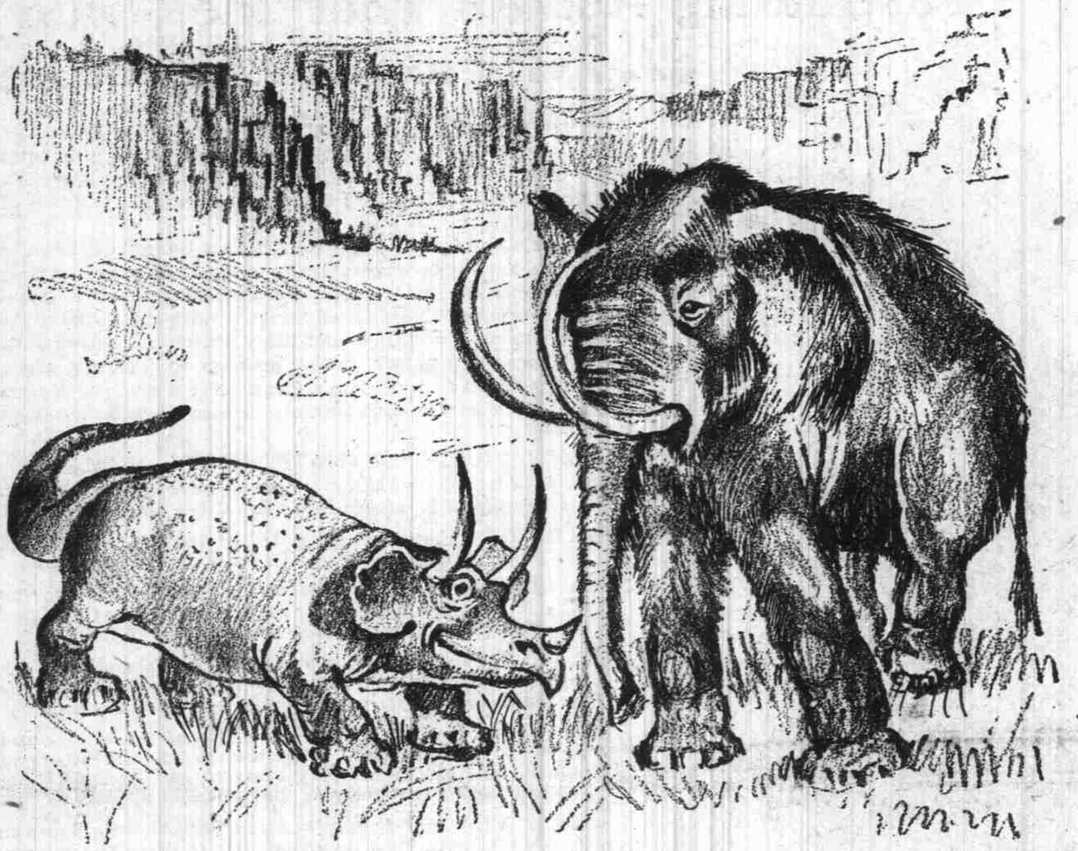
PREHISTORIC PORTLAND

Playful Gods Built a Wondrous Foundation for a Great City



By Earl C. Brownlee

IN THOSE hoary ages before civilization came to raze the playground of the dinosaur and Eve descended into this worldly apple orchard to play havoc with the scheme of things, Portland rested at the foot of a puffing, popping volcano, whose scorching lavas were cooled in the lapping water of a great fresh water lake.

Eons back perhaps, the ocean had engulfed this whole big country and buried it under a crust of seashells and other marine deposit whose character is recognizable in certain deep excavations.

Then the level of the earth—a toy in the lap of nature—gradually raised and crowded the ocean into its present confines, while nature went on with her weaving.

Uncounted years heaped upon one another after the ocean receded before the playful gods sent a deluge of water to inundate the present Willamette valley, a large part of Eastern Oregon and parts of Washington and Idaho in a gigantic lake.

Count years by the millions and you will arrive at that period when huge redwoods reared their shaggy branches into the air while at their bases romped the weird animals of those prehistoric days. Vision the advancing avalanche of glaring ice that swept over the land that is Oregon, crushing before it the plants and the animals that dared to stand in the way of nature's wrathful powers. Your vision is substantiated by geological fact.

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Between the period at which the ocean covered Oregon and the time the first great lake came to be, there was a world of life on this particular portion of the planet. Then the angry old world again reared it plains, and the lake was gone, leaving a great deposit of gravel and rock, upon which life was restored as the years tumbled on toward an eternity. Those gravels are found today stained with the rust of iron, under the towering Cascade range and elsewhere—the crest of Mount Tabor, for instance, whose age is greater by hundreds of centuries than the age of the Cascades.

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There were three periods in the processes nature employed to build the foundations of Portland. Through the studies of Ira A. Williams, geologist for the Oregon bureau of mines, we are privileged to probe the mysteries of these dark ages.

The geologist knows the facts of the past. But to him, as to the layman, the future is a mystery, pregnant with the possibilities of a recurrence of past phenomena. There is no knowing what is to come about in a world of which nature has made a puppet—a surface upon which she has indelibly etched her history in imperishable rock and in grain of sand that withstand the ravages of the centuries.

Startling, awe inspiring, wonderful facts will be found, if the reader will estimate time by the millions of years, throughout the geological history of the fertile valleys and forested hills of Oregon, whose secrets such men as Williams have quietly, surely opened to us.

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Centering present attention upon the site of Portland, we find, with Mr. Williams' help, in the very heart of the city a picturesque parked knoll that in the long gone ages was an active volcano.

That knoll is Mount Tabor, giving place to one of the city's prettiest parks and to the storage tanks of an important part of the city's water supply.

From the crest of Mount Tabor, Rocky butte and Mount Scott are visible in the distance. Both are of volcanic origin. The geologist, whose facts and figures would be an intricate puzzle to the mind not versed in geology, finds, in the language of the layman, that Rocky butte is the product of an "ooze" of hot lava from a crack or perforation in the earth's surface long before the light of the era of man dawned.

Mount Scott, perhaps ages before Mount Tabor, spouted its volcanic froth over the countryside, building its part of the plain upon which the city rests.

Imagine a line over the city from the hills on the west slope of Mount Tabor. That line denotes the approximate level of the land that underlay the great lake.

But the erosion of the ages gradually cut one course after another into that surface, eating down until today the waters that once were a great lake are in two rivers and several small streams. This erosion left terrace after terrace as the water ate downward and the successive shores of the lake and the latter day rivers are plainly visible to the geological eye.

Beaumont is approximately at the level of the floor of the one time lake. Rose City Park is a sign that the water dropped from the Beaumont level and from Rose City Park to the river other shore lines are denoted by the terraced "steps."

Rocks are found along the slopes of the high hills west of the city as well as upon the crest of Mount Tabor that could have been placed there only by the swift waters of a huge river that spread itself over the country even after the volcanic outbursts of Mount Tabor.

Williams has found ancient river laid gravels at the very summit of Mount Tabor. How much higher that hill may have extended no one can guess, but it is a geological assumption that these same gravels spread over the whole surface of the portland valley to a depth at least as great as the present height of Mount Tabor. This old gravel plain covered a great area, studies far up the Willamette and Columbia rivers have proved.

And they are found under the Cascade range—proof that when nature laid them there were no mountains dividing what are now Western and Eastern Oregon. Mount Tabor is ages older than the ancient, majestic Cascades.

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The geological epochs that built Portland's foundation are evident in many places. Underlying the great lava deposits that Portland certainly is built upon there have been found signs of the sea—a surface that could be created only by the pressure of ocean waters.

Then, upon the layer of lava, came a mighty river, sweeping over the lava floor a covering of soil, gravel or what not.

How such a thing is not only possible but a positive fact is proved to the most skeptical person who will step off a street car just this side of the Oaks and observe the composition of the hillside exposed by the waters of a once wider river.

There, layer upon layer, the deposits that are the foundation of Portland of more modern, yet inestimable, years are visible. A layer of sand, a layer of gravel, another of silt, another of gravel and so on as high as the eye can discern, to the top of the bluff upon which that part of the city rests.

For proof of the volcanic character of Mount Tabor, the reader, geologist or uninitiated, may visit the present pretty park. There he will find, where excavators have been at work, that the hill is a massive pile of cinder, bombs, clinker and ash. These materials are not merely piled together helter skelter, but flowed in parallel and inclined layers. Follow these inclines and you will arrive at the approximate location of that old, old crater on the southwest summit of the mountain.

Other more recent volcanic piles show almost exactly the some construction, proving thus the successive showers of lava.

"We may now speak with perfect correctness of Mount Tabor as representing the site of an ancient volcano," Mr. Williams says, in putting the stamp of geological approval upon the facts he has discovered as to the origin of Mount Tabor and Portland as a whole. "During a time of land depression gravels and sands accumulated around the base of this volcano, rose to the level of its rim, filled the hollow of its crater and finally buried its topmost points beneath we know not how many feet of the same water borne sediments."

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Busy as she must have been in the management of all these wonders, nature must have foreseen these modern days of pavements and skyscrapers. Her materials, stored through the ages in provident creation, are substance for our highways and the broad walls of our office buildings.

Under it all, somewhere, are buried the bones — some of them burned to ash in the boiling lava of Mount Tabor—of the mastodon, the dinosaur or their local contemporaries.

The form of the species of animal life that existed here is not known. Excavations have either missed the signs of animal life or have not been deep enough.

Yet in a comparatively modern age—modern in the sense of eons, again—the great redwoods, now centuries old in California, attained great dimensions in Oregon's dooryard. Cuts into the Cascades have revealed the remains of the redwood forests of old Oregon as well as many other forms of plant life that flourished here in those days that saw the world in the making in the Creator's workshops

EXCAVATION WHERE LAVA FLOW FROM MOUNT TABOR IS CLEARLY SHOWN IN INCLINED LAYERS

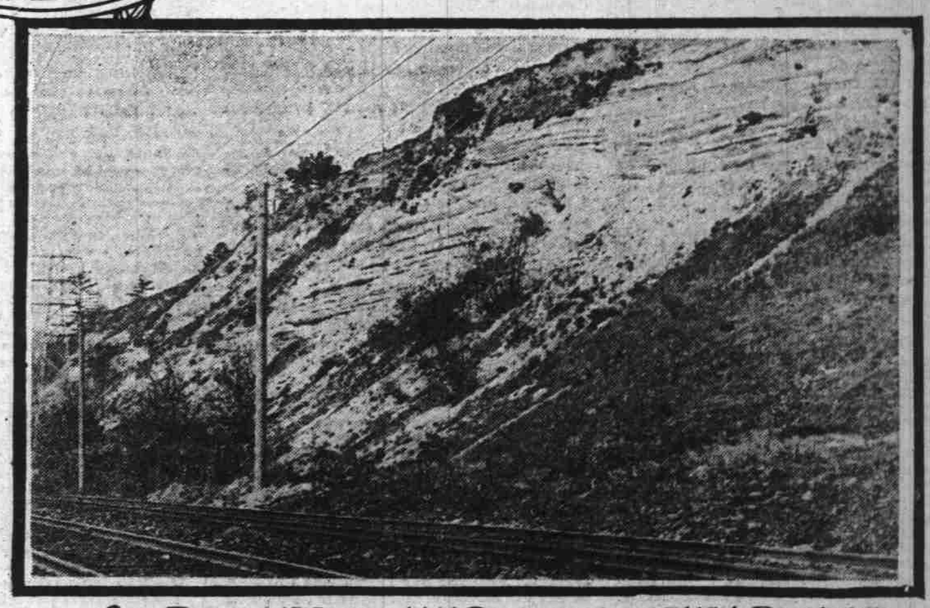
MOUNT TABOR, SITE OF ONCE ACTIVE VOLCANO WITH ROCKY BUTTE, A VOLCANIC CREATION IN THE DISTANCE

PHOTO FROM THE AERO. WASH.-IDAHO AIRPLANE CO.

PHOTOS BY ROY NORR, JOURNAL STAFF PHOTOGR.

IRA A. WILLIAMS GEOLOGIST, STATE BUREAU OF MINES.

HUGE LAVA BOULDER, SHOT FROM THE CRATER OF MOUNT TABOR.



OLD BANK OF WILLAMETTE RIVER IN SOUTHEAST PORTLAND SHOWING LAYERS OF CITY'S FOUNDATION.