

# GEOLOGICAL FORMATION OF NOTED MOUNT HOOD IS DESCRIBED

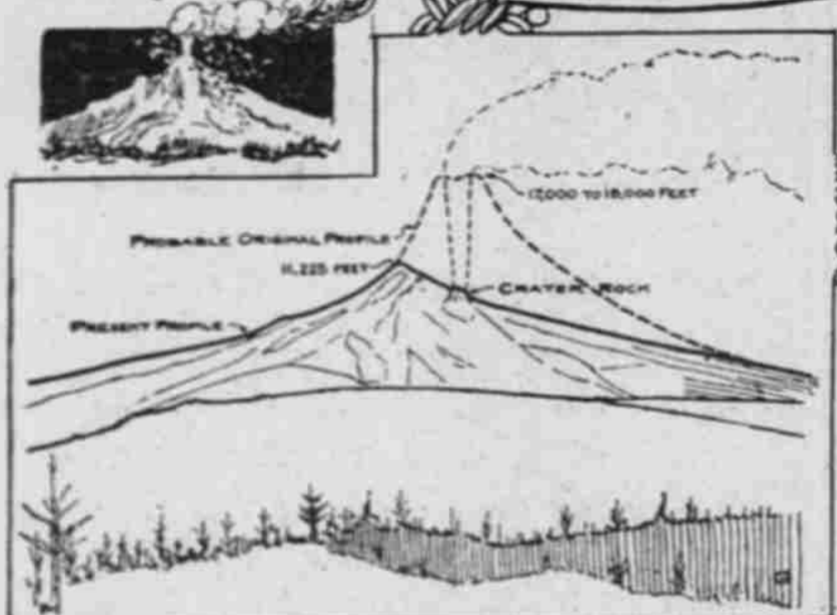
## Period From Water to Glacier and Ultimate Use of Ash Given Off by Volcanoes as Richest of Soil—Story of State's Physical Development Is Traced.

Note: The following was written originally by the late Dr. J. W. Galloway, and does not represent the views of the Oregonian. It is a reproduction of the original article published in the Oregonian, Nov. 15, 1915, with the exception of the Rocky Mountains, whose baby ridges were separating the oceans for the first time, and two tiny islands, which, if there had been geologists, would have been named Skippy and Bliss.

**BY RICHARD J. GRACE**  
ONE sunny morning about 10,000,000 years ago, or maybe it was 20,000,000, geologists may not being very exact as to number or extent, a fish was lily tanning its fins in the warm shallow water that covered a salt bank in the vast ocean that then covered the United States. The fish was a cephalopod, and he and his fellows were the ultimate grandfathers of a nation. One day he became aware of a gentle current, which gradually quickened until he was compelled to use his utmost efforts to swim against it. Suddenly there was a shock, an increase of light, a draught of burning air through his gills and the instant Mr. Cephalopod found himself high on a bank of silt. Frantically and in pain, he flapped after the receding water and plunged into its cooling depths. From this time on he had the same experience, and he was finally trapped in a shallow pool and landlocked.



Modern View of Mt. Hood With the Valley Below.



View of Mt. Hood from Larch Mountain Showing Present Profile and Probable Original Profile.

**Mountain Ranges Rise.**  
One day a rift from Lower California to Alaska. Another rift called the Okanogan on the north, together with one on the south towards Utah, forming a great basin, extended from the Canadian to the Rockies and to the Okanogan country to the Utah line. This great dike was the ancestor of the Sierra and Cascade ranges. A smaller and almost parallel dike, which ran soon after on the west, formed the Coast Range. Thus the forces forming the mountains were formed, being given by continuing recent volcanic activity.

**Chimney Is Formed.**  
The heavy material which fell back around the orifice formed a circular mound which rose higher and higher above the surface. The loose fragments were partly cemented together by lava flows. This mound grew so rapidly that shortly the orifice became a chimney, lined with lava and surrounded by a mass of cinders, slivers, mud and lava. The chimney extended upward the pressure of the liquid lava inside caused numerous side craters and leaks to form. These craters, in the same manner as a mixture of cement and sand forced into tubes. Thus, while the base, for about two-thirds the height, was composed of lava, the upper portion was a mixture of ash, mud, rocks and pumice piled up at the angle of repose and held in place by their weight and a few interspersed sheets of thin lava and probably an outside blanket of the same material.

**Lava Flows Frequent.**  
This is the process that formed the flow of Mt. Hood, Rainier, St. Helens, Adams and Mazama (Crater Lake) and hundreds of others, and as we shall see later, was also responsible for their partial or almost total destruction. Mount Hood at the height of its activity and development, had a cinder cone that reached into the air for the extent of 17,000 to 18,000 feet. By taking the slope of the cinder cones of recent volcanoes, like Manna Loa, and allowing for glacial erosion on slopes, the approximate original profile has been constructed as shown in the drawing.

**Lateral Reach Columbia.**  
When the Columbia river through the Cascade dike into the Willamette Valley Sea and the Eastern Oregon Sea were lowered to such an extent that all this filling was above sea level and became a great river, a flow of lava and ash cooled enough to be solid when another fiery plastic sheet would appear covering all in sight and as it slid over the shore the waters disappeared in clouds of hissing steam accompanied by explosions which rent the lava and started it on the long downward course of disintegration into washes, gravel, sand and clay.

**Water Follows Glacier.**  
This condition was maintained through another cycle and then water, free and unobscured began to flow from the glaciers. Ominous rumblings and reports were heard and as the glaciers slowly and ponderously moved down the mountain side, grinding and scouring the earth as they moved. The pressure involved was almost beyond comprehension. At a depth of three miles the pressure was slightly more than nine tons to the square inch or 2,112,000 pounds to the square foot.

**Atmospheric Pressure Reduced.**  
The atmospheric pressure was now reduced and the temperatures became normal, according to the human viewpoint, and the vegetable and animal life, with which we are familiar, appeared. The red man now entered, at least we suppose he was red when he appeared, and after being preyed upon by the animals for a time, turned the tables and preyed upon the white man then came on the scene and preyed on both.

**Hood's Deeds Insignificant.**  
This peevish effort rather exhausting the gallant seaman, he suffered a strong reaction and promptly named the mountain Hood, after his chubby and horn-bepectacled patron, Rear-Admiral Samuel Hood, Hood attained a little fame in some naval battles in the French and American wars, but his name has been amply preserved by the action of the grateful Lieutenant Broughton. The first human beings to reach the summit of Mount Hood set foot on the peak August 4, 1824. They were led by William Barlow, the son of Captain Samuel Barlow, the builder of the em-

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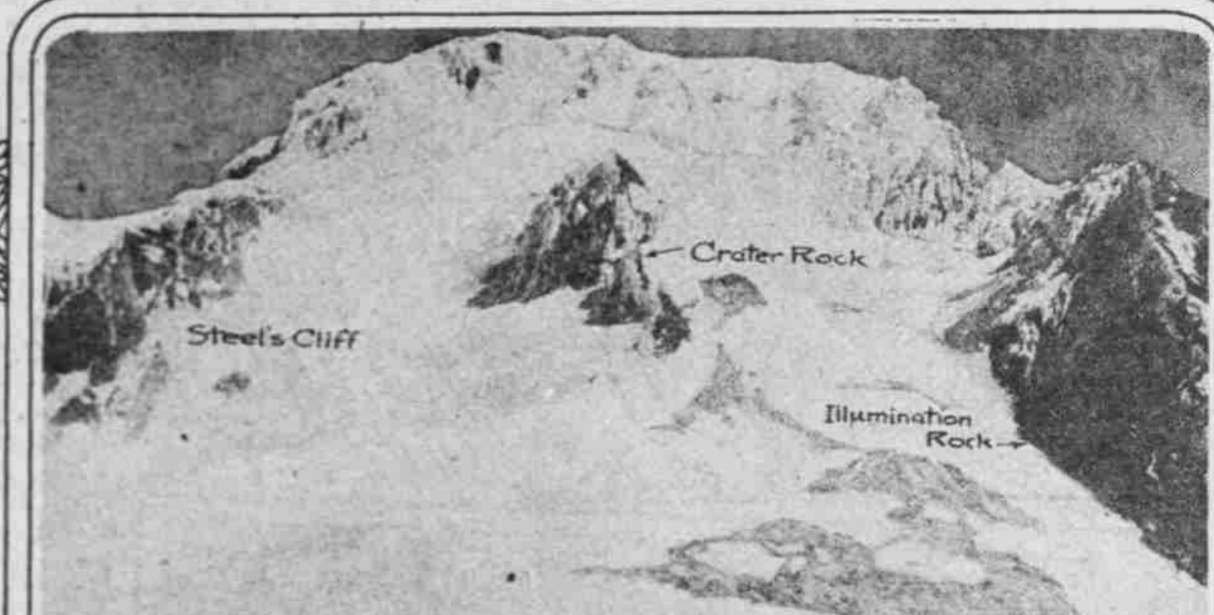
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Condition in Glacial and Lava Age.



Crater of Mount Hood, from South Side

17,000 to 18,000-foot cinder cone had disappeared. Massive glacial ice had formed over it and with the movement due to the increase of temperature it had broken and ground away our mountain to an elevation of 11,225 feet. A plug of hard cooled lava in the bottom of the chimney remained and is now properly called Crater Rock. The present summit of the mountain is a half-mile-long section of the hard base of the cone and is flanked on either side by Steel's Cliff and Illumination Rock, both isolated fragments of the same cone base. The south portion has been completely destroyed and spread out over the long slope on that side. The beautiful cinder cone, as symmetrical as St. Helens and much larger, was spread by the glaciers over all the valleys of the region and its enormous weight with little damage, while the tremendous cone of Mount Mazama was destroyed and ground down to a level plane and today holds its enormous cool crater, the turquoise waters of Crater Lake.

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grant road. The members of this party, on their return, either from memories of the climb or the use of some pioneer instruments, proudly proclaimed the height of the mountain as 18,361 feet (an error of nearly 60 per cent) and seemed quite insistent about that one foot.

Mount Hood, now quiet for all time, rests peacefully above our city, contributing a scene of splendid changing beauty, and even yet giving new soil and water to our Oregon lands.

Shattered ground and battered out of its original symmetrical beauty, its rugged grandeur is far more appealing than St. Helens' truncated cone and it is the one mountain name that comes to our lips and memory when we are away from home and Portland is in our thoughts.

### CITY MAY PRODUCE EGGS

Cleveland Has Proposal to Put in Own Chicken Farm.

CLEVELAND, Ohio, Nov. 12.—The city government's egg bill is \$10,000 a year. Welfare department reports showing that it cost just \$9588 in 1914 to supply eggs for the meals of inmates and attendants of the various city farm institutions and the City Hospital will be used as an argument for the immediate establishment of a large poultry farm, when Council committees meet to prepare the appropriation ordinance for the coming year.

It will cost \$2000 to establish a poultry farm. The site at Warrensville has been selected. It will be large enough to supply the needs of Hudson farm population, and will include the attendants of the other institutions.

### WHITE CROW IS KILLED

Hunter Vindicates Author Who Reported Seeing Bird.

HARBOR SPRINGS, Mich., Nov. 18.—Frank Bradfield, a local hunter, killed a white crow north of this village recently. The bird, which is being mounted by a Potosi taxidermist, is said to be a new variety and the tips of its wings and is considered a rare freak of nature.

John C. Wright, the Harbor Springs author, says it is the same crow as reported by him several weeks ago, at which time he was disappointed by the state press as a "nature faker."

### LUST FOR GOLD IS DECIED

Whole inner life is blinded and distorted by the glitter of gold.

Every generation has its way, reproduces the temptation when came to Jesus. We of today are taken up on a high mountain by the tempter of man, and over the hills and valleys of our show the splendor of material achievements in the development of great resources; there is described for us in the most fervid terms the wealth that has been made, and we are told that we devoted their all and themselves to that pursuit; the eager laudation of the lives and characters of the rich by their contemporaries are only too apparent; our spirits are fired by the growing cities and the even-widening circles of mammoth industries, by the marvellous feats of engineering that the apparent triumph of man's power over the powers of mother nature, the far-flung lines of commerce, the great steamships hurrying to minister to the needs of man, the schools which train men in success with all of this which unfolds itself before us, we are told to him: You will admit that it is a wonderful sight and alluring. And the lord of the far country thunders, "All this will I give thee if thou wilt fall down and worship me."

Happy is the man whose mountain of temptation becomes the mount of true vision. He sees the world for what it is, and is thankful for the progress of material things and proud of the many achievements of the generation of his contemporaries. When he comes to himself he will see how wrong the perspective of life is that reduces the position of man in importance below the passion of gold and covetousness, and not allowed to be lost in the pursuit of that which proves itself to be temporal with every death.

The wisdom of the prodigal in his exile was manifested when he said, "I will arise and go to my father." And when we come to our senses we shall realize the power of a prudent method. Then the world and its tinsel will be where it belongs, at the feet of man, his tool and not his master. We shall then see with new vision that this generation needs new powers so to visualize life and its problems that those true eternal realities of love of God and love of man are not allowed to be lost in the pursuit of that which proves itself to be temporal with every death.

Once, staggering, blind with folly, on the brink of hell, Above the smoking fire-hood's awful roar, God drew this heart before my feet; and that I might be saved, I into heaven fell.

## PROTECTION IDEA BASED ON SURVIVAL OF BEST

Belief Expressed That America's Duty to Itself is to Establish Tariff Which Will Benefit All, Not Few—All Thought Coming Into Accord.

**BY H. B. MILLER**  
IN FURTHERING this sociological theory of protection, it should be understood, distinctly and unambiguously, that neither the ideas nor the remarks herein expressed have any political bias or significance. They are solely and only an expression from the economic and sociological standpoint. This distinction should be kept in mind in considering each and everything said.

No one can be a good citizen of this country, or of any other country, unless he understands the laws that govern it and takes an active interest in the question of tariffs by the Government.

This whole question has been the foothold of almost all political parties for many years. It should be so no longer. It is time that it should cease being a party feature of the economic life of this Government. One of the influences to bring about this much-desired reform is that in the future the tariff will not be so much of a purely political problem as it has been in the past, because now there is not the same wide difference between the ideas of the two parties on this subject.

where only the strongest will or can continue to exist. On the other hand, the policy of protection to home industries and home commerce is essentially the same as that which has been the same way as the law of the protection of the best in man's adaptation of himself to the struggle with the unprincipled and indifferer law of nature.

**Abuses Not Condoned.**  
The whole scheme of tariffs and tariff legislation has been conceived and operated by the people who have controlled the Government for the special interests and welfare of their particular group or part of the community. This lack of understanding of the underlying fundamentals is one reason why the discussion of the whole question has become most tedious and unpopular.

The mistaken idea and the mistakes of application have been due to certain men in the country who have dominated legislation for their selfish interests alone. Men have controlled members of Congress and have sent them to Washington for the sole purpose, as a matter of fact, to protect their large manufacturing interests; men who have desired, and who in large measure have seen to it that this desire was gratified, to have their particular product, and their only, protected by the law of the land. One of the difficulties, brought about by this situation, is that the law has protected them in the manufacture and sale of their product, giving them large and unwarranted returns, but has not been extended to the protection of the men they employ in the work of production.

**Labor Not Protected.**  
The law of protection as it has been established and operated has not protected the function which any law supposedly made by and for all of the people ought to perform. It simply has added to the profit of the manufacturer without adding correspondingly to the common welfare of the people who equally and directly are responsible in the production of the goods themselves. This is one of the reasons, if not the chief reason, why the law has failed in its true purpose. This is the reason why the great masses of the people have been against the protection as they have come to know it.

## INTERESTED READERS ASK ABOUT MUSHROOMS

Professor Sweetser Replies to Queries and Describes Dangerous Fungi. Hunters Advised to Stick to Recognized Safe Varieties.

**UNIVERSITY OF OREGON, Eugene, Nov. 20.**—(Special.)—Whether washing poisonous mushrooms in a solution of salt and water for five or 10 minutes before frying will drive away the poisonous water is an inquiry from a Portlander, who has been reading the toadstool series in The Oregonian by A. R. Sweetser, professor of botany in the State University.

"Is it correct that in mushrooms which are poisonous the water contained by these mushrooms only is poisonous and the pulp not?" was another of his inquiries. "It is also contended that after washing in a salt and vinegar solution the grilling or roasting of the mushrooms until they are perfectly dry and therefore free from their original moisture will make safe even mushrooms that were originally poisonous. Do you think this is true?" he asks. These are specimens of the queries received by Professor Sweetser that indicate a widespread interest in Oregon mushrooms and toadstools as a food. Professor Sweetser replied as follows to the questions quoted:

"Toadstool poison is of two sorts. One is a simple irritant that makes itself known at once and produces vomiting. This is not necessarily fatal. The other kind belongs to the deadly alkaloid and is found especially in the amanitas. In a dry toadstool the poison is a scurfin, for which atropia seems an antidote. In A. Phalloides the poison is phalloin, for which no certain antidote has been found. This latter toadstool is especially dangerous, for it is white and attractive, and has no better than the Nation never had been born. If, on the other hand, we as a people are to realize those high ambitions held by us and for us, the law must establish and function solely according to the higher law of the protection of the best.

## SENSITIVE CABBY FINED

Court Imposes Penalty for Beating Patron Calling Hack 'Noah's Ark.'

**PHILADELPHIA, Nov. 12.**—It cost James A. Ryan \$25 to uphold the dignity of the cab which he drives. Judge Knowles, in the Municipal Court, imposed a fine of that amount as punishment for the beating Ryan inflicted upon Charles P. Milligan when the latter referred to the conveyance as a relic of Noah's ark.

Milligan, who is an undertaker, had solicited the services of Ryan's cab for a funeral which he had in charge, but when the vehicle appeared he jeered at its appearance. Ryan resented the criticism so vigorously that the undertaker caused his arrest for assault.

## 14-YEAR-OLD CHECK PAID

Owner Declares He Had Never Needed the Money.

**MILTON, Del., Nov. 16.**—After carrying a check for 14 years G. G. Torbert finally cashed it. Torbert explained the delay by saying he had never needed the money and was in no hurry to get it.

## W. C. T. U. Closes Saloons

Rhinelanders, Wis., Nov. 8.—Twenty-eight saloon proprietors observed the Sunday closing law recently for the first time in years. The proprietors acted in response to an order of Mayor Fred Anderle. Members of the W. C. T. U. submitted a petition bearing 600 signatures to the Mayor, asking that he lend his assistance in wiping out the Sunday saloon. The society threatened wholesale prosecutions in the event that he failed to act.