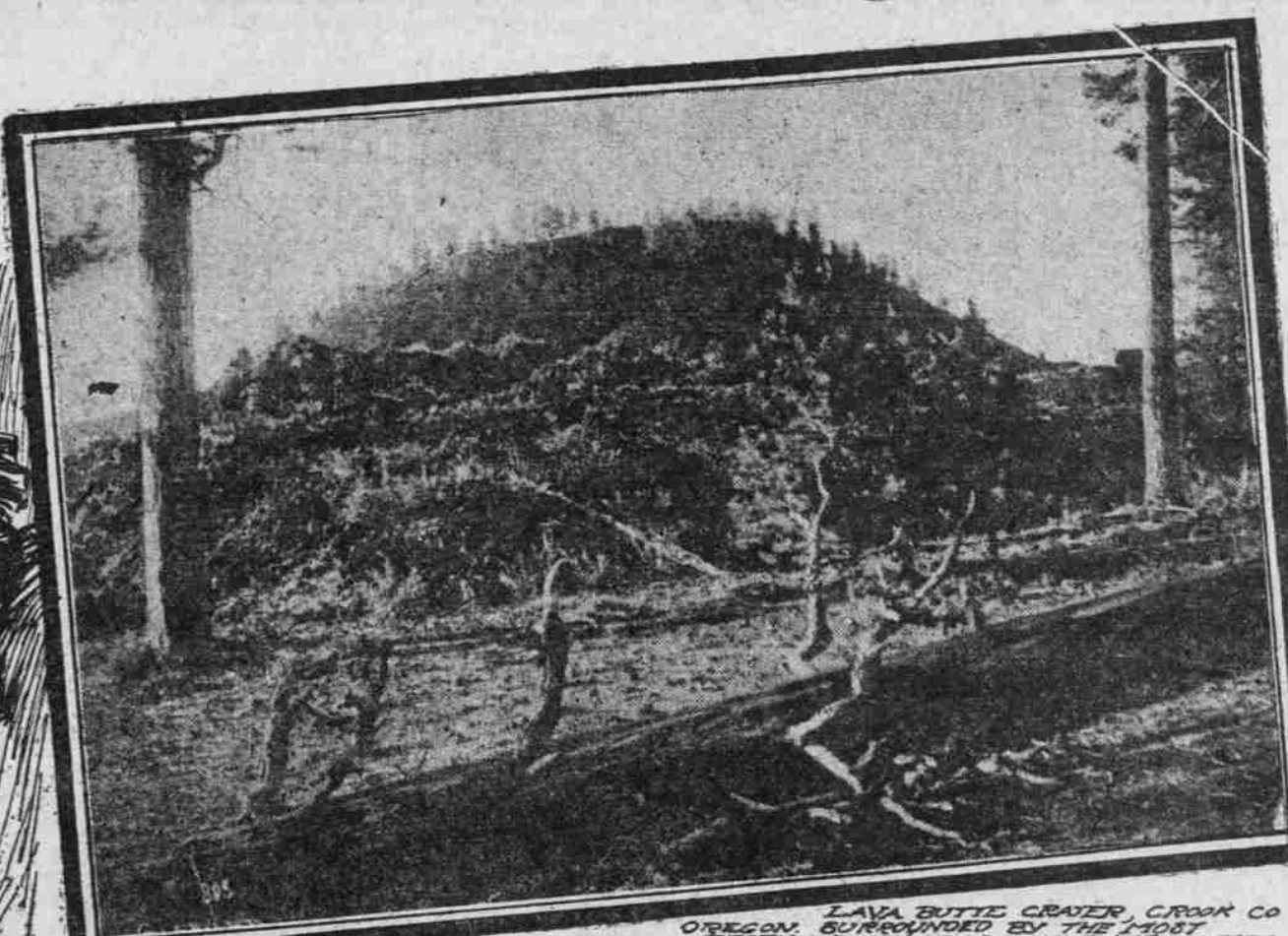


WEIRD VOLCANIC CAVES OF CENTRAL OREGON

Startling Formations Which Baffle Scientists to Explain:
One Ice Cave a Source of Commercial Revenue



LAVA BUTTE CRATER, CROOK CO
OREGON, SURROUNDED BY THE MOST
RECENT LAVA FLOW IN THE NORTHWEST



HAULING IN FROM ICE CAVE



INTERIOR VIEW OF ICE CAVE, CROOK CO., OREGON

BY RANDALL R. HOWARD
NATURE had so many resources and wonders left when she made Oregon and the Pacific Northwest that she was compelled for want of space to arrange them in tiers and put some of them beneath the surface. It was not enough that she had placed dizzy mountain peaks above our heads and forests and lakes about, but she also left weird caves and dungeons beneath our feet. This underground world of weirdness, only slightly explored as yet, centers in the great arid volcanic plains of Central Oregon.

It is a new region, a hundred miles or more from the railroad, and has seen little of man's commercial intrusion as yet. Yet interesting strange things have already happened in this strange land. For example, a man was digging a well on his desert ranch and had got down encouragingly deep when without warning the bottom dropped out of the well. His tools may still be clanging down toward the center of the earth for all the well-digger knows, for he put all of his wits and strength into signalling those above to draw him and his tub to the surface and he hasn't gone down into the hole since—nor has anybody else.

Another case: A lone cowboy was making a hard ride across the 40-mile desert from Bear Creek Butte to the Deschutes River. It was late in the afternoon of a hot day, and the horseman was miles from his next watering place, he having been drawn aside in curiosity following a stray horse track. His water flask had been emptied hours before, and his horse had tasted no water since two hours before daybreak. Without warning the horse suddenly quickened his pace and slightly changed his direction. The cowboy knew the sign; the horse had smelled water, but there could be no water—they were still 10 miles from the Deschutes. But he humored the horse and allowed him to canter down a little hollow. The horse stopped in front of a rock pile. The cowboy dismounted and was surprised to have his hat blown from his head. Closer examination proved that he had found an "air-hole," and placing his ear to the hole he could hear water boiling and gurgling far below—but far, far beyond reach.

The brigatonsists in this region, where are being developed some of the largest reclamation schemes of the Northwest, also have their troubles with the weird underground world. Peepholes to the cave-world are often uncovered and the artificial rivers of water so dashing into blackness never to return. The constructionist may be prompted to see if he can't "draw the hole out," but morning and the next week still finds the water rushing into black eternity. Brush and sacks of sand, a wooden flume, or a detour are the only remedy.

Not to be outdone by man, the horses and cattle and wild beasts of the desert have made use of the Central Oregon caves. About six miles east of Bend, Crook County, is what is called Horse Cave. Worn trails lead from every direction for miles to this spot. These trails converge suddenly in what appears to be the big yawning mouth of some buried monster. A horseman may ride down the gentle slope and beneath the 50-foot wide arch into the rooky cave passage, which has the peculiar property of being cooler in the summer and warmer in the winter than the surrounding

plains. Following the passageway back a hundred yards one comes to a turn, beyond which there is a natural "skylight." It is possible to ride your horse back as far into the blackness as curiosity or courage may permit. Possibly some big-eyed cow-brutes will be preceding you all of this time or you may be surprised by a band of wild horses dashing past you towards the opening.

The stockmen of Central Oregon have also found use for the caves, for there are several well-known ones far out in the desert that have, with the use of a few rocks and some brush, been made into the best of corrals. These caves are often made the camping places in the long drives with the best cattle or the droves of horses.

Travelers along the road also know the practical value of these caves, since there are many of them that not only afford the sheltered place but are veritable oases of the desert in that they furnish water, snow or ice to the one who knows where to look. There is such a cave about 10 miles south from Bend on the main road. The road crosses a great cave-crack in the earth and only a short distance away, by climbing down the worn trunk of a tree, the traveler will soon find a temperature cool enough to preserve the snow and ice of the winter until late in the summer.

The most notable of these caves, however, is a mysterious spot in the dry desert about 30 miles from Bend. Here is one of the most wonderful farms in the world, since the tract has been home-steaded by a man with a love for the

novel and a good business eye. The man does not farm grains nor hay nor garden, no, nothing but ice. And he gets more than one crop a season. He can grow a new crop over night, and even in a few hours if trade is pushing. Best of all he does not need to do any planting—nature has attended to all of that. All he has to do is to saw ice, saw ice. This famous ice cave is 15 miles from the nearest known water and has an elevation of more than 4000 feet. One passes a little fringe of pines and comes suddenly to the cave opening. After scrambling down a rough passage he reaches a floor of smooth ice, 15 feet or more across. A little further on there is another ice-bin, equally large. It is said that in an early day the stockmen used to dig out the ice in large pieces and hoist it up a rough incline to supply the watering troughs that had been constructed.

With the building up of the town of Bend, in the center of one of the largest irrigation districts in the Northwest, the ice took a new value, and Ice Cave was considered a valuable enough "find" to be homesteaded. Since that time many tons of the product of Ice Farm have been hauled to the Deschutes metropolis to be put to commercial use. The interesting and unexplained feature about Ice Cave is that the ice "grows back" as fast as it is cut. This in the face of the fact that there is no water about Ice Cave. The reformation of the ice floor after wagon loads have been cut out, is seemingly due to the pressure from below, and to some strange chemical processes that nature is still holding secret. Some

of the geological and chemical wiseacres would say that the water passes through a mineral deposit and on coming into contact with the air is transformed into ice. This theory has been called "shady," in that the formation of the country is volcanic and mineral deposits are hardly within the probable. Another theorist tells us that the ice is formed as the result of a cold blast of damp air from an underground glacier coming into contact with the surface air. The vapor, he says, is congealed into water by the warmer surface air and then frozen into ice by the cold blast. However that may be, Ice Cave is a commercial and actual reality, and on the coming of the promised railroad to this section Ice Farm will be worth a nice little fortune to the homesteader.

But there is evidence that the weird caves of Central Oregon had their value and their use even before the days of the horses and cattle of the desert, or the stockman or the traveler or the ice peddler. There is a big cave in Milheur County, about 40 miles southwest of Burns, which evidently was used in a prehistoric day as an armory and a place of refuge for the red-skinned first-native of the Northwest. Near the entrance to the cave and scattered over a large area are bushes and bushes of finished and half-finished and chipped arrowheads for the battle and the chase. Inside of the first narrow passageway is a lighted cavern large enough to house 5000 dusky skins, which cavern could be defended at the narrow pass by a handful. And if there were not enough room here, through another narrow doorway is still a larger arched cavern and a lake of water.

One of the most interesting caves of the cave district of Central Oregon is what has been called Dillman Cave, in honor of the discoverer. About 20 years ago Dillman was hunting in the vicinity of Lava Butte, about 10 miles south of Bend and only a few miles from the Deschutes River, when he happened onto the cave which bears his name. The spot of the opening is truly a "cave-in," and but for the fact that a part of the roof has dropped, Dillman Cave would still be among the untrod underground weirdnesses of Central Oregon. It may be mentioned, however, that travelers have often detected the point where the road passes over the cave by the hollow rumbling sound made on driving across it. From the dropped-in portion of the cave the traveler may go either way. The passage leading toward the volcanic mountain, Lava Butte, which is intimately associated with the origin of the cave, is much the easier to traverse. After scrambling over immense lava rocks, some of them as large as a suburban home, and all of which have fallen from the roof of the cavern in the cave-in, one is soon in a 100-foot wide cavern with a vaulted roof. Daylight has already begun to twinkle in the rear, and it is time to light the pitch torches with which the explorers provide themselves. The atmosphere is now cool enough to make vigorous walking enjoyable, and you are perhaps a hundred feet beneath the surface of the ground.

The most interesting surprise to the average cave-explorer is the fact that Dillman Cave is different from all the rest of the caves that he has ever seen. Whereas most caves bear evidence, that cannot be doubted, that they were formed by water, and are really only a deserted underground water channel, Dillman Cave has none of these marks. The careless

observer may be fooled at this point, however, for he sees at some places great sand-mounds and there are a few clay banks that the dripping water from the roof has carved into great tunnels and cones and miniature Bad Lands. These deposits could be easily washed in through the roof and from the openings during the Spring thaws and the water-spouts, and form no part of the explanation of the cave wonders of Central Oregon. Excepting where obstructed by the washed-in sands and the rocks fallen from the roof, the floor of the typical Central Oregon volcanic cave is as smooth as pavement. And the pavement would be the envy of the city-builder, for it is of solid lava, and evidently smoothed over while in the molten state. The walls and the ceiling have the same appearance, fashioned and smoothed while white-hot. From some parts of the usually vaulted ceiling and the sloping sides long pencil-like papilla of lava hang down ready to be nipped by the eager explorers after the caves of Central Oregon have been commercialized. In other places the walls have been gaily decorated, the rocks having been fashioned into many mingled beautiful and grotesque figures before having cooled. The color scheme of these nymph-halls varies from the monotonous dull black of lava to the bright-hued tinges of the red-hot and the white-hot furnace.

Everything and everywhere points to a period of intense heat, to a terrible consuming inner fire, to an earth tragedy. All and every form of life has been blotted out, no plants are seen, the blind bats and beetles of the average cave are not to be found. Stillness, darkness and death are everywhere.

The exploration party may follow the west cavern of Dillman Cave for two

miles, through wide-vaulted sepulchral chambers, through the occasional narrow passage and the Fat Man's Misery, past Port Sand, Echo Valley, Honeycomb Hill, Devil's Playground, etc. At favored spots the holes in the lava floor are filled with pure, cold water, and water is seen hanging in big drops from the ceiling or may be heard as it falls with a hollow splash into the worn groove in the sand or clay. At the end of the two miles, the roof of the cave gradually lowers and one notices that he is walking on a deep sand floor. The roof and the washed-in floor meet a little further on, leaving one with a sense of incompleteness, and with nothing to do but to retrace his steps. At this point the several scores of visitors who have made the pilgrimage have registered their names on a page of a cheap writing tablet that is being preserved in a Mason fruit jar. There is a litter of pitch torch stubs and the roof is blackened with pitch smoke.

Into the cavern leading in the other direction from the "cave-in" tourists rarely go, due to the roughness of the ground. It is said that this end of the cave has never been explored, and for aught that is known may reach for miles and miles under the pine forests into the desert. Indeed this end of the cave is viewed superstitiously by some, and there are persons in the neighborhood who could not be induced to enter it under any pretense. Dillman's Cave is a popular spot in this part of Central Oregon during the hot days, and Sundays and the holidays often find it the scene of picnicking. The cave is but a few miles from the main road that leads from Bend to Big Meadows and can be easily reached through the open woods with any sort of a vehicle.

It is not hard to relate this cave, and the whole system of caves in this section, with the dark lava flow which is seen near, and the symmetrical little crater called Lava Butte, towards which Dillman Cave points. By going around to the wooded side of the crater, and away from the loose shell rock which nothing but the mountain sheep of an earlier day ever ascended, one can easily climb to the top of the mound, which rises half a thousand feet above the surrounding country. The opening to the crater is filled with fallen-in lava, and small pine trees have taken root in the sunken cone. Looking in three different directions one may see the desolation for which the crater is responsible. Long black streaks of super-rough lava reach away for miles. At a different angle there is a large area of this dark jagged desolation winnowed in great furrows, fresh plowed, with no vegetation or life on its surface save for an isolated stunted tree here and there. Still in another direction is a great earth-crack leading in a rough line away from the crater. At some points the crack is almost filled with earth and rocks which have weathered loose and fallen back, while in other places its sharp edges are sheltering sapling aspens. The wagon road, crossing this crevasse near Lava Butte, and this has become a favorite camping spot, for not far to one side is a well-known little ice-cave where one may follow down an old log and dip up snow and water and cut ice till late Summer. The crack extends far into the desert, partly obliterated at some points, and at others a favorite lair for the coyote and the wildcat.

The cave-crack is a straw for geological inquisitiveness to grasp at, and suggests a theory. The geologist would have it that Lava Butte, with its wide mouth, is sitting on a point of this earth crevasse which was especially deep, reaching down, miles and miles, to the very molten regions of the interior earth. From this bottomless incision there burst forth, on that fateful day, great columns of internal fire, and clouds of pent-up steam, carrying a conglomerate of ashes, glittering red sand, thin lava, white-hot, and great whizzing stones. The ashes shot up thousands of feet to the level of the high winds, spreading, these ashes darkened the sun, and fell, some of them, hundreds of miles away. The sand was sifted over the surrounding miles of country to form the present soil, a part falling back to help build the crater. Some of the great boulders, torn from the sides of the crevasse, and some of the molten lava were hurled, shrieking and glaring, in great fiery circles, to fall crashing, burning and exploding to the earth. Some of the lava and the boulders fell back into the crevasse, to become fire fighting fire and to be the means of finally checking the eruption. The most of the white-hot liquid rock formed a shooting geyser that brought the surrounding desolation.

The caves of Central Oregon are the by-product of this shooting lava flow, merely little incidents in these terrible transforming days. The first step toward a lava cave was when a great stream of molten rock, obeying the law of gravity, seeking the lowest possible level, and impelled from behind by the steady glowing stream from the crater, flowed out across the country. It may have had a Johnstown velocity at first, as in the terrifying Pompeii days when such a stream flowed nearly four miles in four minutes. More likely the advance was sullenly slow, since the liquid rock, exposed, soon cools to the consistency of honey. The top layer of the moving dike, like lava, may have several scores of feet deep and half a mile wide, exposed to the air soon becomes hard and crusted, even while the center is still molten. The top crust thickens and the bottom crust, cooled by the earth and mingled with surface waste, forms. The center of the stream is still liquid, for lava is a very poor conductor of heat. It is told that in a similar lava flow it was possible to light a cigar after 25 years, and that another such dike was still steaming 87 years after it had flowed from the crater.

The lava cave, then, is really nothing more than a huge lava shell or covered channel out of which the still liquid interior has flowed on. Hence such caves may be expected at any point where there has ever been a lava flow, and geologists tell us that about 20,000 square miles of the eastern Columbia River basin is of such a formation. The lava fields that may be seen on the surface are of comparatively late date, since they have not yet had time to crumble into soil as a result of the weathering effect of water, light and changing temperature. In time their desolation will be overgrown again with forests and smaller vegetation and hidden as are the earlier flows.

Hence it is that the Central Oregon region, and especially that section near Bend, is filled with caves. Many caves have already been discovered, and new "world marvels" are uncovered almost every week. It is interesting also to note that the Deschutes River, that drains and is reclaiming a vast area in Central Oregon, has also found and is using these weird underground passages. At one point where this large stream crosses a lava flow it loses nearly a fifth of its water. These cave passages also carry away all the flow of the stream above the Deschutes River. For this reason the upper Deschutes is made one of the most wonderful streams in the world, since its volume of water never varies much. At one point where between the Summer flow and the Spring freshet flow, it seems that the excessive water is drained into these underground caves and is carried either to the Columbia River or at least far down the stream before being released. This fact explains the finding of sunken water passages far out in the desert, and may bear some relation to the mysterious ice caves of the Central Oregon region.