

RAINIER, THE GIANT MONARCH OF THE CASCADES.

Lofty Summit to Be Explored by the Dauntless Mazamas.

Kite Flying From the Crest, Miles Above the Level of the Sea.

came up a few minutes later, and the mountain climbers were securely roped together.

To a man who does not care to brave the dangers of an ascent, Mount Rainier

into that strange region where Arctic shrubs cling with precarious grasp among the rocks, can pick out here and there a furrow plowed by some glacier in time gone by. Oftentimes he can notice on the side-wall curious parallel scratches, the glacial scorings. He makes his way over vast blocks of obsidian, flaky masses of tufa and volcanic scoriae, and encounters what was once a river of fire, lava frozen in its bed. By and by he sees a brook babbling from out a glacial source, its waters running white as milk; and then he crosses over to that wonderland of the mountain, the glacier. Slowly and cautiously he picks his way along the field, pausing now and then for breath and to remark the surpassing colors of the ice where it is broken into a crevasse and leads the gaze into darkness far below. Off to the side he sees a mountain in miniature, piled up with stones, frozen snow and great blocks of discolored ice. It is a lateral moraine. From above, a thousand streams come pouring down in icy bed and here and there fall in beautiful cascades; and perhaps one may find near the bank the body of an unfortunate butterfly that, winging in adventurous flight, has approached too near the region of frost and snow.

After a time the path becomes more difficult. The crevasses are larger and everywhere they appear in chaotic profusion. There is also a change under foot, and the mountain-climber, glancing down, observes that he is no longer walking on ice, but on little frozen globules. He has reached the line of neve, and is about to pass into the country of eternal snow. Upward the devious course leads, ever growing more difficult, until the air be-

Stuart. A long leap southward would bring him to the locality where Rainier, Adams and St. Helens form an isosceles triangle. Another step would lead beyond the roaring Cascades of the Colum-

Men of Science to Enter the Frozen Portals of Steaming Crater.

Heliographs to Flash the Tidings From the Topmost Peak.



M. L. PITTCOCK.



DANIEL W. BASS.

eye of the entire country, during the last week of next July, will be directed toward Mount Rainier, the highest peak in the Cascade range, and generally thought to be the loftiest point in the United States. Some day in that week the Mazamas expect to reach the summit and to conduct experiments that will interest the world of science. The height of the mountain will be determined by the most exact calculation; observations will be taken respecting air currents and wind velocity; mammoth kites, laden with self-registering instruments, will be sent upward a mile or more from the summit; carrier pigeons will leave at intervals with tidings of the party and, if the atmospheric conditions are favorable, the heliograph will flash the news directly from the mountain peak into Seattle.

No one in the Pacific Northwest needs to be told that the Mazamas, or mountain-climbing club, every year make a visit to some one of the famous scenic localities of the Coast. The organization, which numbers several hundred members, takes its name from the mazama, a wild goat found in the mountains, and its motto, "Nesika Klatawa Sahale," is the Chinook jargon for "We Go Up." The president of the club is L. L. Fiske of the Portland Oregonian; the first vice-president is Miss Fay Fuller, of Tacoma, the second vice-president and also general counsel is Daniel W. Bass, of this city, and the secretary is Rev. Earl M. Wilbur, of Portland.

It is safe to predict that the ascent of Mount Rainier will attract more attention than any like undertaking in the history of mountain-climbing, and the Mazamas, realizing that fact, have already begun preparations. The plan is to have the anniversary meeting in Tacoma on the evening of July 19, and to leave the next morning in time to camp at Paradise Valley, July 22. Dr. William B. Knapp, of Portland, chairman of the outing committee, announces several departments of original research. Prof. W. D. Lyman, of Walla Walla, will make an especial study of glaciers; M. W. Gorman, of botany; Prof. Edgar McClure, of the University of Oregon, will measure the elevations of all points of interest; A. J. Johnson will look after the forestry; C. Hart Merriam, United States biologist, will probably act in the same capacity; G. Prescott will be carrier pigeon with dispatches from the summit; W. G. Steele, of Portland, will experiment with a tandem of kites obtained from the government, and is confident of flying them to a point at least a mile above the summit, or nearly four miles above the level of the sea. The kites will carry scientific instruments, cameras and the American flag. Seattle newspaper men expect to accompany the party, and to "wire" bulletins, by means of the heliograph, into their office, sixty miles away. Furthermore, the Mazamas are trying to induce the United States weather bureau to send representatives to investigate the feasibility of establishing a permanent station on the mountain. Especial attention will be given this year to the crater and the ice caves made by hot vapor currents from the interior of the earth.

Year by year the mountain-climbers have visited noteworthy points among the mountains of the Pacific Northwest, and now scarcely a peak remains that has not been visited by some member of the Mazamas. The ascent of Mount Hood was one of the great achievements of the club; last year the visit to Crater Lake, in Oregon, invited general attention, and in 1895 the expedition to the summit of Mount Adams, establishing the altitude of that peak at 14,603 feet, brought forth extended comment. On that occasion also the first graph was given its first long-distance test, and during an interval of clear atmosphere a message was flashed successfully from Hood to Adams and back again.

But Adams, with its 12,402 feet, or Hood, with its 11,325 feet, or any one of the numerous peaks of the Cascades, stands only as a pigmy by the side of Rainier; and as the elevation increases so the task of climbing the mountain becomes more difficult and dangerous. To pass by as trifles the glaciers, the crevasses, the ice fields and the thousand and one other obstacles that stand in the way of the mountain climber, one will find on Rainier the giant rock Gibraltar that thrusts its crags squarely across the pathway to the summit. On one side, to the left, more than 2,000 feet high, on the other a sheer descent; and the Mazama who reaches the summit of Rainier must have clung close in against the rock and picked his way with cautious steps along an uncertain path for a distance of 300 feet. A misstep here means risk of life, a stone falling from above may pick off the adventurer, knock him over the grade and start him down the glacier of the Nisqually, to land crushed and mangled in a few seconds at the bottom of some yawning crevasse, nobody knows how many thousands of feet below. One point in particular tries the nerves of the inexperienced, and that little spot along Gibraltar has caused more than one man to back out and to forego the distinction of standing on top of Mount Rainier.

There have been many narrow escapes on the mountain side. Last summer two of a party of five, of which Bailey Willis, the geologist, was a member, slipped into a crevasse, but their companions held a firm footing and drew them out by means of the line. In August, 1888, a party made up of John Muir, the noted geologist, Prof. Charles Piper, Daniel W. Bass,

Norman Booth, Maj. E. S. Ingraham, Arthur Warner and P. B. Van Trump, guide, made the ascent. In descending, Van Trump neglected to take the usual precaution of roping the party and, as a consequence, he himself escaped death by the slimmest chance. After a good-

offers unbounded attractions. In Paradise valley alone the camper can spend the time delightfully and, as is suggested by Dr. Knapp, can take up almost any special line of study. The valley is a pretty place; an ideal spot in summer time, filled with vari-colored wild flowers,

and in its mountain setting attractive in the highest degree. Camp of the Clouds, from which is afforded an excellent view of the jagged Tatoosh range, invites hundreds of outing parties every year. Lane falls, more than a thousand feet high, are a striking bit of scenery. Now and then the hunter may succeed in killing a bear or deer, or venturing upon the ice fields may detect a wild mazama nibbling bounding among perilous places on the mountain side. A few years ago some campers on Rainier who had just stopped for the day, noticed a mazama, utterly oblivious of them. It was perhaps a thousand feet away. Everybody

comes light and breathing hard, and the least exertion saps the fountains of strength. At last, breathless he reaches the summit and, almost overcome by the majesty of his surroundings, gazes about him in wonderment and adoration.

The height of Mount Rainier has been the subject of many calculations. The mountain has been measured repeatedly by triangulation and some of the mountain-climbers, notably Maj. Ingraham, have given the altitude from readings of the mercurial barometer. For many years, the accepted measurement was 14,444 feet, making Mount Rainier but four feet higher than Shasta, but subsequent calculations have increased the figures for Rainier and decreased those for Shasta. The latest measurement for Rainier was made in the summer of 1886 by George F. Hyde, of the United States geological survey, who used a base line at Ellensburg, in connection with the sea level gauge at Tacoma. He announced the result to be 14,513 feet. Shasta has been measured repeatedly by Eugene Ricksecker of this city, who makes the altitude 14,380 feet.

Thus Rainier stands peerless among the peaks from Baker to Shasta. In that stretch of more than 500 miles, nearly eight degrees of latitude, are twenty summits uplifted into the region of eternal snow, forming the most wonderful chain in the northern hemisphere. Near Baker is Shuksan, a peak not so well known as its companions, but rising well up toward 9,599 feet. A step to the south is a splendid group of peaks known as the Three Sisters, located in Whatcom county almost directly east of the town of Mount Vernon. If the explorer, still going southward, should follow the range he would almost immediately plunge in among an multitude of bewildering crags and rocky timbered slopes, where miners delve for gold. Crossing the Snoqualmie river near the falls he would see Mount St. and not a great distance away would be Mount

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account of its peculiar shape at the tip. Here is the region of the sugar pine, and near by is the famous Crater lake. Another step forward brings Mount Scott into proximity, and then Mount Pitt, in the land of pinus contorta. Here the Siskiyou cut in from the west, and on be-

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Be my reward some little place To pitch my tent, some tree and vine Where I may sit above the sea And drink the sun as drinking wine, Or dream or sing some songs of thine, Or days to climb to Shasta's dome Again, and be with gods at home, Salute thy mountains, clouded Hood, St. Helens, in its sea of wood, Where sweeps the Oregon, and where White storms are in the feathered air. —Joachim Miller.

Rainier, the Ruler of Them All.

traveler has journeyed among the strange mounds of the Des Chutes, and ascended from the deep canyon cut by that river, he comes out upon a plain covered with bunchgrass, and dotted with tufts of sage and little groups of junipers. The eye glances over rolling hills, and off to the

west is a view unrivaled in America. Far beyond the Columbia basin, in Washington, Mount Adams, the tip of the peak, much like a fleecy cloud, resting on the horizon. Then comes Hood, standing clear-cut against the sky; then Jefferson, so near that the timber line is distinct as a plateau of the snow-capped range; the intervening fifty miles seem no more than five; then Three-Fingered Jack, as a curiously cleft peak is known, then the Three Sisters, and near them the shapely pyramid of Snow mountain, Diamond peak glistening in the sun as the last jewel in the chain visible from the point of view.

The spurs of these vast elevations are themselves mountains that in most any other region would be regarded as mountains. Everywhere one can see a multitude of peaks, 7,000 or 8,000, or even 10,000 feet high, thrown about in such profusion that a catalogue of their names would fill a book. These same isolated spurs, if placed beside a hummock like Mount Washington, N. H., or little Vesuvius, would overtop it as Rainier overtops his companions in the Cascades. In 1888 Bailey Willis prepared a perspective of Mount Rainier, projected from a contour map, showing accurately the configuration of the summit, with the distinctive outlines of Liberty Cap, the Dome, South peak and a portion of the glaciers. The elevation of the point of sight above the sea was 20,000 feet, distance of point of sight from the mountain, 25 1/2 miles; and the distance of point of sight from picture plane 3 miles. The drawing, which was presented by the geologist to Mr. Ricksecker, shows the mountain standing loftily above its rugged surroundings, and lifting its three summits far into the sky. At Rainier's side is Mount Aix, 7,523 feet high, but so insignificant as to be unworthy of notice.

The tourist who has never seen the fantastic in nature should visit the lava beds of the Cascades. There are miles upon miles of dreary waste, where once molten rock was thrust out from the earth, and then frozen stiff. It looks like a great blackened river that had swept away from some hidden source, had been checked and then solidified. The imagination can picture along the fissure stream odd shapes resembling animals, grimacing, forbidding ghosts of a tremendous convulsion in ages past, when everything was turned to rock at the death of the river of fire. One figure is strikingly like a monkey, his outstretched arms, and the fantastic images may be multiplied to infinity. In some regions, for example the neighborhood of Mount St. Helens, trunks of trees are yet standing in the midst of the lava, indicating that the fire was comparatively recent. The Bad Lands of the Dakotas impress the beholder as weird and chaotic; the lava beds of the Cascades, in conjunction with their surroundings, are chaos in the superlative degree.

Horace McLeer.

OBJECTS OF THE MAZAMAS.

To Climb Mountains, Gain Knowledge and Save the Forest.

The objects of the Mazamas, as set out in article 2 of the constitution, are the exploration of snow-peaks and other mountains, especially those of the Pacific Northwest; the collection of scientific knowledge and other data concerning the same; the encouragement of annual expeditions with the above objects in view; the preservation of the forests in their natural beauty, and as far as possible in their natural beauty; and the dissemination of knowledge concerning the beauty and grandeur of the mountain scenery of the Pacific Northwest.

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The spurs of these vast elevations are themselves mountains that in most any other region would be regarded as mountains. Everywhere one can see a multitude of peaks, 7,000 or 8,000, or even 10,000 feet high, thrown about in such profusion that a catalogue of their names would fill a book. These same isolated spurs, if placed beside a hummock like Mount Washington, N. H., or little Vesuvius, would overtop it as Rainier overtops his companions in the Cascades. In 1888 Bailey Willis prepared a perspective of Mount Rainier, projected from a contour map, showing accurately the configuration of the summit, with the distinctive outlines of Liberty Cap, the Dome, South peak and a portion of the glaciers. The elevation of the point of sight above the sea was 20,000 feet, distance of point of sight from the mountain, 25 1/2 miles; and the distance of point of sight from picture plane 3 miles. The drawing, which was presented by the geologist to Mr. Ricksecker, shows the mountain standing loftily above its rugged surroundings, and lifting its three summits far into the sky. At Rainier's side is Mount Aix, 7,523 feet high, but so insignificant as to be unworthy of notice.

The tourist who has never seen the fantastic in nature should visit the lava beds of the Cascades. There are miles upon miles of dreary waste, where once molten rock was thrust out from the earth, and then frozen stiff. It looks like a great blackened river that had swept away from some hidden source, had been checked and then solidified. The imagination can picture along the fissure stream odd shapes resembling animals, grimacing, forbidding ghosts of a tremendous convulsion in ages past, when everything was turned to rock at the death of the river of fire. One figure is strikingly like a monkey, his outstretched arms, and the fantastic images may be multiplied to infinity. In some regions, for example the neighborhood of Mount St. Helens, trunks of trees are yet standing in the midst of the lava, indicating that the fire was comparatively recent. The Bad Lands of the Dakotas impress the beholder as weird and chaotic; the lava beds of the Cascades, in conjunction with their surroundings, are chaos in the superlative degree.

Horace McLeer.

OBJECTS OF THE MAZAMAS.

To Climb Mountains, Gain Knowledge and Save the Forest.

The objects of the Mazamas, as set out in article 2 of the constitution, are the exploration of snow-peaks and other mountains, especially those of the Pacific Northwest; the collection of scientific knowledge and other data concerning the same; the encouragement of annual expeditions with the above objects in view; the preservation of the forests in their natural beauty, and as far as possible in their natural beauty; and the dissemination of knowledge concerning the beauty and grandeur of the mountain scenery of the Pacific Northwest.

Any person who has climbed to the summit of a snow peak, acceptable to the society, is eligible to active or life membership.

The dues of active members are \$10 per annum, in advance