

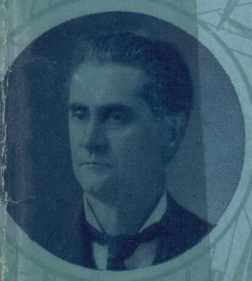
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No. 2

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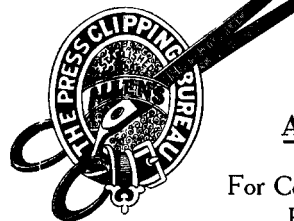
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Klamath County.

Klamath County, Oregon, is on the California state line and just east of the Cascade range of mountains. It has a population of about 7,000.

Klamath Falls, located at the mouth of Link River, on the beautiful little Lake Ewauna, is the county seat. It is near Upper Klamath Lake, is backed by the foothills and mountains, and the lake and valley spread away in front, affording a magnificent panorama that is destined to become famous. It has a population of 2,500, possesses a new \$30,000 high school building and a \$20,000 stone building for graded schools. It has churches, banks, saw mills, planing mills, sash and door factories, etc., and stores that would do credit to any progressive town. Water, soft and clear as crystal, is supplied from great springs near at hand. Electric lights and telephones are supplied at reasonable rates. Beautiful and picturesque valleys open into the one in which the city is located, all of which are surrounded by mountains, which, in turn, are covered with a heavy growth of yellow pine, fir and cedar.

The Lakes.

Crater Lake is located 50 miles to the north and is reached by a delightful boat ride on Upper Klamath Lake to Fort Klamath, from which point it is only 22 miles distant, the road following Annie Creek Canyon, thus affording one of the most picturesque trips in the country. Complete outfitting for this trip may be done in Klamath Falls to advantage.

Upper Klamath Lake is a beautiful body of water 25 to 30 miles in length, with mountains reaching to the shores in many places. From its lower end Link River descends in a succession of rapids for a mile and a half, falling 65 feet in that distance, and flowing into Lake Ewauna, at the lower part of town. Klamath River begins with Lake Ewauna and skirts the valley and mountains to the south and west, leaving the valley at Keno. A channel from the river, seven miles across the valley to Lower Klamath Lake, connects the two. The lakes are joined in places by tule marshes. These marshes have for centuries been receiving deposits of silt,

carried to them by the waters from the mountains, and have for ages been producing immense crops of tules, gigantic bull-rushes, which grow six to twelve feet high, and so thick that it is almost impossible to get through them. These decaying each year have added vegetable matter to the silt. Besides this, for centuries innumerable water fowl have made their homes in these marshes, thus still further enriching the soil, until there is no better in the world.

United States Reclamation and Irrigation.

The United States Government has undertaken to drain these marsh lands, and to irrigate them, together with the sagebrush lands, the cost of which is estimated to be about \$18.60 per acre, to be paid for in ten annual payments, without interest. A tunnel and the first nine miles of the canal will be completed and water will be ready for the crop of 1907. One person cannot get a water right for more than 160 acres. A husband and wife and each child may own 160 acres and each get a water right to the same, irrespective of the child's age. Non-resident owners of land cannot get a water right. They must reside within the bounds of this system of irrigation. Water for irrigation is sure and very abundant. The Government contract does not restrict farmers as to the amount of water they use, for there is more than enough for all.

Water Power.

The Klamath River, after leaving the valley, falls 1,800 feet in twelve miles. The immense power of all streams in this region has been appropriated by the general government for the irrigating system. The power which can be developed and transmitted all over these valleys by electricity is incalculable.

Railroads.

At present the nearest railroad station is at Pokegama, Oregon, 35 miles distant, on the Klamath Lake railroad. Two other roads, however, are under construction, the Southern Pacific and the McCloud River railroad. All these lines will be finished in the near future.

Parties desiring more information about the Klamath region will be accommodated by addressing Mr. C. F. Stone, secretary Chamber of Commerce, Klamath Falls, Oregon.

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Steel Points is published quarterly, and devoted principally to the wild regions of the Pacific Northwest. The first number, issued in October, 1906, is descriptive of the City of Portland. This one speaks for itself. The third one will appear about March 25, 1907, and will have to do with Mount Hood. Unless otherwise specified, subscriptions will commence with No. 1.

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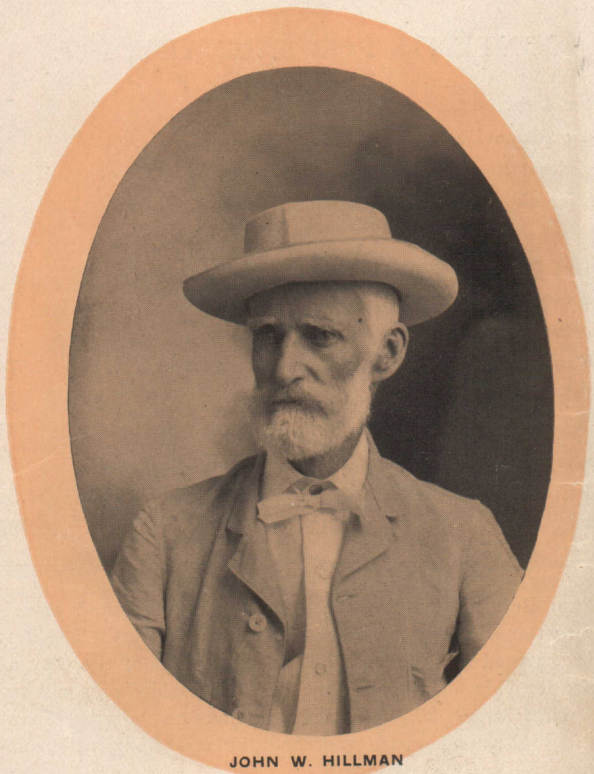
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JOHN W. HILLMAN

STEEL POINTS

Vol. 1

JANUARY 1907

No. 2

CRATER LAKE.

Crater Lake is located on the summit of the Cascade range of mountains in Southern Oregon, three miles from the Jacksonville and Fort Klamath wagon road, from which the government has constructed a road on an easy grade to the rim of the lake. It was discovered on June 12, 1853, by John W. Hillman and a party of prospectors, who named it Deep Blue Lake, although some of the party preferred to call it Mysterious Lake. It was subsequently known as Lake Mystery, Lake Majesty, Hole in the Ground, and finally, on August 4, 1869, a party from Jacksonville named it Crater Lake, the most natural name it could bear.

It rests in the crater of a great mountain, the top of which has disappeared, leaving a cauldron 4,000 feet deep and five and one-half miles in diameter. The lake itself is 1,996 feet deep, and fills the cauldron about half full. Near shore on the westerly side is a circular island, or cinder cone, 845 feet high, known as Wizard Island, in the top of which is an extinct crater 100 feet deep and 500 feet in diameter. Near shore on the easterly side is a jagged rock called the Phantom Ship. These are the only islands in the lake. The water is remarkably clear, a six-inch white plate showing to a depth of 92 feet. When looked upon from the surrounding cliffs its color is of the deepest possible blue, except close to shore, where it blends into a rich turquoise. Seen from a boat, the blue remains as deep as before, but assumes a brighter hue. In the absence of wind, surrounding objects are reflected as in a plate glass mirror.

An Example.

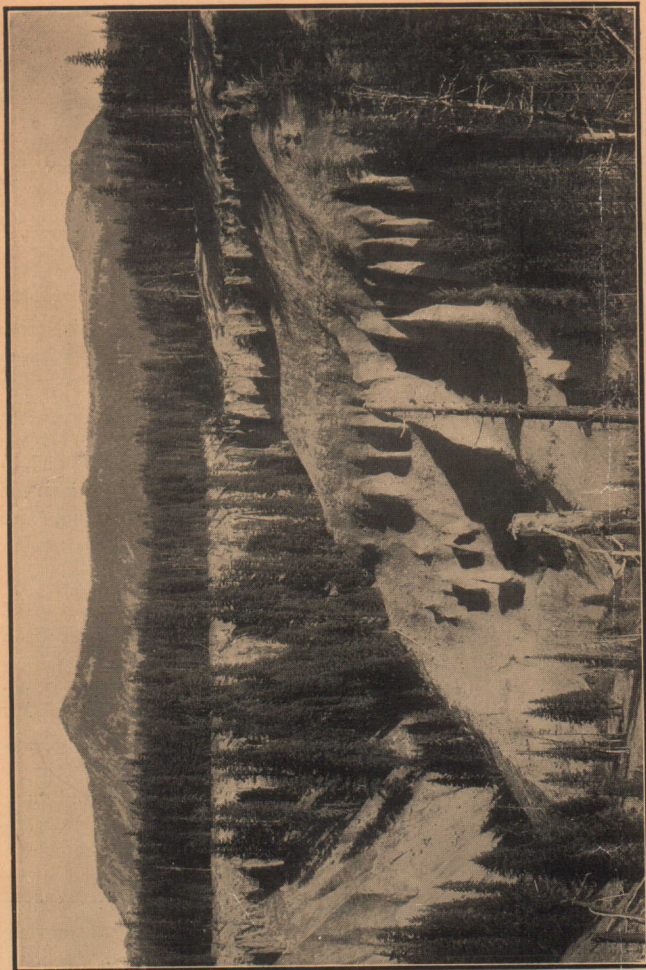
Once I left camp in the night and pulled out upon the lake's placid surface, then sat quietly in my boat and gazed at the heavens above and the heavens below. A full moon glowed above me, and a full moon below. Every star above was equally bright below. A vast ball of a universe was around and about me and I suspended in the center. A great equator hung in space as a monstrous knot hole, and I looked above and below it. Unconsciously I grasped the boat's side with such energy as to ruffle the water, spoil the picture and fix myself upon the earth again.

The shell of a mountain in which Crater Lake rests was not always a shell, but once towered proudly in the heavens as a giant among mountains. It belched forth fire and lava for a time, then settled within itself, and all that portion above timber line, or 8,000 feet elevation, disappeared. Where it went no one knows, but it is estimated by men of science that seventeen cubic miles disappeared, leaving a vast smoking cauldron 4,000 feet deep. The base of this great mountain remains and until August 21, 1896, bore no name. On that date, with appropriate ceremonies, Miss Fay Fuller,* now Mrs. Von Briesen of Staten Island, N. Y., on behalf of the Mazamas, christened it Mount Mazama, which name has been accepted by the government and appears on all official maps.

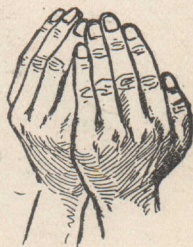
"There Is But ONE Crater Lake."

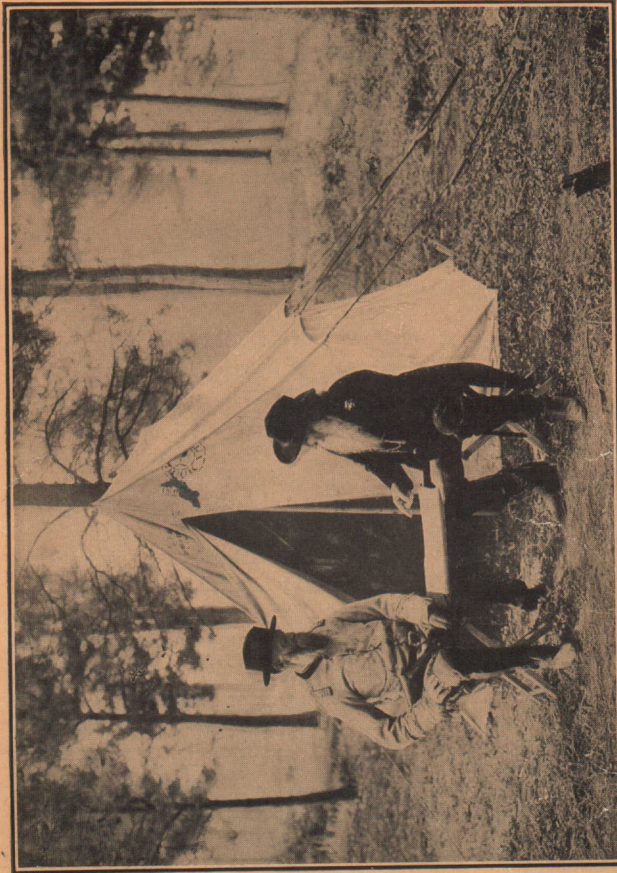
Professor Joseph LeConte was a great admirer of Yellowstone and Yosemite. Many years ago, when standing together on the rim of the lake, I asked him how it compared with them. With deep emotion he replied: "Yellowstone has its glories, and so have the Yosemite and Crater Lake, but their grandeur is not in common. You cannot compare unlike things. There is but ONE Crater Lake." The overpowering impressiveness of its grandeur cannot be described, and no idea of its masterful influence over the

* See page 39



BASE OF MOUNT MAZAMA





POET OF THE SIERRAS AND THE SAGE OF KLAMATH

human mind can be conveyed by words. It must be seen to be appreciated. It stands alone in its class in all this world. It has no peer, no rival to divide the charms, but stands alone, the one, the only Crater Lake. Probably the six greatest natural wonders of the American continent consist in the Grand Canyon of the Colorado, Niagara Falls, Mammoth Cave, Yellowstone, Yosemite and Crater Lake, no two of which can be compared, for each one is pre-eminent.

While at Fort Klamath, in 1885, the writer obtained from Allen David, then chief of the Klamath Indians, the following tradition. When telling the story, David placed his partly closed hands before him, *to describe the rock on which the Indian's throat was cut by Llaos. Next day Llaos Rock was named, and needs but to be seen, with this explanation, to understand the reason why:

Legend of the Llaos.

"A long time ago, long before the white man appeared in this region to vex and drive the proud native out, a band of Klamaths, while out hunting, came suddenly upon the lake and were startled by its remarkable walls and awed by its majestic proportions. With spirits subdued and trembling with fear, they silently approached and gazed upon its face; something within told them the Great Spirit dwelt there, and they dared not remain but passed silently down the side of the mountain and camped far



ALLEN DAVID.

away. By some unaccountable influence, however, one brave was induced to return. He went up to the very brink of

the precipice and started his camp fire. Here he laid down to rest; here he slept till morn—slept till the sun was high in air, then arose and joined his tribe far down the mountain. At night he came again; again he slept till morn. Each visit bore a charm that drew him back again. Each night found him sleeping above the rocks; each night strange voices arose from the waters; mysterious noises filled the air. At last, after a great many moons, he climbed down to the lake and there bathed and spent the



MOUNT SCOTT
PHANTOM SHIP

DUTTON CLIFF

night. Often he climbed down in like manner, and frequently saw wonderful animals, similar in all respects to a Klamath Indian, except that they seemed to exist entirely in the water. He suddenly became hardier and stronger than any Indian of his tribe because of his many visits to the mysterious waters. Others then began to seek its influence. Old warriors sent their sons for strength and cour-

age to meet the conflicts awaiting them. First they slept on the rocks above, then ventured to the water's edge, but last of all they plunged beneath the flood and the coveted strength was theirs. On one occasion the brave who first visited the lake killed a monster, or fish, and was at once set upon by untold numbers of excited Llaos (for such they were called), who carried him to the top of the cliffs, cut his throat with a stone knife, then tore his body in small pieces, which were thrown down to the waters far beneath, where he was devoured by angry Llaos."

Movement for a National Park.

On August 16, 1885, the writer started a movement to secure a national park to include Crater Lake, and on January 30, 1886, President Cleveland issued a proclamation withdrawing from the market ten townships. On January 18, 1886, Senator Dolph introduced in the senate a bill to create Crater Lake National Park, but the opposition was so great that he felt no such bill could ever pass congress, consequently he favored giving the land to Oregon in trust for a park. The writer objected seriously to this, for the reason that the state would never make proper provision for its maintainance. The result was that little or no progress was made for many years. Soon after Hon. Thomas H. Tongue entered congress, he took up the work energetically, but made little or no progress until the winter of 1901-2. At that time he felt that a united effort might be successful and asked the writer to join him in a systematic fight, which was taken up at once and pushed with a sort of desperation. The writer had a large number of petitions, circular letters, etc., printed, and mailed them to every newspaper and postmaster in the state, besides a large number of interested parties, nearly all of whom exerted themselves in securing names and letters, which were forwarded to Mr. Tongue, who used them to the best possible advantage. There were many difficulties to overcome, but one by one they were mastered, and the bill finally passed congress and on May 22, 1902, it was signed by the President, seventeen years after the movement was inaugurated.

Making the Lake Known.

Previous to 1885 very few people, even in Oregon, had ever heard of Crater Lake; so, when starting a movement for a national park it became apparent that to succeed the lake must first be made known. A letter published in the Oregonian by Mr. J. M. Breck, Jr., a member of our party that year, attracted a great deal of attention, and others by the writer followed in various publications. One thousand copies of a circular letter describing the lake were printed, together with an equal number of circular letters to editors, setting forth a plea for a national park, accompanied by a request to publish all or a portion of the descriptive matter and editorial indorsement. The letter was published in nearly all the great dailies of the country, and was almost universally indorsed. Copies of a 112-page book, entitled "The Mountains of Oregon," were mailed to the President, members of his cabinet, members of congress and newspapers, and everything possible was done to call attention to the lake. The United States Geological Survey was asked to survey and plat it, and to make scientific investigations. This request was granted, and during the summer of 1886 such an expedition was sent to the lake, under Captain Clarence E. Dutton, accompanied by Captain (now General) George W. Davis. The writer was invited to accompany the expedition, and did so, having charge of the construction of boats and sounding gear, and the sounding of the lake.



MISS FAY FULLER

Sounding the Lake.

Three boats were built in Portland, two skiffs and one four-oared, lap streak, cedar boat 26 feet long and 5 feet 10 inches beam. The last-named was remarkable for the

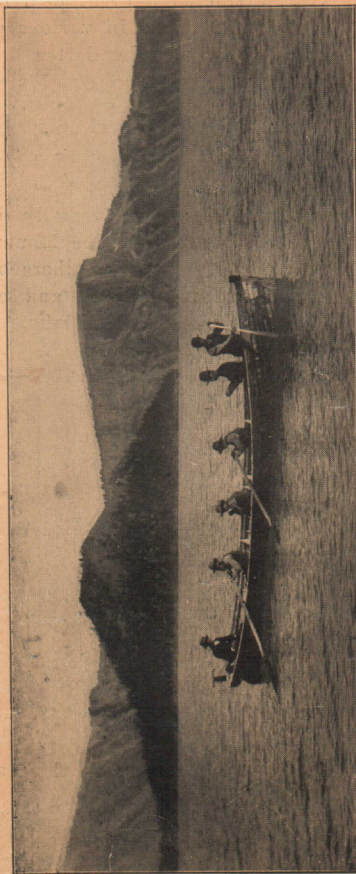


PHIL METSCHAN, DR. E. P. HILL, SENATOR FULTON, JOAQUIN MILLER, W. G. STEEL

perfection of its construction and model, and a finer craft of similar dimensions was never constructed. It was christened "Cleetwood," or golden arrow, and was the pride of our party. With it we sounded the lake, and it will ever remain a pity that no proper provision could be made for its preservation.

The skeleton now lies in a little harbor on Wizard Island. These boats were carried on a flat car to Ashland, 341 miles, where they were loaded on wagons and taken 100 miles into the mountains, then launched over the precipitous walls of Crater Lake, 950 feet to the water, without so much as scratching the paint.

Immediately after the boats were placed on the water engineers were stationed with plane-tables, so as to take observations at right angles with each other, and the Cleetwood was started across the center of the lake to do the sounding. The lead was attached to a wire and handled with a windlass. When the lead reached bottom and the



WIZARD ISLAND—THE CLEETWOOD ON CRATER LAKE—LLAO ROCK

wire was taut, a signal was given and instantly an answer was flashed back with heliographs. This located the sounding for the engineers and the boat proceeded to the next sounding. Lines were run across the lake in this manner, as the spokes of a wheel, until the work was finished. The deepest sounding was 1,996 feet, but there are several square miles of bottom over 1,900 feet deep, showing an almost level plain.

Previous to 1886 no modern Indian ever looked upon Crater Lake. During that year two Klamaths accompanied the Geological Survey as drivers, and while there climbed down to the water. This was a fatal blow to the old Indian superstition. The day of our departure about twenty tribal friends of our drivers appeared in camp, and nearly all of them looked upon its waters. One wrinkled old tyeec came up the canyon directly behind a tent making all sorts of mysterious signs and staring directly at the ground in front of him. Reaching the tent, he squatted down with his back



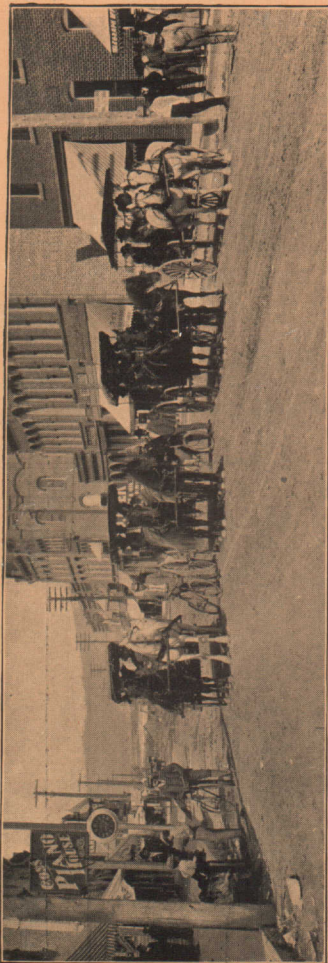
CRATER LAKE

to tent and lake. Very soon the tent was removed and Lo trotted down the canyon, never looking back but gesticulating and murmuring to himself. He had been to Crater Lake, but had never seen it. While the Mazamas were there in 1896 over two hundred Klamath Indians were in camp on the rim, since which time they visit the place without fear.

Stocked With Fish.

In August, 1888, Mr. E. D. Dewert, of Portland; Mr. S. S. Nicolini, of Ragusa, Austria, and the writer carried trout minnows from Gordon's ranch to the lake, 41 miles distant, and on September 1, 37 of them were placed in the lake. Until the summer of 1901 it was supposed that the effort to stock the lake had been a failure. At that time an investigation was made by Mr. J. S. Diller, of the United States Geological Survey, who found a few, one of which was fully thirty inches long, and showed evidences of age. In 1896 Dr. B. W. Evermann, Ichthyologist of the United States Fish Commission, made a thorough investigation of the lake, to determine its fitness for fish life, but found no fish. He reported favorably on the quality of

A PORTION OF W. G. STEEL'S PARTY LEAVING MEDFORD FOR CRATER LAKE, AUG. 5TH, 1903



water, temperature and fish food. During his investigations he took the following temperatures of the water:

Date, Hour and Station—	Depth, Feet.	Temperature.
Aug. 20, '96, 11 A. M., at bottom, ½-mile south of Wizard Island.....	93	43.5
Aug. 20, '96, 1:40 A. M., at bottom, ¼-mile off Phantom Ship	866	44.
Aug. 22, '96, 3 P. M., about 2¼ miles east of Wizard Island	555	39.
Aug. 22, '96, 4 P. M., about 2¼ miles east of Wizard Island	1040	41.
Aug. 22, '96, 5 P. M., at bottom east of Wizard Island	1623	46.

On August 22 the surface temperature was 61 degrees.

In commenting on the above Dr. Evermann says: "If there be no error in our observations, it seems certain that the waters of Crater Lake are still receiving heat from the rock upon which they rest. The heat of the old volcano has not entirely disappeared. The coldest water is neither at the bottom or at the surface, but at some intermediate depth." He sums up his work as follows: "It may be said that while the conditions obtaining at Crater Lake are not the most favorable to fish life, there seems to be no reason why trout in limited numbers might not thrive in it. The water is all that could be desired as to purity and temperature, but the depth is so uniformly great that only small areas of bottom suitable for spawning beds are found. The entire absence of all other fish life, and the limited vegetation supported by the lake, reduce the food supply almost wholly to small free-swimming crustaceous and insect larvae. Both of these are present in considerable abundance, but probably not in sufficient quantities to support a large number of fishes. On the other hand, any fishes which may be planted in this lake will have no rapacious fishes with which to contend; the struggle will, therefore, be wholly with the physical environment and food supply."

In conclusion will say, Crater Lake is one of the grandest points of interest on earth. Here all the ingenuity of Nature has been exerted to the fullest capacity to build one grand, awe-inspiring temple, within which to live and from which to gaze upon the world and say: "Here would I dwell and live forever. Here would I make my home from choice; the universe is my kingdom, and this my throne."



LLAO ROCK
Seattle Mountaineers Club.

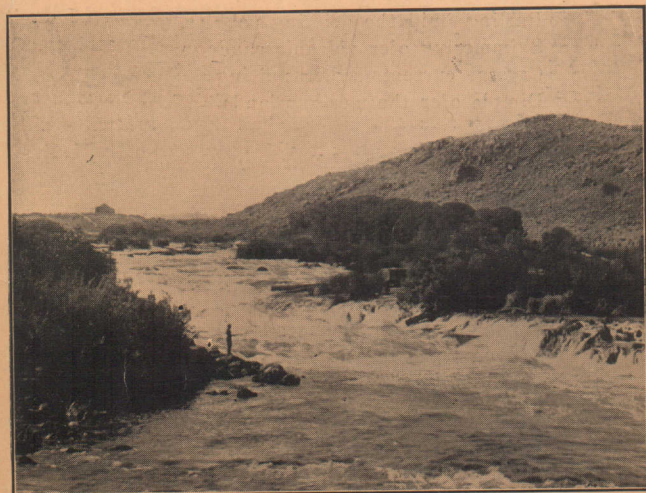
On Wednesday evening, December 19, forty-five people met at the residence of Dr. J. P. Sweeney, in Seattle, and organized the Seattle Mountaineers' Club. The following board of directors was elected to serve during the ensuing year: Dr. E. Weldon Young, Asahel Curtis, Professor Henry Landes, Miss Mary Banks, Dr. J. P. Sweeney, W. M. Price and Edgar L. Hampton, from whom the officers will be selected. Plans are already being formulated for an active Summer of mountain-climbing, besides which weekly trips to interesting points in the vicinity of Seattle will be made, somewhat after the manner of the Appalachian Club of Boston. There is no question but this club will be a great and permanent success from the start. May it live long and prosper.

THE KLAMATH.

O. C. Applegate.

From thy crystal springs, * Mazama,
Leap the streamlets clear and free,
Roaring down the glacial gorges
Madly rushing toward the sea;
Resting never 'mid the highlands,
Frothing, foaming on the way,
Lost anon o'er cliffs volcanic,
Born again from silv'ry spray.

Roaring, rushing, sweeping, gushing,
Struggling ever to be free—
Gaining force and gaining volume
For the foray to the sea.



"FROTHING, FOAMING ON THE WAY"

* Mazama, Crater Lake Mountain.

Thus beginning 'mid the summits,
Torn by igneous fires anon—
Threads of silver, springing ever,
Thus the streams of Klamath run.
Beetling crags and mighty pillars
Rise above where springs awake,
Crags that curb the deep cerulean
Of our mystic Crater Lake.

Deep and tranquil, gently flowing,
Shimmering o'er volcanic sands;
Roaring, rushing, sweeping, gushing,
Onward through plutonic lands.

Through the valleys, broad and verdant,
At the Cascades' sylvan base,
Canyon born, the icy rivulets
Babble onward in their race,
Purling 'mid the drifting pebbles,
Shimmering o'er volcanic sands.
Crystal currents swift uniting
Dimple o'er the meadow lands—

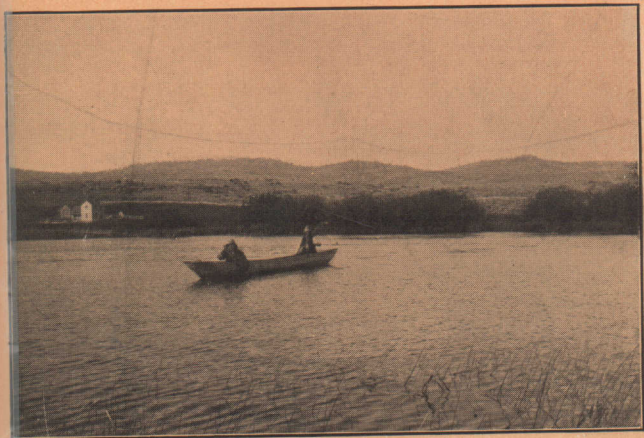
And the tongues of war and clamor,
Heard at first where forests roar,
Wake again in songs of gladness
All along the pebbly shore.

Streams of crystal, deep and tranquil,
Shimmering o'er the meadow lands,
Canyon born, but now untrammled,
Gently creeping o'er the sands.
Anon to lakes of †Ouse and ‡Ouxy
All thy silvery streamlets glide,
Lakes long known to Indian story,
Where the Klamath boatmen ride;

† Ouse, name of Upper Klamath Lake in Klamath language.
‡ Ouxy, Klamath Marsh, Klamath Lake of Fremont, 1843.

Changed to songs of home and welcome,
All the warlike tongues of yore,
As the wavelets beat in gladness
All along the sounding shore.

Chosen home of Indian legends,
Tales of love and warriors true;
Stilled at last the battle's clamor
Where the winged arrows flew.
Sounds of peace and songs of gladness
Fill the welkin round thy strand,
For the deeds of savage foeman
Mar no more thy happy land.



"WHERE THE KLAMATH BOATMEN RIDE."

Songs of gladness, songs of welcome,
Where the emerald shorelines sweep,
Songs of rest from mighty labor
In the canyons vast and deep.

Ouse of Klamath, lake of beauty,
How the redman loves thy shore,
Where his fathers built their wigwams
In the mystic days of yore.

O! the haughty Klamath gathers
 All his mighty force from thee
 And sweeps in triumph down the gorges
 Surging onward toward the sea!

Free from mountain, free from lakelet,
 Free from dallying on the plain,
 Free to rush with frenzied fervor
 On his mad march to the main.

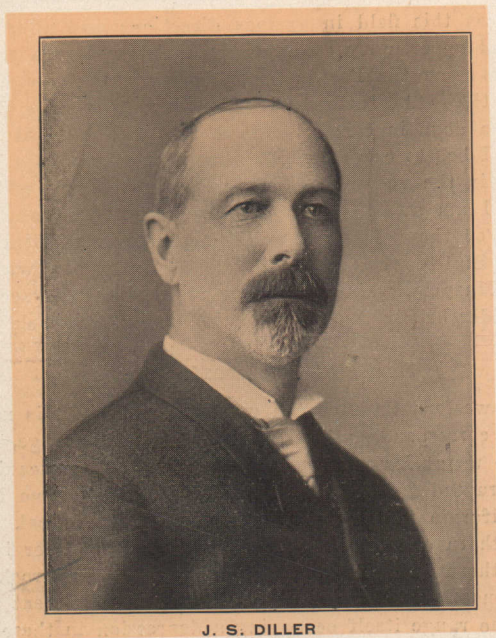


"AND HIS CITY SPRINGS A MARVEL."

In thy bosom, countless ages,
 Slept a power no redman knew
 As athwart thy roaring rapids
 Sped his graceful pine canoe:
 Now the Saxon calls to labor
 Mighty forces from thy tide
 And his city springs a marvel
 By §Ewauna's sedgy side.

Flow forever, peerless river,
 Toward old ocean's boundless tide,
 Giving plenty on your journey
 Spreading beauty far and wide.

§ Ewauna, lake on which Klamath Falls is situated.



J. S. DILLER

THE WRECK OF MOUNT MAZAMA.

J. S. Diller.*

The geological record of this country from the earliest epochs to the present time is replete with volcanic phenomena, but the climax in such matters appears to have been reached in the earlier portion of the Neocene, when one of the largest known volcanic fields of the world was vigorously active in our Northwestern states. It stretches from the Rocky Mountains to the Pacific, embracing a large part of Wyoming, Montana, Idaho, Washington, Oregon and California, and presents a great variety of volcanic phenomena concerning which, notwithstanding a copious literature, there has been as yet a small amount of detailed investigation. The work of the Geological Survey has taken

* Chief Geologist, U. S. Geological Survey.

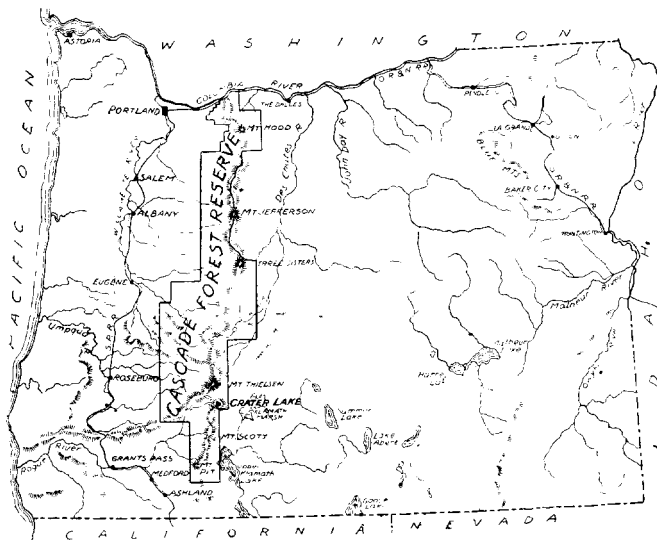
me across this field in various directions and afforded an extended opportunity at intervals during nearly a score of summers upon the Pacific Coast, to study the western portion of the field. Instead of attempting a summary of what has been done in this large field, as perhaps might be expected, I beg to call attention more particularly to a special feature in the volcanology of the Cascade range, which, so far as I am aware, is not well represented in any other portion of the field nor in fact anywhere else within the United States. To set forth more clearly the wreck of Mount Mazama, which is the central theme, it is necessary to consider briefly the general relations of the whole range.

Limits of the Cascade Range.

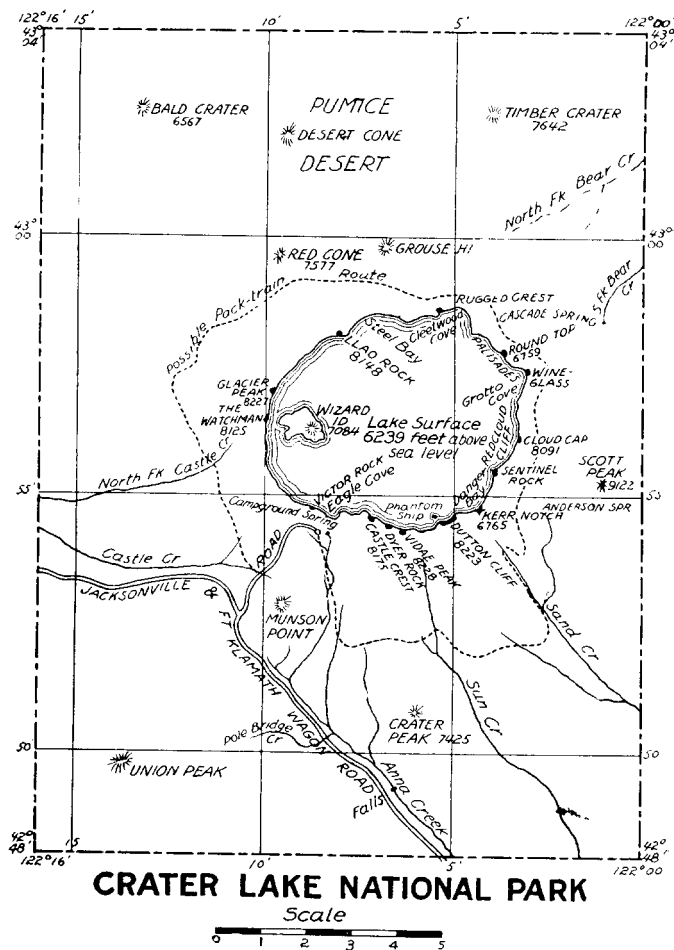
The western limit of the great volcanic field is marked by the corresponding border of the Cascade range, which is made up at least largely, if not wholly, of volcanic material erupted from a belt of vents extending from Northern California to Central Washington. Lassen Peak marks the southern end of the Cascade range and Rainier is near the northern end. Beyond these peaks the older rocks rise from beneath the Cascade range and form prominent mountains, the range itself occupying a depression in these older terranes.

Foundation of Cascade Range.

A clearer conception of the development of the Cascade range may be gained by considering the geography of the region during the later portion of the Cretaceous. At that time the coast of Northern California, Oregon and Washington subsided, causing the sea to advance upon the land. In California it reached the western base of the Sierra Nevada and covered a large part, if not the whole, of the Klamath Mountains. In Washington it beat upon the western base of the range near the coast north of Mount Rainier, but in Oregon it extended far into the interior. Marine deposits of this period occur along the base of the Blue Mountains in Eastern Oregon. The Cascade range of Oregon did not then exist to shut out the open sea from



that region. East of the Klamath Mountains, as shown by the position and distribution of the Cretaceous strata and their fossils of marine origin, the open sea connected directly with that of the Sacramento valley. The Cascade range throughout a large part of its extent rests upon Cretaceous rocks and is associated in Oregon and California with a depression in the older rocks between the Klamath Mountains on the one hand and the Blue Mountains and Sierra Nevada upon the other. This depressed area beneath the lavas of the Cascade range must not be regarded primarily as a region of subsidence. Its chief movement since the Cretaceous has been upward. It has been raised above the sea. The Klamath and Blue Mountains, as well as the Sierra Nevada, however, have been elevated so much more, that the region in question would appear on the surface as a depression were it not filled with lava. The depression is so deep where the Cascade range is cut across by the Klamath and Columbia Rivers that the bottom of the lavas



CRATER LAKE NATIONAL PARK

Scale



forming the bulk of the range is not reached. However, at the ends of the range the older rocks rise to form a more or less elevated base for those parts of the range, and at Mount Shasta as well as on the divide between the Rogue and Umpqua Rivers, where an arch of the older rocks extends northeasterly from the Klamath Mountains towards the Blue Mountains of Eastern Oregon, the Cascade range gets so close to the western side of the depression that the lavas lap up over the arch of older rocks rising to the westward. At various points of the range granolitic rocks, such as gabbro and diorite, occur, but the deep erosion at these points may have reached the granolites corresponding to the lavas of the upper portion of the range.

Cascade Range During the Eocene.

There can be no reasonable doubt that fossiliferous Cretaceous rocks of marine origin are widely distributed beneath the Cascade range from Lassen Peak to the Columbia, and that during the Chico epoch the whole area was beneath the sea. At the close of the Chico important changes occurred in the distribution of land and sea. Northern California, as well as Southern Oregon, was raised above the sea and subjected to extensive erosion before the subsidence which admitted the sea during the early part of the Tertiary as far southeast as Roseburg, Oregon. The marine deposits of the Eocene epoch in the vicinity of Roseburg run under the Cascade range, but have not yet been found upon the eastern side. The conglomerates of the Eocene, like those of the Cretaceous, contain many pebbles of igneous rocks, but they are of types common to the Klamath Mountains and rare or unknown among the lavas exposed in the Cascade range. During the Eocene in the Coast range of Oregon there was vigorous volcanic activity, ‡ but the record of such activity, if such existed, has not yet been found in the Cascade range. That volcanoes were active along the range during the Eocene is rendered more probable although not yet conclusive by

‡ U. S. Geological Survey, 17th Annual Report, Part I, p. 456

Dr. J. C. Merriam's discovery of Eocene volcanic deposits in the John Day region.†

Cascade Range During the Miocene.

There can be no doubt, however, that during the Miocene‡ the volcanoes of the Cascade range were most active and the greater portion of the range built up, although it is equally certain that volcanic activity continued in the same region at a number of points almost to the present time. While it may be presumed that the volcanoes of the Cascade range are extinct, there are many solfataras, hot springs and fumeroles, showing that the volcanic energy of the range is not yet wholly dissipated. All the peaks of the Cascade range were once active volcanoes, and from them came most of the lava of the range. Each great volcano was surrounded within its province, at least during the later stages, by numerous smaller vents from which issued the lava that filled up the intervening spaces and built up the platform of the range.

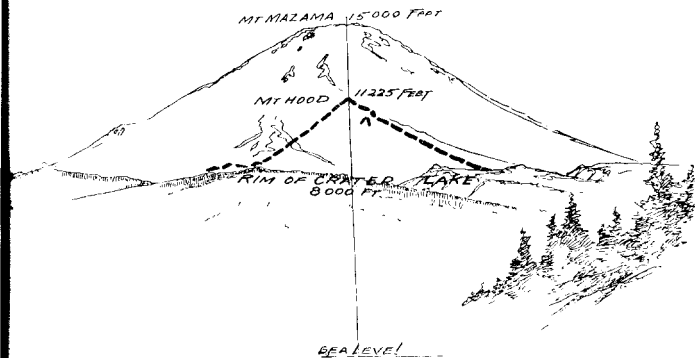
All of the great volcanoes of the range probably had their beginning in the Miocene. Many of them, like Lassen Peak and Mount Shasta, continued their activity into the Glacial period and have suffered much erosion since they became extinct. In this manner important structural differences have been brought to light among the peaks about the headwaters of the Umpqua, Rogue River and the Klamath, and these may be noted as throwing some light upon the history of Mount Mazama, whose wreck we are to consider.

Union Peak.

Union Peak (7,881 feet) is on the summit of the Cascade range in Oregon, about 50 miles north of the California line and 8 miles southwest of Mount Mazama. It is a sharp conical peak rising about 1,400 feet above the general summit of the range. About the base upon the east and west

† Bulletin Geological Department, University of California, Vol. 2, No. 9, p. 285.

‡ U. S. Geological Survey, 20th Annual Report, 1898-9, Part III, p. 32.



MOUNT MAZAMA (RESTORED) AND MOUNT HOOD
DRAWN TO A SCALE

sides, as well as upon its very summit, are remnants of the original tuff cone, but the mass of the peak exposed upon all sides is solid lava. The molten material did not sink away after the final eruption. The volcanic neck resulted from the cooling of lava within the cinder cone in the very top of the volcanic chimney, and Union Peak today shows us the neck stripped of its cinder cone.

Mount Thielsen.

Mount Thielsen (9,250 feet), the Matterhorn of the Cascade range, is 12 miles north of Mount Mazama and rises about 2,000 feet above the general summit of the range. It is built up of brightly colored red, yellow and brown layers of tuff interbedded with thin sheets of lava, and the whole is cut by a most interesting network of dikes radiating from the center of the old volcano. No trace of a volcanic neck is present; the peak is but a remnant carved out of the lava and tuff cone surrounding the vent. After the final eruption the molten material withdrew from the cone before consolidation so as to leave no volcanic neck corresponding to that of Union Peak. The subsidence after eruption within the chimney of Mount Thielsen must have been over 1,000 feet, for the sheets of lava effused from

that vent reach more than 1,000 feet above the central portion of the peak.

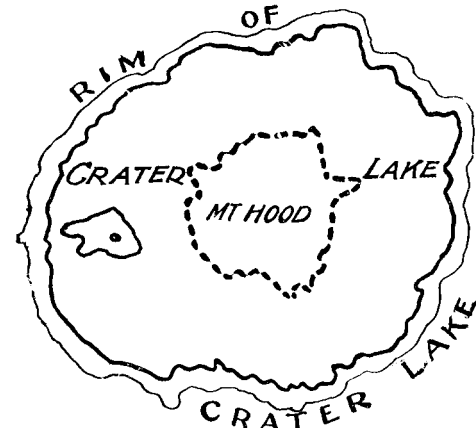
Movement in Mount Mazama.

To simplify matters it seems best at this point to anticipate some of the conclusions to be reached and state that upon what is known as the rim of Crater Lake there once stood a prominent peak to which the name Mount Mazama has been given. The crowning event in the volcanic history of the Cascade range was the wrecking of Mount Mazama, which resulted from a movement similar to that just noted in Mount Thielsen, but vastly greater in its size and consequences. It culminated in the development of a great pit or caldera, which for grandeur and beauty rivals anything of its kind in the world.

Mount Mazama is practically unknown to the people of Oregon, but they are familiar with Crater Lake, which occupies the depression within the wreck of the great peak. The destruction of the mountain resulted in the formation of the lake, and the remnant of Mount Mazama is most readily identified when referred to as the rim of Crater Lake.

Cascade Range Summit.

The Cascade range in Southern Oregon is a broad irregular platform, terminating rather abruptly in places upon its borders, especially to the westward, where the underlying Cretaceous and Tertiary sediments come to the surface. It is surmounted by volcanic cones and coulees, which are generally smooth but sometimes rough and rugged. The cones vary greatly in size and are distributed without regularity. Each has been an active volcano. The fragments blown out by violent eruption have fallen about the volcanic orifice from which they issue, and built up cinder cones. From their bases have spread streams of lava, raising the general level of the country between the cones. From some vents, by many eruptions, both explosive and effusive, large cones, like Pit, Shasta and Hood, have been built up. Were we to examine their internal structure, exposed in the walls of the canyons carved in their slopes.



CRATER LAKE AND MOUNT HOOD. DRAWN TO SCALE

we should find them composed of overlapping layers of lava and volcanic conglomerate, a structure which is well illustrated in the base of Mount Mazama.

View of Mount Mazama From a Distance.

Approaching Crater Lake from any side the rim by which it is encircled, Mount Mazama, when seen at a distance, appears as a broad cluster of gentle peaks rising about a thousand feet above the general crest of the ranges on which it stands. The topographic prominence of Mount Mazama can be more fully realized when it is considered as the head of Rogue River and sends large contributions to the Klamath River, besides being close to the head of the Umpqua. These are the only large streams breaking through the mountains to the sea between the Columbia and the Sacramento, and their watershed might be expected to be the principal peak of the Cascade range.

General View of Mount Mazama and Its Lavas.

Arriving by the road at the crest of Mount Mazama, the lake in all its majestic beauty appears suddenly in view and is profoundly impressive. The long, gentle slope upon the

outside at the crest is changed to a precipice. Nearly 20 miles of irregular cliffs ranging from 500 to nearly 2,000 feet in height encircle the deep blue lake and expose in sections many streams and sheets of lava and volcanic conglomerate which radiate from the lake as a center. Along the southern border the rim above the lake level has many superimposed flows, but upon the northeast where it is not so high it is composed largely of one great flow which coursed down a ravine of the ancient Mt. Mazama.

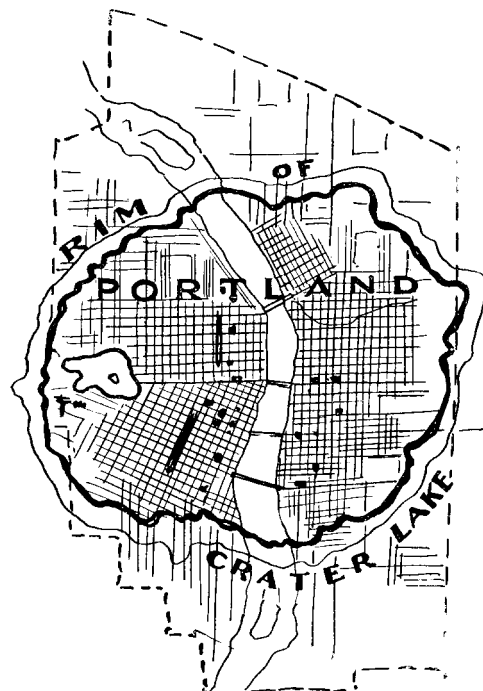
The rim is cut by a series of eleven dikes, one of which is prominent and reaches from below the lake level to the rim crest. Others rise only part way and spread into flows for which they afforded an outlet. Near the west border of the lake is Wizard Island with its lava field and cinder cone surmounted by a perfect crater.

Three kinds of lava occur in Mt. Mazama, andesite, dacite* and basalt. The andesites form nearly nine-tenths of the mass of the rim. Dacites, generally accompanied by pumice, form the surface flows on the north and east crest of the rim and are everywhere underlain by andesites. Both came from the central vent of Mt. Mazama, which, however, furnished no basalt. It all came from a number of small volcanic cones upon the outer base of the mountain. The dacites are younger than the basalts, the showers of dasites fell in the extinct craters of the basalt cones. As the oldest lavas of Mt. Mazama are andesites, so are the latest, for the lava of Wizard Island is andesite which was poured out upon the floor of the caldera after the destruction of Mt. Mazama. It marks the beginning of a second petrographic cycle from the same vent.

Original Condition of Mount Mazama.

Thus far the existence of an original Mt. Mazama has been assumed. The evidence on which this assumption is based may be briefly stated as follows: The inner slope of the rim presents sections of the broken lava flows which radiate from the lake and were evidently effused from a source higher in each case than the respective flow in the

* My collections were studied by Dr. H. B. Patton, who now regards as dacites what I have heretofore called rhyolites.



CRATER LAKE AND PORTLAND DRAWN TO A SCALE

rim. If the flows of the rim were to be restored to their original size by extending them inwards from the rim, as they once certainly did, they would converge to a common source and make a volcano which would occupy the place of the caldera and make a prominent peak, Mt. Mazama.

The peak must have had a crater similar to that of Wizard Island, for it was the source of much fragmental material spread in all directions upon the mountain slope.

The former existence of Mazama Peak is indicated also by the radial series of dikes which cut the rim. They evidently originated in the pressure of the column of molten

material in the chimney of a volcanic peak rising some distance at least above the rim.

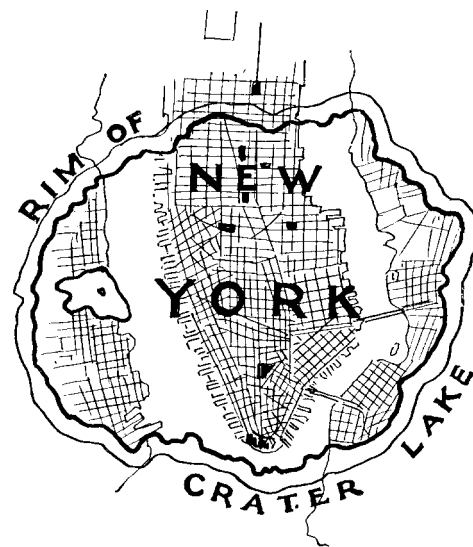
The most convincing evidence of the existence of Mt. Mazama on the site of Crater Lake is to be found in the glaciation and drainage of the rim. The radiating glaciers, which in their descent scored the crest of the rim, could have come only from a central peak. The records of the ice and water drainage from the peak in the topography of the rim are unmistakable.

There can be no reasonable doubt as to the former existence of Mt. Mazama, but its shape and size are more difficult to determine. Mt. Mazama is composed largely of lavas similar to those of Mt. Shasta, and from the slopes of that famous peak we may draw an inference as to those of Mt. Mazama. Mt. Shasta, unlike Mt. Mazama, does not stand on an elevated platform. It rises with a majestic sweep of 11,000 feet from gentle slopes about its base, gradually growing steeper upwards to the bold peak. At the height of 8,000 feet it has about the same diameter as Mt. Mazama at an equal elevation in the rim of Crater Lake. Above this Mt. Shasta rises over 6,300 feet. The prominence of Mt. Mazama as a drainage center is quite equal to that of Mt. Shasta, but its slopes on the rim of Crater Lake, ranging from 10 to 15 degrees, are scarcely as great as those of Mt. Shasta at a corresponding elevation. On the other hand, the canyons of Sun and Sand Creeks on Mt. Mazama are more profound and have been much more deeply glaciated than any of those on Mt. Shasta. It therefore appears reasonable to suppose that Mt. Mazama had an altitude at least as great and possibly greater than that of Mt. Shasta (14,380)

Development of Mount Mazama.

Mt. Scott is only a large adnate cone to Mt. Mazama. It belongs to the same center and holds essentially the same relation to it as Shastina does to Shasta. The slopes of Mt. Mazama reach to the plains at its eastern base, and it is one of the largest members in the composition of that range.

The beginnings of Mt. Mazama are now deeply buried beneath the lavas of the range, including those displayed on



CRATER LAKE AND NEW YORK CITY DRAWN TO A SCALE

the lower slopes of the great caldera beneath the water of Crater Lake. The earliest lavas now visible are those of the southern and western lake border, and when they were erupted the volcano was normally active, sending out with its streams of lava large contributions of fragmental material to make the heavy conglomerates of the older portion of the rim. The many succeeding flows of andesite and layers of conglomerate built up the mountain slope to the crest of the rim upon the southern and western side, and Mt. Scott, too, had attained its full development when the principal vents of basalt opened and by a series of eruptions built up the surrounding country with adnate cones upon the outer slope of the rim of the lake. Then followed the large eruptions of dacite, forming Llap Rock and the northern crest of the rim to Cloud Cap. These flows occurred during the period of glaciation of Mt. Mazama, and the streams of lava alternated with streams of ice, a combination which doubtless gave rise to extensive floods upon the slopes, filling the valleys

below with volcanic debris from the mountain. In connection with the eruption of the viscous lavas (dacites) there were great explosive eruptions of pumice, spreading it for twenty miles or more across the adjacent country. The explosive activity of Mt. Mazama culminated in the eruption of a peculiar dark pumice rich in hornblende which followed the outflow of the tuffaceous dacite.

Destruction of Mt. Mazama—Origin of the Caldera.

Then came the revolution which removed the upper 6,000 feet of Mt. Mazama, as well as a large core from its base, and gave rise to the caldera. How was this change produced?

There are only two ways in which it could have been effected, either by an explosion which blew it away, or a subsidence which engulfed it.

The occurrence of vast quantities of pumice spread for a distance of 20 miles in all directions about the base of Mt. Mazama is evidence of a most tremendous explosive eruption at that point, an eruption the equal of which, so far as known, has not yet been found anywhere else in the Cascade Range. Vast quantities of fine material were blown out at the same time and by drainage gathered into the surrounding valleys, which it fills to an extent unknown, as far as I have observed, upon the slopes of any of the other great volcanos of the range.‡ This impressive evidence shows conclusively that a late, if not the final, eruption of Mt. Mazama was explosive, and of such magnitude as to suggest that the removal of the mountain and the origin of the caldera may be counted among its effects. The suggestion, however, is not supported by the evidence resulting from a study of the ejected material and its relation to the lava flows of the rim. The fine material filling the valleys and the pumice throughout its great area is hornblendic in character and belongs to the dacites of the rim. Andesitic material may be present locally, but its occurrence is exceptional. Practically the whole of the material ejected by the

‡ As far as my own observation goes, the above remarks apply to Lassen Peak, Mt. Shasta, Mt. Pit, Mt. Thielsen, Diamond Peak and Mt. Hood

final explosion is dacite. The eruption therefore was of the usual type and not of the kind which removes mountains. As far as may be judged from the pumice deposits in the rim, the greatest eruption of that sort of material from Mt. Mazama occurred before the extrusion of the dacite of Llaor Rock, and furnishes evidence that the greatest explosion occurred long before the destruction of Mt. Mazama.

There is another matter of importance bearing directly upon the explosive theory of the caldera which renders that theory wholly untenable and fully corroborates the conclusion derived from a study of the character and distribution of the pumice. The lava exposed upon the inner slope of the rim is chiefly andesite, and its relation is such as to indicate that solid sheets of andesite lava formed by far the greater part of Mt. Mazama. If the caldera resulted from an explosion this mass of andesite flows would be broken to fragments and blown out to fall around the caldera and form a rim of fragmented material. From the size of the lake and the remaining portion of Mt. Mazama it is possible to compute approximately what the size of the rim formed in this way would be. But before we can do this it is necessary to consider the size and shape of the caldera, especially that part which lies beneath the lake.

The Bottom of Crater Lake.

To determine the configuration of the bottom of Crater Lake a large number (168) of soundings were made under the direction of Major Dutton. His results were published by the United States Geological Survey upon a special map of the lake, scale 1: 62,500 with a contour interval of 100 feet. The principal lines of the soundings are noted, including 96 of the 168 measured depths. From these data, together with information from Mr. W. G. Steel, who was present when the soundings were made, the bottom has been roughly contoured upon the large scale map with a vertical interval of 500 feet. The positions of the two sublacustrine cones were indicated, and it is clear from the soundings that a large mass of lava spread from the Wizard Island vent over the lake floor. The great deep toward the eastern margin of the lake may not have been filled up any after the caldera

was formed, but it is evident that the depth of the western portion has been greatly reduced by the material erupted from the three small vents upon its floor. It appears well within the bound of reason to assume that 1,500 feet is not greater than the average depth of the original caldera below the present level of the lake.

Estimated Size of Fragmental Rim.

The area of the caldera, as marked out by the crest of the rim, is over 27 square miles, and its original volume, making some allowance for the subsequent refilling from the craters on its floor, is about 12 cubic miles. If to this we add 5 cubic miles for the part of the mountain above the caldera, and this is a conservative estimate, we get 17 cubic miles of material for whose disappearance we have to account. If this material were blown out by a great explosion and fell equally distributed upon the outer slope of the rim within 3 miles of the crest it would make a layer over 1,000 feet in thickness. This mass would be so conspicuous and composed of such fragmental material that its presence could not be a matter of doubt. There can be no question concerning its complete absence, for the surface of the outer slope of the rim exposes everywhere either glaciated rock glacial moraine or pumice, all of which are features which belonged to Mt. Mazama before its destruction, and no trace of a fragmental rim, such as is referred to above, was found anywhere.

The evidence of the outer slope of the rim lends no support to the view that Mt. Mazama was blown away and the caldera produced by great volcanic explosion. In fact, it completely negatives such a view, and we are practically driven to the opinion that Mt. Mazama has been engulfed. Major Dutton, who studied the rim of Crater Lake with a training gained from the active volcanoes of the Hawaiian Islands, recognized the wide distribution of the pumice, but the absence of a well-defined fragmental rim kept him from attributing the origin of the caldera to an explosion. On the other hand, he fully appreciated the difficulty of proving that it originated from a subsidence.*

* U. S. Geological Survey, 8th Annual Report, Part I, p 151

The present inner slope of the rim may not in all cases, or even generally, be the one found at the time of the collapse. In some cases, however, the inner slope was formed at that time. Of this we have evidence in the behavior of the flow at Rugged Crest. It was one of the final flows from the slope of Mt. Mazama. Before the central portion of the flow where thickest had congealed within the solid crust, Mt. Mazama sank away and the yet viscous lava of the middle portion of the stream flowed down over the inner slope of the andesitic rim into the caldera. The liquid interior of the flow having withdrawn, the crust caved in and formed Rugged Crest with its peculiar chaotic valley of tumbled fragments, columns and bluffs. Other explanations of the peculiar reversed flow of Rugged Crest have been sought, but without avail. The facts are so simple and so direct that they appear to preclude any other hypothesis.

It would be apparent from the facts also that the collapse of the mountain was at least moderately sudden, for it is not at all probable that the Rugged Crest flow was long exposed before reaching the present level of the lake and beyond into the caldera.

We may be aided in understanding the origin of the caldera by picturing the condition that must have obtained during the eruption of the Rugged Crest dacite from the upper slope of Mt. Mazama. At that time a column of molten material rose in the interior of the mountain until it overflowed at the summit or burst open the side of the mountain and escaped through the fissure. The rent of the mountain side is formed in such cases by the pressure of the column of molten material it incloses. The molten lavas being heavy, the pressure of the column within the mountain is very great, and increases rapidly with the height of the volcano. During the final activity of Mt. Mazama there must have been within it a column of lava over 8,000 feet in height above the base of the Cascade range. It is possible that on account of this great pressure, aided possibly by some other forces, an opening was formed low down upon the mountain slope, allowing the lava to escape. The subsidence of the lava within the mountain left it unsupported

and caused its collapse. Phenomena of this sort are well known in connection with the Hawaiian volcanoes. In 1840 according to Prof. J. D. Dana, there was an eruption from the slopes of Kilauea, 27 miles distant and over 3,000 feet below the level of its summit. At Kilauea the summit of the lava column is well exposed in a lava lake. In connection with the eruption of 1840 the lava of the lake subsided to a depth of 385 feet, and the irregular walls surrounding it left without support, broke off and fell into the molten material below. During the intervals between the eruptions of Kilauea the molten column rises toward the surface only to be lowered by subsequent eruptions. The subsidences, however, are not always accompanied by an outflow of lava upon the surface. At other times it may gush forth as a great fountain hundreds of feet or more in height as if due directly to hydrostatic pressure.

That Mt. Mazama disappeared and the caldera originated through subsidence seems evident, but the corresponding effusion upon the surface, if such ever occurred, has not yet been found. It is hardly conceivable that 17 miles of material, much of it solid lava, could collapse, be refused and sink away into the earth without a correlative effusion at some other point.

The bottom of the caldera is over 200 feet below the level of Klamath Marsh, which lies at the eastern base of the Cascade range, and it is not to be expected that the point of escape would occur at any level above (4,200). This consideration would indicate that the effused mass should be sought on the western slope of the range. The 4,200-foot contour, the level of the lowest portion of the lake bottom occurred along Rogue River at a distance of less than 1.5 miles from the rim of the lake. The correlative lavas might perhaps be expected to be dacites closely related to the final flow of Mt. Mazama, but on Rogue River no such lavas were seen—they are generally basalt—nor is there any suggestion of the escape of such an enormous mass of lava as recently as the time of the great collapse. Whether or not we are able to discover the corresponding effusion, there seems no reasonable doubt that Mt. Mazama was once a reality and that it was wrecked by engulfment.

J. S. DILLER,

U. S. Geological Survey.

Science, February 7, 1902.

GAYWAS.*

O. C. Applegate.

Upon the rim of Klamath land,
Where Cascade cliffs are hoar and grand,
Where pine and hemlock forests moan,
Mid giant walls of igneous stone
A mystic lake lies still and high,
Reflecting cliff, and tree and sky,
A place of wondrous sight and sound,
'Twixt earth and heaven the half way ground.

Gaywas unrivalled, we've often stood
A thousand feet above thy flood,
Hung o'er the verge, looked down and down
O'er beetling crags of gray and brown,
The feathery arms of hemlocks through,
Peered down upon the waters blue,
Saw hemlocks changing more and more,
Till ferns they waved upon the shore.

Brave old warriors, grim and brown,
Recall traditions handed down
Of how the horned demons came
From out volcanic sea of flame
And scourged the land, till now
The bows that pierce the mountains brow
The mystic land of Gaywas crossed
Recall to mind the warriors lost.

When night has draped these mountains grand,
Come pilgrims from the mystic land
And on the lake a voice is heard
Like the plaintive cry of a far off bird,
And through the air's peculiar hush
Broad wings of spirits wave and rush,
While phantom ships, with great white sail,
Drift here and there in moonlight pale.

* Crater Lake

Mid rippling waves that lave the wall
 Come phantom bathers, wierd and tall,
 And curious demons sport and swim
 Beneath the moonlight pale and dim.
 With fays they take on wings of white
 Around the cliffs their circling flight,
 Their voices blend in the murmuring breeze
 That whispers through the hemlock trees.

No wonder that our pilgrims take
 Their annual trips to Crater Lake,
 Nor that the untaught Klamath brain
 Filled Gaywas with a mystic train,
 And thought this place, so weird and grand,
 The threshold of the spirit land.

PETITION FOR A NATIONAL PARK.

The following petition was circulated by the Editor, and forwarded to President Cleveland in 1885:

To the President of the United States, Washington, D. C.

Sir: Your petitioners, residents of the State of Oregon, respectfully represent the following facts, and ask your consideration thereto:

That Crater Lake is located in Klamath County and State of Oregon, and is one of the natural wonders of the United States, if not of the world. It is a portion of the unappropriated vacant domain of the government, and in the opinion of your petitioners should be set apart and reserved from future disposal.

The surface of the lake is 6,300 feet above sea level, and it is about eight miles long and six miles wide. It contains a circular island 600 feet high, on which is found an extinct crater which is ninety feet deep and 475 feet in diameter. In another portion of the lake is found a conical shaped rock, which is perpendicular, and rises to an altitude of 2,200 feet above the water's surface. Other rocks of remarkable form and elevation tower high above the lake. The lake walls are nearly perpendicular, and vary in altitude from 1,000 to 2,000 feet.

Adjoining the lake and guarding its approaches, the mountains are rugged and of great altitudes--one summit being 9,950 feet above sea level.

The limits herein asked to be reserved are valuable for neither agriculture or minerals.

Therefore, your petitioners ask that the following area containing said lake and its approaches be set apart and reserved from future settlement or other appropriation by the government, and kept and reserved as a public park for the people of the United States, to-wit: Townships 27, 28, 29, 30 and 31, in ranges 5 and 6, east of the Willamette Meridian.

Respectfully submitted:

Binger Hermann, Member of Congress.
 Z. F. Moody, Governor.

- *R. P. Earhart, Secretary of State.
- Edward Hirsch, State Treasurer.
- *E. B. McElroy, Superintendent of Public Instruction.
- J. B. Waldo, Chief Justice Supreme Court.
- William P. Lord, Judge Supreme Court.
- *W. W. Thayer, Judge Supreme Court.
- *John Gates, Mayor of Portland.
- R. B. Curry, Auditor of Portland.
- *Donald Macleay, President Board of Trade.
- F. K. Arnold, Secretary Board of Trade.
- *Mathew P. Deady, United States District Judge.
- *James F. Watson, United States District Attorney.
- Penumbra Kelly, United States Marshal.
- *E. N. Shurtleff, Collector of Customs.
- *C. S. Schenck, Appraiser of Customs.
- *John Whiteaker, Collector of Internal Revenue.
- W. W. Skinner, Mayor of Salem.
- Charles W. Bowie, Recorder of Salem.
- E. J. Jeffery, Chairman Democratic State Central Committee.
- *W. M. Ketchum, Mayor of Albany.
- O. T. Porter, Editor Albany Bulletin.
- *E. O. Norton, Editor Oregon Vidette.
- R. J. Hendricks, Editor Salem Statesman.
- S. A. Clarke, Editor Willamette Farmer.

- W. W. Baker, Editor Rural Spirit.
 H. W. Scott, Editor Oregonian.
 C. A. Coburn, Editor Telegram.
 *F. M. Thayer, Editor News.
 *S. B. Pettingill, Editor Standard.
 A. Paffenberger, Manager Farmer and Dairyman.
 Samuel J. Gorman, Manager Catholic Sentinel.
 O. W. Tarr, Manager Christian Advocate.
 J. M. Vaughn, Manager Sunday Mercury.
 M. C. George, ex-M. C. for Oregon.
 George H. Burnett, ex-District Attorney.
 John W. Minto, Sheriff of Marion County.
 *M. N. Chapman, Clerk of Marion County.
 A. Bush, Banker.
 *D. P. Thompson, President Portland Savings Bank.
 R. L. Durham, Cashier Portland Savings Bank.
 *W. S. Ladd, Banker.
 James Steel, President Willamette Savings Bank.
 *T. A. Macrum, Cashier Willamette Savings Bank.
 *Henry Failing, President First National Bank.
 *G. E. Withington, Cashier First National Bank.
 Van B. DeLashmutt, President Metropolitan Savings Bank.
 C. P. Hogue, Cashier Metropolitan Savings Bank.
 William Mackintosh, Manager L. & S. F. Bank.
 William Reid, President Portland National Bank.
 *William Lowe, Cashier Portland National Bank.
 *L. L. Hawkins, President Ainsworth National Bank.
 J. P. Marshall, cashier Ainsworth National Bank.
 *John H. Mitchell, ex-United States Senator.
 B. B. Tuttle, Chief Clerk Railway Mail Service.
 J. E. Stuart, Landscape Artist.
 *Paul Schultze, Northern Pacific General Land Agent.
 *C. H. Prescott, Manager O. R. & N. Co.
 R. Koehler, Receiver O. & C. R. R. Co.
 *J. Brandt, Superintendent O. & C. R. R. Co.
 M. W. Henderson, President Willamette Iron Works.
 W. T. Stephens, Secretary Willamette Iron Works.
 C. H. Dodd, President State Board of Immigration.
 *C. B. Carlisle, Secretary State Board of Immigration.

- L. F. Grover, ex-United States Senator.
 *T. G. Reames, G. M. A. F. & A. M. for Oregon.
 W. T. Webber, Civil Engineer.
 C. F. Powell, Captain United States Engineers.
 G. H. Williams, ex-Attorney-General United States.
 W. M. Molson, President Molson Cordage Co.
 J. L. Barnard, Secretary Molson Cordage Co.
 R. Williams, ex-M. C. for Oregon.
 A. S. Bennett, ex-District Judge.
 H. A. Ozer, Librarian Portland Library.
 *S. F. Chadwick, ex-Governor of Oregon.
 A. M. Crocker, Manager R. G. Dun & Co.
 *J. Green, President Portland Gas & Water Co.
 H. C. Leonard, Secretary Portland Gas & Water Co.
 N. Versteeg, Chairman School Board.
 T. T. Struble, Clerk School Board.
 T. A. Jordan, Sheriff.
 *I. N. Sanders, Clerk of Multnomah County.
 L. B. Stearns, District Judge.
 J. M. Gearin, District Attorney.
 *J. B. Congle, President Mechanic's Fair Association.
 *Gustaf Wilson, Secretary Mechanic's Fair Association.
 *J. C. Tolman, United States Surveyor-General.
 *W. H. Gross, Archbishop of Oregon.
 E. W. Caswell, Pastor Grace M. E. Church.
 J. Q. A. Henry, Pastor First Baptist Church.
 *A. L. Lindsley, Pastor First Presbyterian Church.
 G. W. Chandler, Pastor Taylor-Street M. E. Church.
 J. F. Naugle, Pastor Sellwood M. E. Church.
 A. Schlenk, Pastor German Evangelical Church.
 T. L. Eliot, Pastor Unitarian Church.
 G. H. Lee, Pastor Plymouth Congregational Church.
 G. M. Pierce, Pastor Hall-Street M. E. Church.
 Rabbi J. Bloch, M. A.
 *B. W. Morris, Bishop Protestant Episcopal Church.
 F. Alspaugh, Manager Bradstreet's Agency.
 J. R. N. Bell, Editor Roseburg Review.
 H. L. Pittock, President Columbia River Paper Co.
 *S. R. Irwin, Secretary Columbia River Paper Co.

- *J. K. Kelly, ex-United States Senator.
 *O. F. Paxton, County Superintendent Public Instruction.
 T. H. Crawford, Superintendent City Schools.
 E. P. Rogers, G. F. & P. Agent, O. & C. R. R.
 *Sol Hirsch, ex-President Oregon State Senate.
 P. F. Gibney, Chaplain St. Vincent's Hospital.
 *W. W. Chapman.
 C. B. Watson, ex-Collector of Customs.
 J. J. Murphy, Postoffice Inspector.
 S. Lowenstein, President Oregon Furniture Mfg. Co.
 *William Kapus, Secretary Oregon Furniture Mfg. Co.
 *G. W. Staver, President Y. M. C. A.
 E. C. Frost, Secretary Y. M. C. A.
 *S. G. Reed, President Oregon Iron & Steel Co.
 J. McCracken, ex-President Portland Board of Trade.
 W. G. Steel.
 * Deceased

TABULATED INFORMATION.

	Elevation.	Authority.	Named by	When Named
Cleetwood Cove.	6239		W. G. Steel	Aug. '86
Crater Lake*.....	6239	U. S. G. S.	J'ks'nville party	Aug. 4, '69
Diamond Lake.....	8807		Wheeler	
Dutton Cliff.....	8223	U. S. G. S.	W. G. Steel	July, '86
Glacier Peak.....	8227	U. S. G. S.	C E Dutton	July, '86
Hillman Point.....	6239	U. S. G. S.	W. G. Steel	Aug., '88
Kerr's Notch.....	6765	U. S. G. S.	C E Dutton	Aug., '86
Llao Rock §	8148	U. S. G. S.	W. G. Steel	Aug. 15, '85
Mount Mazama . . .	8228	U. S. G. S.	Mazamas	Aug 21, '96
Mount Thielsen † .	9760	U. S. G. S.	J. A Hurlburt	1872
Scott Peak.....	9122	U. S. G. S.		
Steel Bay.....	6239	U. S. G. S.	J. S Diller	
Union Peak.....	7881	U. S. G. S.		Oct. 21, '62
Victor Rock.....			Mrs F. F Victor	
Vidae Peak.....	8228	U. S. G. S.	W. G. Steel	Aug., 1885
Watchman ‡	8125	U. S. G. S.	J S Diller	
Witches Cauldron.	7084	U. S. G. S.	W. G. Steel	Aug. 17, '85
Wizard Island.....	7084	U. S. G. S.	W. G Steel	Aug. 17, '85
Indian Names: *	Sokoax	Gaywas	§ Mokoalx.	* Ischokolax
† Mokoalx.				

Annie Creek was called by the Indians Polalx

THE PRESIDENT'S ORDER.

A few minutes before 4 o'clock, Saturday evening, January 31, 1886, Secretary Lamar signed the recommendation to the President, for the withdrawal of the land surrounding Crater Lake, and sent it to the White House at once. However, it arrived after office hours and was not presented to the President until Monday morning, when it was among the first papers signed. The papers were as follows:

DEPARTMENT OF THE INTERIOR,

Washington, Jan. 30, 1886.

Sir: In view of pending legislation looking to the creation of a public park from the lands of the United States surrounding and including Crater Lake, Oregon, I have the honor to recommend the temporary withdrawal from settlement or sale under the laws of the United States of the tract of land, surveyed and unsurveyed, comprising what is or would be townships 27, 28, 29, 30 and 31, in ranges 5 and 6 east of the Willamette Meridian, in the State of Oregon. Very respectfully,

To the President.

L. Q. C. LAMAR, Secretary.

On the back of this letter was written: "L. Q. C. Lamar, Secretary of the Interior, January 30, 1886, recommends temporary withdrawal of certain public lands in Oregon, pending legislation looking to the creation of a public park, which shall embrace Crater Lake."

Just below this appears the following order:

EXECUTIVE MANSION.

February 1, 1886.

Let the withdrawal be made as recommended.

GROVER CLEVELAND.

Then follows action by the Land Department:

DEPARTMENT OF THE INTERIOR,

Washington, Feb. 1, 1886.

The Commissioner of the General Land Office.

Sir: Herewith I transmit a copy of an executive order, bearing even date herewith, temporarily withdrawing certain public lands in Oregon, pending legislation looking to the creation of a public park, which shall embrace Crater

Lake in said state. You will instruct the register and receiver of the proper local land office by telegraph, in accordance with this order. Very respectfully,

G. A. JENKS, Assistant Secretary.

In pursuance of the foregoing order, the following telegram was sent:

Washington, D. C., Feb. 2, 1886.

To U. S. Land Office, Roseburg, Or.

Register and Receiver: Withdraw from settlement and entry, land surveyed and unsurveyed, townships 27, 28, 29, 30 and 31 south of ranges 5 and 6 east, Willamette Meridian Instruction by mail.

WM. A. J. SPARKS, Commissioner.

AN UMPQUA MEMORY.

James Neil.

I know a place where the fern is deep
And the giant fir waves high,
And a dripping ledge leans cool and steep
And a laughing brook leaps by.
And it's there to be with a soul that's free
From the street's discordant jar,
With a blanket spread on a cedar bed
And the wealth of the world afar.

I know a pool in a mossy dell
That the wary trout love best,
And a timid trail to the chaparral
Where the red deer lie at rest.
A night-bird's call when the shadows fall,
And a gray wolf's lonely cry;
A slumber deep and a dreamless sleep
Under the open sky.

—*Catholic Sentinel*

AN OLD SAW.

I saw a wood saw sawing wood, and the wood saw I saw sawing wood was the wood saw that sawed the wood I saw. Esau saw the wood saw I saw sawing wood, and the wood saw I saw Esau saw, and Esau saw the wood sawed by the wood saw I saw sawing wood. Esau also saw me as I saw the wood saw sawing wood, and I saw Esau as Esau saw the wood that the wood saw sawed. 'e saw I saw Esau, and I saw me, so I said to Esau, "Esau, I saw dust in the wood saw's teeth."

THE KLAMATH LEGEND OF LA-O.

O. C. Applegate.

According to the Mythology of the Klamath and the Indians, the chief spirit who occupied the mystic soul of Gaywas, or Crater Lake, was La-o. Under his control were many lesser spirits, who appeared to be able to change their forms at will. Many of these were monsters of various kinds, among them the giant crawfish (or dragon), who could, if he chose, reach up his mighty arms even to the tops of the cliffs and drag down to the cold depths of Crater Lake any too venturesome tourist of the primal days.

The spirits or beings who were under the control of La-o, assumed the forms of many animals of the present day, when they chose to go abroad on dry land, and this was no less true of the other fabulous inhabitants of Klamath land who were dominated by other chief spirits, and who occupied separate localities; all these forms, however, were largely or solely subject to the will of Komoo'kumps, the great spirit.

Now on the north side of Mt. Jackson, or La-o Yaina (La-o's Mountain), the eastern escarpment of which is known as La-o's Rock, is a smooth field, sloping a little towards the north, which was a common playground for the fabled inhabitants of Gaywas and neighboring communities.

Skell was a mighty spirit whose realm was the Klamath Marsh country, his capital being near the Yamsay River, on the eastern side of the marsh. He had many subjects who took the forms of birds and beasts when abroad on the land, as the antelope, the bald eagle, the blivaw or golden eagle, among them many of the most sagacious and active of all the beings then upon the earth.

* A few years ago it was the good fortune of the editor to mingle with choice spirits of Nature's noblemen and ladies of high degree, on the walls of Crater Lake, to listen to their songs and enjoy their stories. The Bard of the Sierras and the Sage of Klamath added their words of wisdom, and delighted us with their Indian reminiscences and thrilling scenes of war. Pathos mingled with stories of love, and Indian gods fought their battles over again. Among others, this bit of Indian lore was given at the camp fire by the Sage of Klamath.

A fierce war occurred between Skell and La-o and their followers, which raged for a long time. Finally Skell was stricken down in his own land of Yamsay and his heart was torn from his body and was carried in triumph to La-o Yaina. Then a great gala day was declared and even the followers of Skell were allowed to take part in the games on Mt. Jackson, and the heart of Skell was tossed from hand to hand in the great ball game in which all participated.

If the heart of Skell could be borne away so that it could be restored to his body, he would live again, and so with a secret understanding among themselves the followers of Skell watched for the opportunity to bear it away. Eventually, when it reached the hands of Antelope, he sped away to the eastward like the wind. When nearly exhausted he passed it to the Eagle, and he in his turn to Bliwas, and so on, and although La-o's followers pursued with their utmost speed, they failed to overtake the swift bearers of the precious heart. At last they heard the far away voice of the dove, another of Skell's people, and then they gave up the useless pursuit.

Skell's heart was restored and he lived again, but the war was not over and finally La-o was himself overpowered and slain and his bleeding body was borne to the La-o Yaina, on the very verge of the great cliff, and a false message was conveyed to La-o's monsters in the Lake, that Skell had been killed, instead of La-o, and when a quarter of the body was thrown over, La-o's monsters devoured it, thinking it a part of the body of Skell. Each quarter was thrown over in turn, with the same result, but when the head was thrown into the lake, the monsters recognized it as the head of their master and would not touch it, and so it remains today, an island in the lake, to all people now known as Wizard Island.

DISCOVERY OF CRATER LAKE.

J. W. Hillman.

Just 50 years ago this summer a party of prospectors from California came to Rogue River Valley, stopped a day or two, laid in a supply of provisions, and then left the valley, as they supposed, secretly, and without having betrayed the object of their visit; but while making their purchases one of the party drank, and talked enough to cause some of my friends to repeat and speculate upon the object of their mission, which was soon declared to be the old familiar hunt for the Lost Cabin mine. If I remember rightly, there were eleven members of the California party, and just as soon as their object became known another party of Oregon prospectors was formed to follow them, and if the mine was rediscovered, to share in the fruits of the fabulous wealth that was supposed to follow.

At this late date I cannot recall the names of the party formed to follow the California prospectors. I think our party consisted of eleven—just the same number as the party we were to follow. I think Henry Klippel, J. L. Loudon, Pat McManus, a Mr. Little and myself were part of the number. I know Loudon was there; I am almost sure Klippel and Little were there, and I am sure I was one of the number. We made quick preparations, got some provisions together, and started after the California miners, who soon discovered we were on their trail; and then it was a game of hide-and-seek, until rations on both sides began to get low. The Californians would push through the brush, scatter, double backwards on their trail, and then camp in the most inaccessible places to be found, and it sometimes puzzled us to locate and camp near enough to watch them. One day while thus engaged, and when provisions had run very low, each party scattered out to look for anything in the shape of game that could be found. On my return from an unsuccessful hunt, I passed close to the camp of the Californians. Up to this time neither party had spoken to one of the others, but, seeing a young fellow

in camp, I hade him good-day, and got in conversation with him. He asked me what our object was in the mountains, and why we hung so close to their trail.

I frankly told him we believed their leader had certain landmarks, whieh, if found, would enable them to locate the "Lost Cabin," and as we were all pretty good prospectors and hunters, we intended to stay with them until the mine was found or starvation drove us back to the valley. After this a truce was declared, and we worked and hunted in unison. One day, just before deciding that it was no longer safe to stay in the mountains with our very limited supply of food and no game to be found, we camped on the side of a mountain, and after consultation it was decided that a few of each party should take what provisions could be spared, and for a couple of days longer hunt for landmarks which the leader of the California party was in search of; of that party I was one. Louden did not go with us, and who else did or did not go I cannot remember.

Discovery of the Lake.

On the evening of the first day, while riding up a long, sloping mountain, we suddenly came in sight of water, and were very much surprised, as we did not expect to see any lakes, and did not know but what we had come in sight of and close to Klamath Lake, and not until my mule stopped within a few feet of the rim of Crater Lake did I look down, and if I had been riding a blind mule I firmly believe I would have ridden over the edge to death and destruction. We came to the lake a very little to the right of a small sloping butte or mountain, situated in the lake, with a top somewhat flattened. Every man of the party gazed with wonder at the sight before him, and each in his own peculiar way gave expression to the thoughts within him; but we had no time to lose, and after rolling some boulders down the side of the lake, we rode to the left, as near the rim as possible, past the butte, looking to see an outlet for the lake, but we could find none.

I was very anxious to find a way to the water, which was immediately vetoed by the whole party, and as the leader of

the Californians had become discouraged, we decided to return to camp; but not before we discussed what name we should give the lake. There were many names suggested, but Mysterious Lake and Deep Blue Lake were most favorably received, and on a vote, Deep Blue Lake was chosen for a name.

We secured a small stick, about the size of a walking cane, and with a knife made a slit in one end, a piece of paper was torn from a memorandum book, our names written on it, the paper stuck in the slit, and the stick propped up in the ground to the best of our ability. We then reluctantly turned our backs upon the future Crater Lake of Oregon. The finding of Crater Lake was an accident, as we were not looking for lakes; but the fact of my being first upon its banks was due to the fact that I was riding the best saddle mule in Southern Oregon, the property of Jimmy Dobson, a miner and packer, with headquarters at Jacksonville, who had furnished me the mule in consideration of a claim to be taken in his name should we be successful. Stranger to me than our discovery was the fact that after our return I could get no acknowledgment from any Indian, buck or squaw, old or young, that any such lake existed; each and every one denied any knowledge of it, or ignored the subject completely.—Oregonian, June 7, 1903.

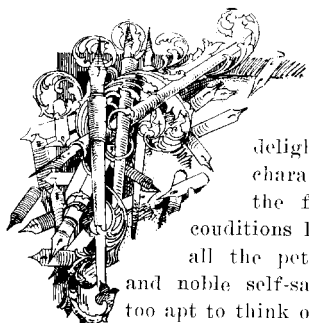
Talent, July 19, 1903.

Mr. Will G. Steel,

Dear Sir: Your letter received and contents noted. We crossed the plains in '52. Captain Gilliam, who once lived at Mount Tabor, was the head of the company train. My father's name was Woodford Reames. I knew Mr. J. W. Hillman, and heard him describe this lake. He saw the lake through an opening over the snag of a tree, and rode on and was on the edge of the wall before he realized the lake was so near. He certainly was the first white man who gazed upon this beautiful mountain lake, and deserves the credit of making the discovery, June 12, 1853—the now famous Crater Lake.

Respectfully and sincerely,

MRS. M. E. R. RAPP.



We have received "The Yambills," an Indian romance of primeval Oregon, that blends the early traditions, hatreds, love and wars into a delightful story, showing the Indian character in many lights, describing the founding of a new tribe, the conditions leading up to it, together with all the petty jealousies on the one side and noble self-sacrifice on the other. We are too apt to think of the Indians as utterly devoid of noble instincts and generous natures, but a close intimacy with them shows that human nature is about the same, whether civilized or savage. It is written by Mr. J. C. Cooper, whose many years' residence on the frontier afforded him every opportunity for observation, and his little book is evidence that he studied closely and is able to express his ideas in smooth, flowing words, that paint vivid pictures of Indian life and lore. It is printed on heavy-laid paper, illustrated and bound in boards, cloth back, 187 pages; price 50 cents. Cooper Book Co., McMinnville, Or.

KIND WORDS.

The following unsolicited expressions of good will have been received:

"It is an entertaining magazine."—East Oregonian.

"It is a magazine of optimism and nature."—Journal.

"It is all right. Good stuff."—Albert Tozier.

"It is handsomely illustrated and is an attractive little magazine."—Portland Abstract.

"No one in Oregon knows more about the beauties of Oregon than Mr. Steel."—Junction City Times.

"Allow me to congratulate you upon your initial number of Steel Points."—B. Lee Paget.

"This is by all odds the greatest pamphlet ever gotten out on the Oregon country."—E. D. McKee.

"It's a little beauty—and as good as it looks! Only make it monthly instead of quarterly."—Anne Shannon Monroe.

"I, too, am a crank on the glories of our Western Alpine scenery. Good luck go with you."—Dr. E. Weldon Young.

"It is a very attractive little publication, and I want to send you my best wishes for its success."—Gifford Pinchot.

"It is a bright little publication, ably edited by William Gladstone Steel, the well-known newspaper man of the Northwest."—Sunday Mercury.

"Many thanks for sending me the first copy of Steel Points. I am much interested in it and hope it may have a long career."—J. S. Diller.

"I have looked through the publication with considerable interest and think it calculated to do a very considerable good. May it grow and prosper."—Paul Shoup.

"I am pleased to note the inauguration of this new enterprise, and of course shall hope to see it bloom and also yield an abundant fruitage."—Captain O. C. Applegate.

"Steel Points just arrived. My sincere thanks for your kind remembrance. Portland today is a very different place from what it was in September, 1849, when I first saw it. At that time Oregon City and Astoria were both larger than Portland, which was virtually a wilderness."—J. W. Hillman.

"It is to be devoted to the scenery of the Northwest. No one in Oregon is better qualified than Mr. Steel for the work. He has spent considerable of his life climbing the mountains of the Northwest, as well as tramping over its fields and wading through its rivers, and he knows the country from top to bottom, source to mouth."—Albany Democrat.

The following is from a friend of boyhood days: "I was very much surprised on receiving your little booklet, Steel Points; surprised after so long a silence to hear that you are still in Portland. For years I have been receiving booklets, boom additions and descriptive circulars from many, many honest, earnest, conservative real estate agents; and have noticed that each of them commences with a description of that wonderful climate. It is climate, climate, climate, and now I receive a booklet from you, stating that you are organizing parties and clubs to climb it—climb it to the very tops of the mountains."—C. A. Wilkin.

The United States shares more largely in the trade of Kobe (Japan) than does any other country by \$2,304,986, the aggregate amounting to \$32,804,045. The imports from the United States show an increase of \$11,436,221 over 1904.—Consular and Trade Reports for December.

In the October number we announced an excursion to Crater Lake, to occur about August 1. Since then, however, we have canvassed the matter thoroughly, and consider it wise to postpone it for one year. In the meantime we shall exert ourselves for the establishment of first class hotels in the park, and the placing of commodious launches on the lake. Already steps have been taken to that end, and probably before the close of the current year the work will be well in hand. If successful, as we expect to be, about August 1, 1908, we will launch over the walls of the lake, in the presence of our guests, an elegant, modern pleasure boat, then give them a ride on the lake that shall mark the beginning of a new era in the Crater Lake National Park.

Olympic Excursion.

About July 9, 1907, we will leave Seattle with an excursion, bound for the Olympics, via Hoodspout and Lake Cushman. Every possible effort will be put forth to provide for the comfort and convenience of the participants, and one of the most enjoyable outings in the history of the Pacific Coast will occur. Mr. F. H. Kiser will be in the field from about June 1, getting some of his famous photos of the region, and arranging every detail on the ground and en route. During the past Summer we visited the Olympics, solely with the idea of taking an excursion there next season, and were greatly pleased with conditions and prospects for an ideal excursion. There is no more rugged and interesting region on the Pacific Coast, and it is surprising why it is so little known. More detailed information will be given in the April number of Steel Points, and probably for July we will issue an Olympic number.



If the merchants of Japan would quit trading with San Francisco, the school question would be greatly simplified.

The printed information issued by the commercial bodies of

Portland is so stereotyped that even the privy council dislikes to read it.

Over fifty per cent of the clerks in the Portland postoffice have resigned since the present postmaster was installed, or more than under all his predecessors combined.

The population of Japan is 47,000,000; of the United States, about twice that. The number of murders in Japan in 1905 amounted to 702; in the United States for five years the average has been 9,000 per annum.

Mr. M. A. Fitzgerald, a letter carrier in New York City, with twenty years' experience, was recently nominated for congress by the Independence League, and was immediately and peremptorily dismissed from the service for "pernicious political activity." At the same time the President's Cabinet was scattered through the country making political speeches and regularly drawing salaries, while the President himself was bending every effort to elect his party friends.

The critical condition of the Pacific Coast at the present time, owing to the threatened invasion of Japanese, is illustrated by the fact that the immigration from Japan during 1905 amounted to 6,945, whereas from Russia it was 144,121 and from Italy 225,974, or an average from Russia of 12,000 and from Italy of nearly 19,000 per month. If they were allowed to vote there would not be so many naturalized agitators against them.

MOUNT TAMALPAIS MOVING FROM ITS BASE.

Many of the scientists of California are very much interested in the statement of Prof. George Davidson that Mount Tamalpais has, in past years, actually moved from its former base.

This mountain is located about twelve miles northwest of San Francisco. It rises 2,600 feet above sea level and the summit is reached by a railroad that enjoys the distinction of being one of the most "crooked railroads in the world." The wide base of Mount Tamalpais is located within only a few miles of San Francisco Bay and the open Pacific Ocean. Ever since the recent earthquake additional interest has been felt in Professor Davidson's statements.

The State Earthquake Investigation Commission has learned as a result of observations made by Professor George Davidson that between 1859 and 1876 the mountain moved northward and a little westward about six feet. Now it is believed that there might have been some slight additional change since the latter year mentioned.

The change in this respect is of no practical consequence, and may be taken as meaning that the land has gained some territory from the ocean rather than that the land territory has been lessened, but it is of very peculiar scientific interest. It is not often that a mountain has been known to actually change its location.

It is also claimed on scientific authority that Mount Tamalpais is slowly rising from the sea as well as moving northwestwardly. However, the result of the labors and investigations of the three members of the Geodetic Survey will be awaited with great interest by the scientists of California.—American Inventor.

HIGHEST CAMP IN THE WORLD.

Mr. Harrington Putnam, of New York, sends the following extract from a letter from Mrs. Fanny Bullock Workman, who has been making some marvelous mountain ascents in the Himalayas.

"We have just finished a journey to the Nun Kun range, southwest of Ladakh, with six Italian porters and the guide,

C. Savage, of Courmayeur. He was with us in 1903 and refused the offers of the Duke of Rumenzori to go with me. It was my expedition, Dr. Workman only deciding to go as my guest at the last moment. We made the first circuit of the range, 90 to 100 miles, over 40 miles of glaciers never before visited. I with Savage and one porter ascended one of the three highest Nun Kun peaks—survey measurement, 23,260 feet—and thus can for a moment claim world record with men until some one goes higher. Dr. Workman went to 22,650 feet. We camped higher than any one has yet camped, highest camp being 19,899 feet, 20,632 feet, and Camp America 21,300 feet! All of us conquered two other virgin snow peaks of 18,743 feet and 20,168 feet, and four snow columns from 16,500 to 17,300 feet. My idea was to have European porters carry all camp kit after coolies gave out, and this they did successfully from the third camp on. There was chance for observing the effects of rarified air, and we found insomnia our greatest difficulty. No one slept more than a few minutes at a time at our three last camps. Our lowest minimum temperature at Camp America was -6° F., and it was bitter in a mummy tent. This is my last trip, I suppose, but it was glorious and I hate to leave the Himalayas. We climbed well above the Duke, did we not?"—National Geographic Magazine.

BLUE LAKE.

One of the Party.*

On the afternoon of the 21st day of October last, a small party of us were wending our way up the Cascade Mountains, about 15 miles south of Diamond Peak, leaving behind us the black pine desert of the Klamath country, and anxious to reach the summit in time to obtain a view of the Promised Land, viz., Rogue River Valley. Reaching the summit aimed at, one of the highest points of the range, our course was changed by an unlooked-for obstacle, and one that even a John Day party were obliged to go around. Before us, and at our very feet, lay a large lake, encircled on

* These composed "the party": Chancey Nye, H. Abbott, S. Smith, J. Brandlin, James Leyman and J. W. Sessions.

all sides by steep and almost perpendicular bluff banks, full as high as that we were standing upon. The circumference of the lake we could not estimate at less than 25 miles, and from the banks down to the water, not less than 3,000 feet. At no place could we see the remotest chance of being able to climb down to the water, without the aid of long rope and rope ladders. Near the south end of the lake rises a butte island, several hundred feet high, and drifts of snow lay clinging to the crevices of the rocky banks. The water were of a deep blue color, causing us to name it Blue Lake. It lays about one mile west of Mount Scott, 15 miles south of Diamond Peak, and 80 miles northeast of Jacksonville. In the distance, and situated in the low pass that connects the Klamath country with the headwaters of Rogue River, another lake was visible, not so large, apparently bordering, as it does, on a large prairie. From the banks of Blue Lake no outlet is visible, but on descending the west side of the mountain, which is densely covered with heavy hemlock timber, we found water gushing out, and fine grass on what we called the water level of the lake, and following this level around the west and south sides, springs and small streams were crossed every few yards, the waters of which joined together in the large basin or valley below, form an important factor to the north fork of Rogue River, in fact, empty into it a volume of water equal in amount to one-quarter of the whole river at Table Rock ferry.—Oregon Sentinel, November 8, 1862.

The mountain known to us as Fuji-yama, is called by the Japanese Fuji-no-yama, "Mountain of Fuji," or "Fuji San." It is 12,365 feet high—a thousand feet for every month and one foot for every day in the year. More than 10,000 pilgrims ascend it annually. The word "Mikado" signifies something like "the sacred gate," or "the sublime Porte." The name of the reigning Mikado is Mitsu Hito

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