

Vol. I

July 1907

No. 4

STEEL POINTS



THE OLYMPICS



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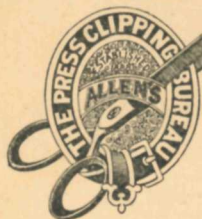
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Steel Points is published quarterly, and devoted principally to the mountain regions of the Pacific Northwest. The first number is descriptive of the City of Portland; the second is devoted to popular and scientific history and description of Crater Lake; the third to Mount Hood and this, the fourth copy speaks for itself. The next number will appear about October first and will contain a complete history of the Mazamas, together with sketches of the various outings of the club. Unless otherwise specified, subscriptions will commence with No. 1.

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PHOTO BY S. H. HOPPER

CLIMBING MOUNT STEEL

STEEL POINTS

Vol. 1

JULY 1907

No. 4

THE OLYMPICS.

A. A. Smith.



LYMPIC Mountains, which this summer, for the first time, are to have brought to bear upon them organized and systematic scientific investigation, have been for many years surrounded by more or less of unnecessary mystery. Throughout the country they have been classified in newspaper and magazine story as terra incognita, and many a pretty romance has been woven and

many a mystic legend told with the lack of definite information concerning them as a basis. And while it is true that this particular section is perhaps less known than any other of like size now on the main continent, there is, in fact, no real excuse for further romancing, or further lack of detailed knowledge on the subject as to what the Olympic Range covers and what it contains. There is today scarcely a square township of the territory, as wild and difficult of access as it is, that has not been trodden by the foot of some adventurous mountaineer, and snapped at by the omnipresent camera.

The Olympics are properly not a range, as such appellation is applied to the average wrinkle that has been put upon the old world's seamy face by the forces of nature, but rather a group of mountains, ragged, sharp, precipitous, tumbled and terribly torn in the upheavals that created them. They lie in the form of a delta, occupying the center of the peninsula forming the northwesterly-most corner of the State of Washington, and surrounded on three sides by the Pacific Ocean and its giant arms, the Strait of Fuca and Puget Sound proper. In extent they are about 100 miles long north and south by 90 miles wide, and occupy portions of the four big counties of Clallam, Jefferson, Mason and Chehalis. None

of the countless, or at least uncounted, peaks of the group reach an altitude of over 9,000 feet, and together they form a watershed that drains to the four cardinal points of the compass. The hundreds of smaller streams that spring from the glaciers and eternal snows of the crest gather themselves into a dozen or more rivers of size, reaching the sea by the four different routes. Notable among them are the Hump-tulips, the Wishkah, the Wyootche and the Satsop, feeding the Chehalis River and Gray's Harbor on the south; the Quinalt, the Hoh, the Queets and the Quillayute, emptying into the ocean on the west; the Hoko, the Clallam, the Pysht, the Elwha and the Dungeness, flowing into the Strait of Fuca; and the Quilcene, the Duckabush, the Docewallips and the Skokomish entering Puget Sound to the east. The precipitation of the region is the heaviest on the North American continent, and the quantity of ice-cold water that drains annually into the sea therefrom is something prodigious.

Owing to the well known climatic conditions of the Pacific Northwest, the timber line is high, and on every side the great forests that have already become one of the world's wonders and are rapidly becoming one of its biggest items of wealth reach down from an altitude of 5,000 feet to the water's edge. On all four sides the slope reaches the shore line upon gradients that permit of the location of the high ways of commerce, and today the entire peninsula is encircled by railroad surveys. The central portion of the great region is now enclosed in the boundaries of the Olympic Forest Reserve, the lines reaching down to within from six to twelve miles of the coast line on the west, north and east, and traversing Mason and Chehalis Counties on the south. The bordering forests, now that the era of government land-taking is practically at an end, have passed into the hands of the big timber corporations, and are forming the tonnage magnet that is drawing to the region the outlying spurs of the trans-continental railroad systems.

The Olympics are accessible from all four sides, the common routes taken by surveying parties, prospectors and the more hardy and adventurous mountaineers who have threaded

the inner recesses for pleasure and in the hunt, being up the river valleys. Every summer for the past decade or more the heart of the region has been penetrated by the solitary hunter or prospector, or by isolated and unorganized parties, but the written record of the travel is extremely limited, and exact data of a scientific kind is not obtainable. The real history of the exploration of these mountains is yet to be written, but one or two scientifically equipped parties ever having essayed the task of record making. Of these the first was the Seattle Press-alleged government expedition, which, with considerable newspaper



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CANOEING ON LAKE CUSHMAN

notoriety and but meager results of practical value, made the trip in the year 1890. This expedition, outfitted at Seattle, and embracing a newspaperman or two and three or four officers of the regular army, and equipped as an army expedition, made a hurried trip through the heart of the mountains. Entrance was made from the Straits side at Port Angeles, and the Pacific was reached via the Quinalt Valley. Little or nothing was attempted in the way of side

trips, and but little information of a lasting or valuable character was acquired.

In the year 1900 Professor Elliott, head of the Field Columbian Museum at Chicago, accompanied by two assistants and the necessary packers and pack animals, spent some weeks in the work of systematic scientific investigation of the region tributary to the Elwha Valley, and brought out the only real data of a scientific kind that has ever been recorded, all of which is now in the archives of the Chicago institution. Professor Elliott secured many hundred valuable specimens of the flora and fauna of the region, classifying a large number that were new to science. To the writer of this, upon his return, Professor Elliott said that he had traversed all the known and accessible mountain ranges of the world, and that the Olympics were a thing apart from them all. Nowhere, he declared, did any of the mountain ranges of the world excel in ruggedness and scenic grandeur the heart of these mountains, and for one thing they excelled them all. This was in the sharpness of the towering ridges, and the terrible manner in which they were broken up. Professor Elliott expressed the same opinion, as have others, that from the geologic standpoint the Olympics were new, and that the ravages of time had not yet worn off their sharper edges.

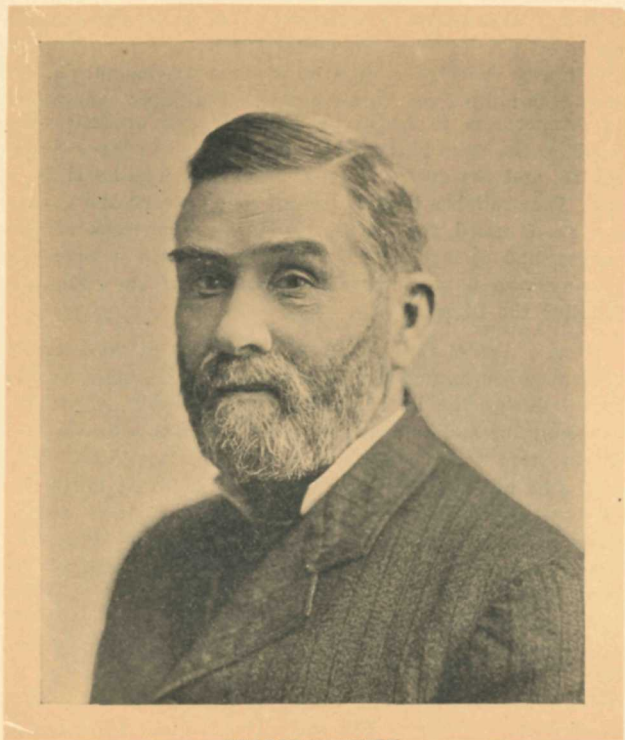
The coming expedition of the Mountaineers' Club of Seattle is looked forward to as one that will add much to the world's store of accurate information concerning this interesting section. This party, as have those preceding it, will enter the range from the Straits side, making the city of Port Angeles the starting point. The route will be up the Elwha Valley, reached by a good wagon road at a point ten miles southwest of the city. Here a good trail, in most part long traveled, leads up the valley to the heart of the delta.

Mount Olympus, the king peak of the system and long regarded as the highest crest on the peninsula, and which is the objective point of the Mountaineers' expedition, occupies very nearly the geographic center of the group. The Elwha Valley route leads directly to its base and the base

camp of the coming expedition, the site for which has been chosen by the advance committee, is located in the valley some ten or twelve miles distant from the mountain, and about fifty miles from Port Angeles. The trip to camp from Port Angeles is to be divided into stages of four days' travel for the main party, which is scheduled to leave Seattle July 24, and the entire distance is expected to be made on foot. The trail has been improved in places, at the expense of a fund raised for the purpose by the citizens of Port Angeles, and it is believed that it will prove a revelation to many who have preconceived notions of the difficulties attending the Olympic trip.

Messrs. Asahel Curtis and W. M. Price, of Seattle, who as advance couriers of the Mountaineers' Club spied out the country during the latter part of May, spent two weeks in the mountains and returned enthusiastic as to what is there held in store for the pleasure of the coming party. They reached an altitude of some 7,000 feet, 1,500 feet lower than the summit of Olympus, and reported the entire country thereabouts under six to seven feet of snow at that time, whereas, late in July and August, it is bare and covered with flora. They were favored with exceptionally good weather. From the base camp to the summit will be a trip occupying the better part of three days for those who attempt the climb. It is expected that the party will be in camp at the base for fully two weeks, taking practically a week to go and the same to come. The committee located several nearby peaks that will be accessible as side trips to those who do not care to essay the main climb.

It is promised that the Seattle party will have within its membership a number of specialists in different scientific lines, department heads and special writers who will be looked to to make the necessary records of their investigations that there may be lasting and valuable results from the outing.



GEORGE H. HIMES

DISCOVERY OF PACIFIC COAST GLACIERS.

George H. Himes.

There has been considerable discussion in past years as to who discovered glaciers on the Pacific Coast. It is claimed that the late General A. V. Kautz, U. S. A., is entitled to the honor, he having mentioned glaciers at the time he ascended Mount Rainier in 1857. Clarence King, of California, has also been accorded the honor. This claim was contested by Mr. Edmund T. Coleman, and the issue was in his favor, as he conclusively proved that he found glaciers at

the time of his first ascent of Mount Baker, in 1868. He left Victoria, B. C., on August 4 of that year, accompanied by Mr. Thomas Stratton, Inspector of Customs at Port Townsend; Mr. Tennent and Mr. David Ogilby, of Victoria, and four Indians, placed at the disposal of Mr. Coleman by General Thomas I. McKenney, Superintendent of Indian Affairs for Washington Territory at that time. The party went to Bellingham Bay and up the Lummie River, and after considerable hard work reached snow line, at an altitude of 5,175 feet, on August 14. During the day's march fog obscured the vision much of the time. At length, however, it cleared away and two magnificent rocky peaks were revealed, which were named Lincoln and Colfax. Between them and somewhat beyond appeared a third one, somewhat higher, which was named after General Grant. Next day all hands remained in camp, but on the 16th, it being clear, the ascent was begun, and glaciers were observed at an altitude of 7,054 feet, where camp was made for the night. On the 17th the ascent was resumed, and more glaciers were discovered, the principal one being named McKenney Glacier, and another the Frontin Glacier, in honor of a lady who, at the time of a previous journey, made Mr. Coleman a present of a beautiful flag, to be placed on the highest point reached. This was Mr. Coleman's third attempt to reach the summit, but the first success. It was 4 o'clock on the 17th when the highest point was reached. The doxology was sung and the flag raised, followed by toasts and a patriotic song. The altitude was determined as 10,613 feet. English maps place the altitude at 10,694 feet, and Captain Lawson, of the United States Coast Survey, made it 10,814 feet.

Mr. Coleman was an Englishman, and prior to 1858 had spent several seasons in Switzerland, where he climbed all the principal mountains, then described his experiences in a work entitled "Scenes From the Snowfields," published in London by Longman & Co. He was an artist and considerable of a scientist. I knew him quite well nearly forty years ago, having first met him in Victoria and afterward in Portland. Our acquaintance was brought about by our moun-

tain-climbing proclivities, I having climbed Mount Hood on August 2, 1867.

Old Fort Nisqually, the Hudson's Bay Company's post, was established in 1833, under the care of Dr. William Fraser Tolmie, a graduate of the great medical University of Edinburg. I knew him well from 1853 to 1864. He was a many-sided man of rare scientific attainments. In 1833 he went to Mount Rainier on a botanizing expedition, and from his diary the following information is obtained:

He left Nisqually August 27, 1833, with horses and pack animals and four experienced Indians. After describing minutely the experiences of each day, on September 3 he finds himself well up on the northern side of Mount Rainier, following up the Puyallup River, and says: "A few small glaciers were seen."

ASCENT OF MOUNT OLYMPUS*.

B. J. Bretherton.

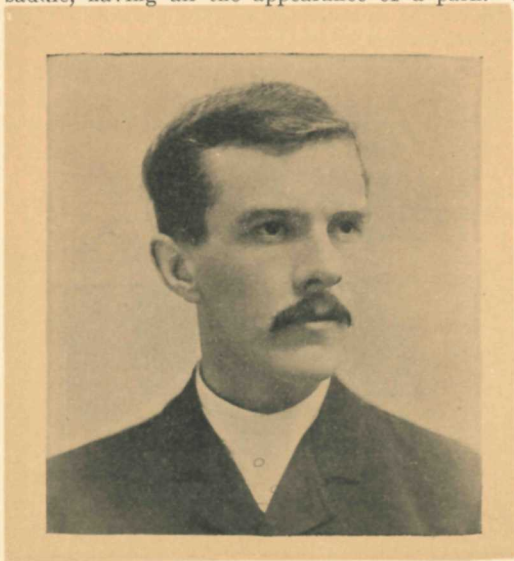
On the morning of September 13, 1890, the writer, in company with Colonel N. E. Linsley, Sergeant F. W. Yates and four men, left headquarters, on the headwaters of the east fork of the Quinault River, for Mount Olympus. They carried with them a copper box and a record book of the Oregon Alpine Club, to be placed on the summit of the mountain. From camp down into the valley was a long and tedious descent, but by 11:30 A. M. we gained the bed of the stream. The valley of the Quinault here is very narrow, hills rising on both sides directly from the water's edge, while the stream itself is only about ten feet wide, very rapid and of a milky color. The valley is all heavily timbered with fir, pine, cedar and yew, while the ground is covered with a thick carpet of sheep sorrel.

After eating lunch we wended our way down the right bank of the river until we came to a stream entering from the north, which we called Fire Creek, on account of a slight accident. Here we camped for the night.

Next day we started up the left bank of Fire Creek and found the ascent to the divide comparatively easy, the only unpleasantness arising from the stings of yellowjackets, of which there seemed more than were needed. That night we

* This article has been partly rewritten from a newspaper clipping, and we do not know to whom to give credit.

camped on a small marsh just under the crest of the divide, and next day gained the summit at 10 o'clock and found ourselves looking down into a splendid valley, which we took to be the valley of the Elwha River. The head of this valley was distant about three miles to the west. Thither we wended our way, and by 4 o'clock arrived on a beautiful level saddle, having all the appearance of a park. A fine,



B. J. BRETHERTON

broad game trail crosses it, making an easy route from the headwaters of the Elwha to the headwaters of the west branch of the Quiniault. This was the only pass through the range that we found, and we called it "Bretherton's Pass." Here we camped, as the range seemed very rough to the north, and we considered it advisable to send out scouting parties.

On the northern end of the pass is a high peak, containing three glaciers, and which is often taken for Mount Olympus. On its side is a large game trail, which we took next morning on our march to Olympus. By 9 o'clock we gained the crest of the ridge, and just in time to see Mounts Olympus and Anderson enveloped in a cloud of mist, which now began to gather about us, and within two hours it had

become so thick as to make traveling dangerous. It began raining, so we made camp near a small clump of trees and waited for the fog to clear, which it did not do until next morning.

September 17 dawned fine and clear, and by 8 o'clock we were on our way over the ridge, which was crossed at an elevation of 5,500 feet. We then climbed down the face of the glacier on its northern slope, coming out on a lower ridge that ran north and south between two tributaries of the Elwha. Down the crest of this ridge we traveled, until by night we had reached the Elwha just above its forks. Here we found signs of a former camp, and picked up a scrap of paper, bearing a recent date. It contained the following original poetical composition:

“Cock Cobin was a liddle bird
 Vat lives oop mid the sky,
 Und Greenbaum vas a lost Dutchman
 Vat soon expects to die.



PLACING THE ALPINE CLUB BOX AND FLAG ON THE
 SUMMIT OF OLYMPUS

“He roamed the Olympies’ vild vide vaste,
 Und stormed the Elwha’s tide,
 Nor drink nor morsel did he taste,
 But oop and onward hied.

“The vild beasts’ gaze did on him dwell,
Und trilled his bones to marrow,
Till happy thought of William Tell,
Und his liddle bow und arrow.

“A robin soon was lying dead,
Und from his blood he drank,
Vich gave him strength to raise his head,
When loo; three hundred yards vas camp.”

Next morning we crossed the stream and again took a northerly course, following a ridge until we came to the foot of a glacier on the southern slope of Mount Olympus, where we camped for the night.

September 19 we started up a long glacier, on which we traveled until 4 o’clock, when we arrived on the summit of the glacier from which the Queets receives its main supply of water. This glacier faces the southwest and is oval in form, about three-fourths of a mile in width, and a mile and a quarter in length. Its eastern end is the highest, and it connects on the north side with the grand glacier of Mount Olympus, which reaches from here to the summit of the mountains, a distance of over three miles, with an average width of about three-fourths of a mile. In all there are fifty-three glaciers that can be counted from Mount Olympus. These glaciers are constantly moving and displacing vast quantities of rock, which makes it dangerous to pass below them. The writer spent several nights this summer on the opposite side of the Quiniault from the great glacier of Mount Anderson, and was often awakened by avalanches that shook the very mountains themselves as they tore onward to the valleys below.

Next morning we climbed out of Pluto’s Gulch on its western side, and, after making our way through a belt of timber, emerged on a beautiful level plateau of about one hundred acres. Great pinnacles of rock were scattered over it, and huckleberries were found in great profusion. On every hand immense fields of ice sparkled in the sun, and in the midst of all the air was filled with the twitter of song birds. It was an inspiration and we called it the “Garden of the Gods.” Here we pitched our tents, then tried to find a route up the mountain. It was no use, so we decided to move to the west and try that.

Next morning we left the Garden of the Gods and made our way over a very rough country, round the northern side of the mountain. While passing through a dense alder swale Private Fisher got separated from us, but as he was an old woodsman we did not feel alarmed, but kept on expecting

him to overtake us. After getting through the swale we followed the bed of a small creek, clinging to the rocks and dragging each other up, until we made the summit of a level bank of snow, in which the creek had its rise, and here found we had made an ascent of 5,000 feet in three hours. That night we camped on the edge of a precipice 5,200 feet deep and saw Fisher's fire away down in the valley, and attracted his attention by firing guns, but he was unable to get to us, and, after trying most of the following day, gave it up and made for the ocean. We were now more than half way up Olympus, and everything was made ready for the ascent on the morrow.

We made an early start on the morning of September 22, and by 9 o'clock the entire party had gained the edge of the grand glacier. From this point Colonel Linsley, Private Danton and myself climbed alone, taking with us the Alpine Club box and flag and camera. We found the best traveling on the western side, as there was a ridge of decomposed



OREGON ALPINE CLUB PARTY DESCENDING OLYMPUS

quartz and slate running along the edge of the precipice, which gave us a better footing than ice. In two hours we had gained an elevation of 7,240 feet, and half an hour later made the summit, where we remained long enough to place the box and take a few pictures. The Alpine Club box is made of copper and contains a book in which future climbers can record their names and describe their trips. There is also a compartment for small trinkets, in which we left the

following articles: One lead pencil, a glove belonging to one of the ladies of the Wickersham party (found by us on the north fork of the Skohomish River), a deck of cards, two army buttons, a beer check, shoe laces, a visiting card and three cablegrams.

Olympus is a double-peaked mountain, entirely covered on the eastern side by a large glacier. The northern slope also contains a glacier, separated from the larger one by a high comb of bare rock. Its southwestern side is a sheer precipice, making the mountain appear from the south as if half of it was cut off. It towers considerably above any other mountain in the range, although its elevation is only 7,550 feet.

NAMES IN THE OLYMPIC REGION.

Admiralty Inlet was named by Vancouver for the British admiralty.

Bellingham Bay was also named by Vancouver; probably for Sir Henry Bellingham, who was knighted in 1796.

Canal de Haro was named by Lieutenant Quimper, Canal de Lopez de Haro, for the Spanish explorer.

Cape Disappointment was so named in 1788 by Lieutenant Mears, an Englishman, then in command of a Portuguese vessel, because he did not find the River San Roque of Hecla.

Cape Flattery was discovered by Juan Perez and named Martinez. In 1778 Captain Cook named it Flattery, "in token of an improvement in our prospects."

Cathlamet was written Cathlamah by Lewis and Clark, and was the name of a tribe of Indians as well as a stream. It evidently comes from the Indian word "Calamet," meaning stone, and is believed to have been given to the river because of its stony bed.

Chehalis, pronounced by the Indians Tse-ha-lis, was formerly written Chickelis. It means "sand," and was applied to the river because of the sand there and to the Indians because they lived on the river. Originally neither the stream nor Indians bore the name.

Clallam was named for an Indian tribe, and was originally written S'Klallam. It is said to be a corruption of the word "Nu-sklaim," meaning strong people. It is also said to come from the Makah name for the Klallam Indians, "Klolub," a clam, and "aht," a man.

Cypress Island was named by Vancouver because of the abundance of cypress trees found there.

Deception Bay was so named by Lieutenant Mears be-

cause he did not succeed in finding the River San Roque of Hecla.

Deception Pass was named by Vancouver.

Destruction Island was first discovered by Heele in 1775 and named Isla de Dolores (the Isle of Sorrows), because



COL. N. E. LINSLEY

seven of his crew were killed there by Indians. It was afterward named Destruction Island by an English captain, who lost a boat's crew.

Foulweather Bluff was named by Vancouver, because of the weather experienced there.

Guemes Island was named by Elisa, a Spaniard, in 1791.

Gulf of Georgia and New Georgia were named by Vancouver, in honor of the then King of England.

Hazel Point was named by Vancouver, because of the hazel bushes found there.

Hood's Canal was named by Vancouver for Right Honorable Lord Hood.

Kitsap was the name of a noted Indian chief.

Klasset signifies a cape, or a point of land projecting into the water.

La Push is Chinook jargon and means "mouth," indicating the mouth of the river. It comes originally from the French word "La Boos."

Makah, or Makkah, signifies a point of land projecting into the sea, or the cape people.

Marrowstone Point was named by Vancouver, because the clay there seemed to be such a rich species of marrowstone.

Mount Baker was named by Vancouver for one of his lieutenants.

Mount Olympus was first discovered by Juan Perez, and named El Cero de la Santa Rosalia (the peak of Santa Rosalia). Subsequently the Spaniards referred to it as La Sierra de Santa Rosalia (the Santa Rosalia range). Captain Mears saw the mountain on July 4, 1788, and named it Olympus, which was adopted by Vancouver.

Mount Rainier was named by Vancouver for Rear-Admiral Rainier, of the British navy.

Neah Bay was named for a Makah chief named Neah, or Dee-ah.

New Dungeness was so named by Vancouver, because of its resemblance to Dungeness in the British channel.

Nooksack is the name of an Indian tribe, but the significance is not known.

Oak Cove was so named by Vancouver, because of finding a few oak trees there.

Penn's Cove was named by Vancouver for a personal friend.

Point Grey was named by Vancouver for Captain George Grey, of the British navy.

Point Partridge was so named by Vancouver.

Point Susan was named by Vancouver.

Point Wilson was named by Vancouver for Captain George Wilson, of the English navy.

Port Discovery was named by Vancouver for one of his ships.

Port Gamble was named for a United States naval officer.

Port Gardner was named by Vancouver for Vice-Admiral Sir Alan Gardner.

Port Angeles, or Port Los Angeles (the Port of the Angels) was named by Don Francisco Eliza in 1791.

Port Orchard was named by Vancouver for a member of his expedition, who discovered it.

Port Townsend was named by Vancouver for the noble English marquis of that name.

Possession Sound was so named by Vancouver, because he landed and took possession on the king's birthday.



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MOUNT STEEL

Puget Sound was named by Vancouver for Peter Puget, one of his men, who discovered it.

Quimper Peninsula was named for Lieutenant Quimper, a Spaniard, who came to the region in 1790.

Restoration Point was so named by Vancouver, because he celebrated the event of the restoration while at anchor there.

San Juan Archipelago was named by Don Francisco Eliza in 1791, for Juan de Fuca, the Greek navigator.

Sequim, or Seguin, is a corruption of the Clallam name for the place, which is Such-e-kwai-ing.

Skokomish is a corruption of the Twana word S-kaw-kaw-bish, pronounced S-kaw-kaw-mish by the Clallam Indians, and was the name of a band of the Twana who lived about the mouth of the Skokomish River. It means "river people," from "kaw," fresh water, and "mish," or "bish," meaning people. The Skokomish word for people is "klowol-bish," and that of the lower Chehalis Indians is "alahmish."

Siwash is Chinook jargon for Indian, and is a corruption of the French word "sauvage," for savage.

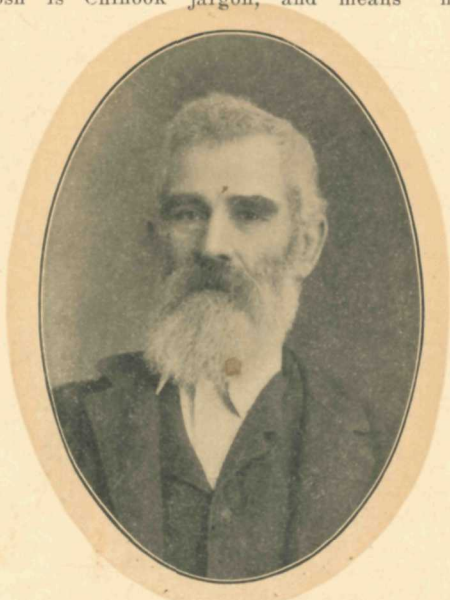
Skookum Chuck is from the Chinook jargon, and means "strong or swift water." Shookum comes originally from the Chehalis word "sku-kum," strong, and "chuck," water, from the word "tl-tsuk," in the old Chinook language, which in Nootka is "chuk," and Clatsop "ti-chukw."

Snohomish is the name of a tribe, but the significance of the word is not known.

Stilaquamish signifies river people.

Strawberry Bay was named by Vancouver, because of finding many excellent strawberries there.

Tatoosh is Chinook jargon, and means "milk," or



COL. B. F. SHAW

"breast." It comes originally from the Chippeway word "to-tosh."

Teekalet, the former name of Port Gamble, means "the brightness of the noontday sun," because the sun at noon shines with peculiar splendor on Port Gamble Bay.

Tejeda (Texada) was named by Don Francisco Elisa in 1791.

Tulalip means a wide bay with a small mouth.

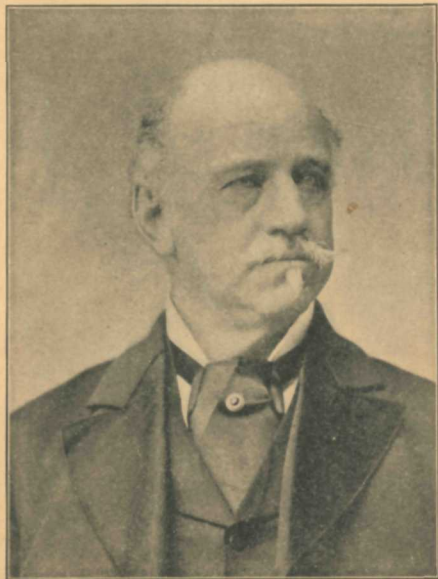
Tumwater is Chinook jargon and means waterfall. It originated from the English word water, and "tum," by onomatopoeia, as the sound of the waterfall reminded people of that sound. So "tum-tum" from the same language signifies heart, and was given because the sound of the beating heart reminded them of such a sound.

Twanais is a corruption from Too-au-hu, the original name of the tribe of which the Skokomish Indians are one band, and is said to mean "a portage." A short portage across the head of Hood's Canal saves a water trip around the peninsula by way of Port Gamble.

Vashon Island was named by Vancouver for Captain Vashon, of the British navy.

Whidbey Island was named by Vancouver for a member of his expedition, who first circumnavigated it.

Wishka is a corruption of the Chehalis word "hwishkahl," meaning stinking water.



H. D. COCK

FIRST ASCENT OF MOUNT OLYMPUS.

George H. Himes.

I recently noticed in some of the present-day publications an item purporting to give the first ascent of Mount Olympus, the highest point in the Olympic range, and fixing the time as of comparatively recent date. I regret that I have in some way mislaid the item, as I would like to be exact in my reference to it. I can say this, however, the statement is incorrect.

The first ascent of Mount Olympus was made in the summer of 1854, and it is believed during the month of July. A party composed of Colonel Michael T. Simmons, F. Kennedy, Eustis Huges, a surveyor; Henry D. Cook, B. F. Shaw, woodsman, and four Cape Flattery Indians, one of whom was named "Capt. Jack," went out on a private exploring expedition, and at length found themselves in the vicinity of Mount Olympus. The matter of making the ascent was discussed, and finally Shaw and Cook decided that they would make the attempt, which was successfully accomplished the following day. They were accompanied by two Indians, the remainder of the party not caring to undertake what seemed to them an extra hazardous expedition.

In this connection it may not be out of place to note the naming of Lake Cushman, a beautiful body of water at the foot of the Olympic range. It was named in 1852 by B. F. Shaw, after a personal friend of his—Orrington Cushman, a noted woodsman of early days, and a famous lumberman, better known as "Devil Cush." It was at this time that Cushman discovered white pine in the Olympics. He was a native of the "Pine Tree State," and his long experience in the Maine woods enabled him to detect it in these primeval forests of the Far West.

"Referring to statements in an article in Steel Points, credited to the Oregonian, which said that S. L. Brooks was with the first party who climbed Mt. Hood, that gentleman says he has never climbed the mountain, but was with a party consisting of Henry Coe, Carey Johnson, Edwin Eells, Julia Johnson and Kate Aubert, who climbed Mt. Adams August 6, 1866."—The Dalles Chronicle.

No such statement ever appeared in Steel Points, either credited to the Oregonian or elsewhere.

FLORA OF THE OLYMPICS.*

L. F. Henderson.

"Parturiunt montes, nascetur ridiculus mus." Shall I be able to blame the reader if, after the perusal of this very meager report, but extravagant heading, Horace's caustic remark occurs to him? I have been laboring hard with this heading, trying to reconcile my desire to give a very brief announcement with a greater desire to impress upon my readers the fact that it is a very incomplete report, partly due to my necessarily short stay with the party, partly to the rather surprising similarity of the flora of this region to that of the Coast and Cascade Ranges. In this latter fact I was much surprised, perhaps without reason. I had thought that a pile of mountains so isolated, so nearly surrounded by water, must have a remarkable endemic, or peculiar flora. But in my wild expectations that new forms, if not new species, or even new genera, would be peeping out from the crevices of every succeeding mass of rocks, smiling down upon me from every cliff, or being crushed by every other step upon those green, sunny banks, which always border the perpetual snows, I forgot, or perhaps would not remember, that the Olympic Mountains are but the gigantic and chaotic ending of the Black Hills and Coast Range; that they are but sixty miles distant from the Cascade Range; that birds have flown, that waters have carried; that winds have blown for ages past, as they are doing today, all assisting in the constant dissemination of seeds; that, lastly, the same glacial age acted upon the Olympic Mountains that did upon the Cascade Range, scattering and leaving a largely similar flora on both ranges as it disappeared toward the north. I might have found many treasures could I have stayed the whole summer with the party, which the limited time at my disposal forbade my finding. I might have found, had not a large collection made after my return by one of the soldiers been lost by some unaccountable means, that the flora is much more varied than I think it at present. Furthermore, it may be found that I am greatly mistaken in my statements, when more careful research shall have disclosed all that continuous pile of rocks holds within its inhospitable recesses, when several as energetic young explorers as Charles V. Piper of Seattle shall have gone over the ground as carefully as he did after my return this summer. I had hoped to excite envy in the breasts of many of my botanical friends by my rare "finds." I see on

*This list, as originally given, was according to the arrangement of Bentham and Hooker, but has been altered by Mr. Martin W. Gorman, to that of Engler and Prantl, to conform with present botanical usage. The lichens and mosses are given as in the original list.

the table before me, as the result of my six weeks' "cruise," two or three possibly new species. I had hoped to write a paper which should attract the notice of many scientific men to this flowery El Dorado; I find that I must content myself with the description of a flora trite in the extreme to those who are acquainted with the plants of the northwest. If, however, I shall have established an acquaintance between some of our pretty, modest flowers, or grand trees, and any lovers of Nature technically unacquainted with them; if I shall have brought home to any heart those beautiful lines of Bryant's *Thanatopsis*:

"To him, who in the love of Nature,
Holds communion with her visible forms,
She speaks a various language. For his gayer hours
She has a voice of gladness, and a smile
And eloquence of beauty; and she glides
Into his darker musings, with a mild
And gentle sympathy, that steals away
Their sharpness e'er he is aware,"

I shall take pleasure in thinking that these six weeks were not lost time.

After a vexatious, unavoidable, but none the less aggravating delay to the writer, who had but a limited time at his disposal, the little steamer *Louise* landed us, men, mules and merchandise, on the beach at Lilliwaup, then a mere landing place, now a "flourishing townsite" (God save the mark!), on the beautiful and romantic Hood's Canal, and about eight miles from Union City. Here was "the best and nearest trail to Lake Cushman," as we were told by the veracious officers of the boat, who, we were afterwards informed, had quite an "interest" in the townsite, and who were, naturally, we may imagine, entirely opposed to our landing at Hoodspert, four miles further down the canal, and from which "rival town," as we afterwards found out, there was a beautiful and well cleared trail to Lake Cushman. May the officers of that boat and the "townsmen" of that first "site" be forgiven for the vexation, exasperation, delay, disappointment, and, to our animals, suffering, that first eight or ten miles caused us and them, coming as they did from the fresh pastures and "dolce far niente" life of unbridled license enjoyed at the Post at Vancouver.

While the packs were being sorted, the different parties assigned their duties by the Lieutenant, and the animals fed and packed, I amused myself by seeing how many plants I could collect in a radius of one hundred yards. I first collected those which had "escaped from cultivation," as our dear and common teacher Dr. Gray would have quaintly remarked; then those camp followers of the cultivated army,

following as they do wherever man tills the ground, and, lastly, the indigenous or native plants. Amongst the first were the two clovers, white clover (*Trifolium repens*), and red clover (*T. pratense*), timothy (*Phleum pratense*), June grass (*Poa pratensis*), orchard grass (*Dactylis glomerata*), soft grass (*Holcus lanatus*), and foxglove (*Digitalis purpurea*); with its various colors, white, blue, pink and purple. It is remarkable how this plant takes possession when once well started. Indigenous, I certainly cannot think it as some do, for I have never found it save along road sides, paths, or running wild about old homesteads. I have, however, been frequently and pleasantly informed that I was approaching a home a mile or so before I reached it by meeting these handsome flowers waiting for me, as it were, by the road or by-path. Amongst the second class, the introduced "weeds," I collected the common little yellow clover (*Trifolium procumbens*), sow thistle (*Sonchus asper*), mouse-ear chickweed (*Cerastium vulgatum*), "little" cranesbill (*Geranium pusillum*) curled dock (*Rumex crispus*), ribwort or rib-grass (*Plantago lanceolata*), plantain (*P. major*), cheat or chess (*Bromus secalinus*) (how often have I heard the remark by the more ignorant of the farmers of the Willamette Valley, "I planted that field in first class winter wheat, and it came up all cheat!"), Yarrow (*Achillea Millefolium*), false blue-grass (*Poa compressa*), hedge mustard (*Sisymbrium officinale*), lamb's quarters (*Chenopodium album*), sheep sorrel (*Rumex Acetosella*), door-weed (*Polygonum aviculare*), self-heal (*Brunella vulgaris*), chickweed (*Stellaria media*), cup-weed (*Cotula coronopifolia*), a ballast-waif from South Africa, which has made itself "at home" along the salt marshes everywhere in the Sound country, goose grass (*Poa annua*), shepherd's purse (*Bursa Bursa-Pastoris*), common vetch (*Vicia sativa*), nettle (*Urtica Lyallii*), thyme-leaved speedwell (*Veronica serpyllifolia*), and "Mother Carey" (*Matricaria matricariodes*).

The third set, the native plants, yielded me in trees first, *Pseudotsuga mucronata* ("red or yellow fir" vernacularly, but more properly Douglas Spruce). This tree is not a true fir as may be known from its pendant cones which fall from the tree in one piece, like the cones of the pines. In the true firs, the cones stand erect, or nearly so, and the outer pieces (scales and bracts) fall off from the central column, which remains perpendicular upon the branch for years, the erect "spikes," presenting a most peculiar appearance to any daring climber who will mount to the top of one of our white or balsam firs in the late fall, after the cones have—what shall we call it—moulted? Next I found the hemlock (*Tsuga heterophylla*), with its soft delicate leaves and handsome,

symmetrical trunk. This tree is one of our grandest evergreens. Some of the trees of this species whose girth would not be far outdistanced by our large Douglas Spruces, were found in the rich, alluvial forests about Lake Cushman. Near by and always present except upon the rocky slopes, was the western arbor-vitæ, called commonly "cedar" (*Thuja plicata*). These trees about Lake Cushman, together with the Douglas Spruce, are of gigantic proportions, rivalling the famed redwoods of the Californian forests. The size of some of the fallen monsters of these two species can best be realized when you have to saw one after another out of the trail to make a way for your pack animals, or when occasionally one has to be felled over some chasm as a bridge for yourselves, or, possibly, for your animals! "Hic labor hoc opus," you sigh with Aeneas of old! I have before me at this instant the photograph of a cedar stump which attracts widespread attention near the town of Snohomish, Upper Sound. It is nearly eighteen feet in diameter at the ground, is planked over and easily accommodates a quadrille set with their accompanying musicians. A fir tree near Olympia was cut this year which, as I am informed by truthful parties, "scaled" 12,460 feet of lumber. Add to this, according to the lumberman's measure, one-quarter for waste, and this single stick contained 15,575 feet of wood. It was fifty-two inches in diameter at the smaller end, seventy-four at the larger, and was 102 feet long without a visible knot. I myself have seen much larger trees of this last species, but it is rare to find any of quite such regular proportions, or so nearly columnar. Near by was found the yew. To one acquainted with the way this plant appears in the Eastern States it might seem a misnomer to call this a tree. It is hardly ever more than a bush in the East, but our species (*Taxus brevifolia*) reaches a diameter of three or even four feet in moist, dark ravines. Its wood is extremely tenacious and almost as heavy as mahogany, at least when green. On the shady, moist slopes of the Olympics it forms, at times, such dense thickets that it is almost impossible to force or even cut a way through, especially when bent down to almost a trailing condition by the weight of winter snows or the violence of spring avalanches. Near by and always to be found in moist ground along the shores of the Sound, was the white fir (*Abies grandis*). This is a beautiful tree, with its long leaves, regularly two-ranked, glossy and dark above, light gray or white beneath—its trunk white and regular till well advanced in years—its cones clustered at the summit of the tree, looking like bunches of erect red bananas, at times gemmed with drops of balsam which glisten like diamonds in the sunlight. To the lumberman, however, it stands the tree to be avoided, for its wood is probably the

most worthless, foot for foot, of any of our western trees. Near by, and always present along the Sound banks, just above high-water mark, was found a red alder (*Alnus Oregona*). The common name is a misnomer, for the only time it ever looks red at all is when the reddish catkins are swinging on the trees in early spring. White is more proper on account of its white bark; possibly it may have derived its name from the wood, which assumes a reddish tinge when cut and exposed. Near at hand was the large-leaved maple (*Acer macrophyllum*), common all over our hills, and yet always a favorite from its generous foliage during the hotter months. Its wood is handsome and is highly esteemed by furniture dealers on this coast. The "burls," formed on these trees by various causes, furnish some of the most beautifully marked wood and capable of the finest polish of any found on the coast. Near at hand, and almost always in the company of the latter, was to be seen the vine maple (*Acer circinatum*). This plant in moist, rich bottoms, well merits its name of "vine," for if any plant, pretending to be a tree, ever simulated more the "viny" nature, I should like to know what it is. Furthermore, does the mountaineer know a more exasperating tree to deal with when engaged in cutting trail? Here is a clump of them bordering upon or overhanging this soft, miry-looking spot in your path. They are growing thickly together and offer a complete barrier to your further progress, unless hewn away, sprawling out as they do in every direction, but generally down hill. With your keen axe or brush-hook you strike the first one a strong, sharp blow, just where it commences to bend, and your tool goes through it as if you were cutting a piece of cheese. "Very well," you mutter, "if it is all accomplished like that, this little job will not last long." Ah, little do you know this Machiavelli among trees! You attempt to lift it out of your path, and you find that its top, some thirty feet away, has taken root and is firmly fixed in the ground. A half dozen blows are now required to cut in two the limber, lively, snake-like remnant. You throw it out of the trail and strike another; you find that its elasticity has been by no means lost on account of its apparently lifeless posture, and the severed end thwacks you over the shins or in the face. You slash another, and succeed in cutting it through just far enough to have the remaining whip-like portion split down to or below the surface of the ground, where a dozen blows among the stones or rotten logs finally severs it. You think they are all out of the way now, and lead over the first mule, which, in plowing through the quagmire, loosens a before unseen stem. It rises, like the typical Banquo's ghost, just under the legs of your mule. Mule be-

comes entangled in its folds, and rolls over, burying your pack deeply in the soft mud.

Everywhere common along the clay banks of the Sound grows a small tree (which I there found abundant), the white elder (*Sambucus glauca*). This plant is called "white" because of its fruit. This is, when ripe, really black, but so covered with a "bloom" is it that it appears always whitish, at times nearly snow-white. A pretty tree it is with its flat cluster of cream-white flowers in late spring, or in fall its handsome fruits, which remain on the stems till late in the winter, if not taken by the birds. The berries are held in good repute among our housewives, on account of its pie and wine-producing virtues. Close at hand was its blood relative, the red-berried elder (*Sambucus callicarpa*). This hardly ever approaches the proportions of a tree, but rather a large shrub, while the former attains an occasional diameter of two feet. The red-berried elder is not a particularly pretty plant, except when covered with its pyramids of scarlet fruit. This latter is intensely disagreeable to the taste, but seems to be greatly relished by wild pigeons, for their diet is almost entirely confined to this fruit where it grows plentifully.

Next I found a not very common tree, Pursh's buckthorn (*Rhamnus Purshiana*). This seldom grows larger than a large bush, though I have occasionally seen it a foot and a half in diameter in the salt water marshes back of Long Beach, Ilwaco. Its large, handsome leaves, its smooth, mottled trunk, and its medicinal properties save it from the charge of insignificance.

Hard by I came upon one of the commonest of our small trees, the early willow (*Salix Scouleriana*). If the law of contraries holds good, if the most delicious odors are compounded from the most disagreeable substances in the famed city of Cologne, as is said to be the case, there should be some virtue in this tree, sanitary or odoriferous; for a more fetid, horrid smell can hardly be imagined than that from the broken twigs of this tree in early spring.

In strong contrast with this Mephistopheles among trees stood near the Ithuriel of our northern woods, the western flowering-dogwood (*Cornus Nuttallii*). This tree is never commonplace, whether putting forth its green buds in the early spring, whether lighting up the forests with its captivating contrasts of light green leaves and milk-white flowers, or whether in fall it dyes the woods with the purple, saffron, or crimson of its leaves, and the scarlet of its fruit clusters. I have traveled through miles of woods, between Portland and Eagle Creek in Clackamas County, which have been rendered entrancing from the beautiful effects of its flowers and the intoxication of their delicious odor. I know of no scent so

far reaching and yet so delicate, unless it be that of the wild grape or the yellow jasmine of the Southern woods. The wood is very fine-grained and would "work up" well into smaller articles of utility under the turner's lathe.

The last tree found here was the red-berried cherry (*Prunus emarginata villosa*), noticeable from its small, smooth, slender trunks, its medicinal properties and wood fine for the turner.

The salt marsh near by, and the shores of the canal, yielded me quite a number of plants, very few of which, however, are in any degree attractive, save to the enthusiast. These were sand spurrey (*Tissa rubra*), cud-weed (*Gnaphalium purpureum*), *Gaertneria bipinnatifida* (a kind of trailing burdock, common along the beach from Fort Canby to the recesses of the Sound), salt marsh plantain (*Plantago maritima*), silver-weed (*Argentina Anserina*), a pretty plant with its large, yellow flowers, large, compound leaves of a bright green above and silvery below, *Chenopodium rubrum*, *Puccinellia distans*, *Orthocarpus castilleioides* (a little plant which saves itself from being overlooked by the pretty white tips to its bracts), *Ranunculus Cymbalaria*, a delicate little trailing buttercup, common in salt marshes as well as along the borders of pools in Eastern Washington and Oregon, and *Sagina occidentalis* (?). This plant I mark with a question mark, for though returned me as this species by an eminent authority, I cannot but question it. *Sagina occidentalis* away from the coast, that is, as we know it commonly about Portland and throughout the Willamette Valley, is a very delicate, upright thing—so delicate as only to be seen when the head is bent toward the ground, for it seldom grows over an inch in height. The sea coast form, if form it be, grows flat upon the ground, and forms a mat two or three inches broad, when exposed to the salt spray along the rocky points that extend into the ocean. I am even inclined to believe that it is a biennial, if not of longer duration. Near at hand, rising two or more feet out of the soft mud was the arrow-grass (*Triglochin maritimum*), and mingling with it arose the graceful and beautiful hair-grass (*Deschampsia cespitosa*), its plumes waving with every breath of wind, and sending out a sheen of gold, bronze, purple or green from its ever-varying tassels. It is a commoner below, but from the middle to the tip of its plume, I know of no more aristocratic grass. When you stand in some hollow or in a boat at low tide in a locality where this plant covers hundreds of acres, as it does at Tillamook Bay—when the sun is shining brightly and the sky is of a deep blue—when the wind is coming in strongly from the ocean and acre after acre billows under the passing breeze—when each clump sends forth its own peculiar color, but all

equally glistening—I know of nothing more peacefully beautiful nor more like fairyland. The only other marsh plants here seen were a beautiful wild clover (*Trifolium involu-cratum*), the most beautiful with which I am acquainted in this country of wild clovers, a delicate little umbelliferous plant (*Lilaeopsis occidentalis*), sheep fescue (*Festuca rubra*, var.), and the omnipresent skunk cabbage (*Lysichiton Kamtschatcensis*). This plant is not to be despised, for its yellow chalice light up the otherwise ugly swamps in early spring, its green and generous leaves are as handsome, if not so large, as those of the banana, its fruit and leaves are eagerly eaten by horses, hogs, deer or bear, while its odor is not nearly so overpowering as its name, whether English or Latin. The last marsh plant was the peculiar burr-reed (*Sparganium simplex*).

The hill-side plants were very numerous and kept me busy for an hour or more. First came the gorgeous Turk-cap lily (*Lilium Columbianum*), with its inverted and turban-like flowers, yellowish red and mottled with brown; *Psoralea physodes*, an inconspicuous plant, nearly a foot high, bending over or reclining, and covered with an abundance of small, cream-colored flowers of the ordinary pea type; *Osmaronia cerasiformis*, the representative of the almond sub-genus on this coast, was just ripening its fruit near by. This is a pretty bush, with its bright, elliptical leaves, racemes of drooping white flowers, and later its handsome clusters of indigo-colored fruit, which contrast prettily with their scarlet stems. The fruit is eaten with avidity by birds, bears, Indians, and occasionally by white people. Then I collected our commonest western lyme-grass (*Elymus glaucus*), growing too isolated ever to become valuable as a forage-plant. The more noticeable among the other plants were red-flowering currant (*Ribes sanguineum*), black-berried gooseberry (*Ribes divaricatum*), monkey flower (*Mimulus Langsdorffii*), a handsome plant, with its large, irregular, funnel-shaped flowers, bright yellow and mottled with brown within; musk plant (*Mimulus moschatus*), prized as a potting plant on account of its remarkably strong, musky odor; "tall" thistle (*Carduus edulis*), a very variable plant—sometimes nearly destitute of prickles and tall, reaching ten or twelve feet along the streams tributary to Yaquina Bay; at others low and very prickly as usually found along the sea-shore, the young shoots said to be eaten with a relish by the western Indians; the three brambles, red-cap (*Rubus parviflorus*), a handsome bush, with its wide soft leaves, snow-white flowers and red fruit; black-cap (*R. leucodermis*), and dew-berry, or, as it is commonly called, wild blackberry (*R. macropetalus*); the delicate and sweet-scented yerba buena of the California Spaniards (*Micromeria*

Chamissonis), its dried leaves used by many as a tea plant; the delicate little enchanters' nightshade (*Circaea Pacifica*); the red berried and evergreen huckleberries (*Vaccinium parvifolium*, and *V. ovatum*), the fruit of the former tart and pleasant, and a splendid substitute in uninhabited districts for puddings and pies; the second yielding a delicate and delicious berry, found in great quantities along the ocean or Sound country, and a staple article of food and sale among the Indians, the fruit lasting fresh and good until December or January, and quantities being consumed in the cities of the Sound; the snowy everlasting (*Anaphalis margaritacea*), four fine ferns—deer-fern (*Struthiopteris Spicant*), its fertile fronds towering above the sterile like the protecting antlers of the buck over the lesser herd of fawns and does; the beautiful maiden's hair (*Adiantum pedatum*), with its smooth stems, glossy-black or bluish, and its delicate drooping fingers or divisions to the frond; the armed shield-fern (*Polystichum munitum*), a graceful plant especially from a distance; its dense cluster of bending fronds looking like some inviting foot-stool; the lady-fern (*Athyrium cyclosorum*), always of graceful form, whether rising but a few inches along some mossy rill-bank, or towering up from some rich swamp to a height of six or seven feet, when it remarkably resembles *Dryopteris Filix-mas*. Next flamed up the tall stalks of the giant fire-weed (*Epilobium angustifolium*), always at hand the year after a fire in the forests, though how it gets there so quickly is a mystery to the scientific world, its pink-purple flowers making a mass of color where it occurs abundantly; the modest little western blue-bell (*Campanula Scouleri*), though "bell-flower" would perhaps be more appropriate to this species, since but a delicate and varying shade of blue dyes its otherwise white flowers, as if you had by chance mixed a little bluing in a bowl of milk or white paint, and taking thence a spoonful had made a flower; the dark trailing vines of the kinnikinick (*Arctostaphylos Uva-Ursi*), its berries, a beautiful red, contrasting strongly with the dark green of its leaves, the leaves themselves being dried and smoked by the Indians, and (shall I confess "suba rosa"), no less eagerly by many of our party as their store of tobacco decreased; our two wild roses (*Rosa Nutkana*, and *R. gymnocarpa*), the first the analogue of the Eastern *Rosa blanda* or thornless rose, except that it will not do to imagine ours "'thornless," for with this idea in one's mind, one might get into a bad "scrape" if he came in contact with its terrible, hooked thorns; the second a delicate, little rose, much smaller and generally lighter in color than the last, its branches sometimes perfectly smooth, but generally thickly beset with straight, harmless prickles; the wild pea (*Lathyrus polyphyllus*), a fine forage plant in

open woods where better ones are lacking; close at hand and scrambling over bushes, ground, old logs or fences, the black-pea (*Vicia gigantea*), so called on account of the coal-black color of its pods when ripe; American vetch (*Vicia Americana*), was found near by; the low strawberry (*Fragaria Chiloensis*), grew upon the open clay-banks; in the fields and open ground, the tar-weed (*Madia racemosa*), was everywhere; too common for easy locomotion along the trail was the salal (*Gaultheria Shallon*), the fruit of which forms a staple article of diet among the Coast Indians, occurring as it does in great profusion, and being not at all unpalatable (though with a tinge of the Indian or Chinese in its flavor!); lastly, the peer of any of them, though modest withal, the twin-flower (*Linnaea Americana*). Many think our great master, Linnæus, should have had his name identified with a grander member of the plant-world. To me it is peculiarly appropriate, representing the purity of his life in the beautiful mossy banks where it is found, his unassuming manner in its bowed heads, and the sweetness of his disposition in the delicious fragrance it exhales. I know of nothing more refreshing than, when tired with the long trail and heavy pack, to throw oneself full length upon a bank covered thickly by this little vine, and with head pillowed in its soft embrace, drink in the "honeyed nectar" of its scent, and view the blue sky or masses of snowy clouds through the overarching branches of the firs. Along the shaded rills were several other plants more or less remarkable. These were the spring beauty (*Claytonia Sibirica*); bishop's cap (*Tiarella trifoliata*), its ripened pods looking remarkably like the caps worn by the popes and bishops of old; the silver leaf (*Adenocaulon bicolor*), the dark, smooth, green upper surface being wonderfully different from its satiny under surface; avens (*Geum macrophyllum*)—perhaps we should call it the "little bayonet plant," since the ends of the styles are so bent to one side as remarkably to resemble a mass of fixed bayonets; the magnificent goat's-beard (*Spiraea Aruncus*), its tall tassel of minute white flowers lighting up the dark dells or shady banks; near by the hazel (*Corylus Californica*), its green fruit clusters covering the ends of the branches and containing their nearly ripe nuts.

These were the more conspicuous plants; the inconspicuous were many and need only be mentioned—three bed-straws (*Galium triflorum*, *G. trifidum*, and *G. aparine*); tall chick-weed (*Alsine borealis*), two Epilobiums (*E. coloratum*, and *E. minutum*), *Agoseris laciniata*; the two wood-rushes (*Juncoides glabratum*, and *J. parviflorum*); speedwell (*Veronica Americana*), *Oenanthe Californica*, *Ranunculus Bongardi*, *R. Bongardi Greenei*, the smallest flowered butter-cup; white-flowered hawk-week (*Hieracium albiflorum*), sweet Cicely

(*Washingtonia purpurea*), western tall dock (*Rumex occidentalis*), five bog rushes (*Juncus tenuis*, *J. effusus*, and var. *hesperius*, *J. ensifolius*, *J. bufonius*); several grasses, the graceful *Trisetum cernuum*, *Festuca subulata*, *Agrostis microphylla*, *A. exarata*; wild barley (*Hordeum nodosum*), a handsome nodding brome-grass (*Bromus eximius umbraticus*), and *Cinna latifolia*; a bull-rush (*Scirpus microcarpus*); one sedge (*Carex stipata*); two mosses (*Polytrichum juniperinum*, and *Bryum* sp.); and a lichen (*Cladonia furcata*).

Certainly no one can say from this showing that our flora is poor. It would look so to one not intimately acquainted with it, on account of the lack of color or size in the flowers of Western Washington and Oregon. Everything in the plant kingdom seems to be overpowered by the unending, majestic but gloomy fir forests that cover plain, valley and mountains to far up their slopes. Even the birds lack the merriment of the songsters of Eastern woods, and a certain plaintiveness or harshness pervades their notes. Far different is it with the flowers of Eastern Oregon and Washington, or with those that bloom above the timber line on our higher mountains. Life is short with them, whether from the dry, hot climate of the country east of the Cascade Range, or from the short summer natural to the high altitudes in the neighborhood of perpetual snows. Nature is prodigal, especially in the latter regions, with her paint-pot, and gorgeous colors meet the traveler at every step.

Leaving the larger number of the expedition with the "mule-train," and preceded by another party composed of axemen and hunters, I started along the "fine trail" to the lake, which I anticipated reaching in about three hours, as it was described to be about five or six miles distant, and a botanist doesn't travel fast when there is anything to be collected. I started at half past eight o'clock, alone and with no lunch in my pocket, and reached the lake after a slow but continuous march of ten hours and a half! The mule-train reached it in installments at the end of the second day! After the first half mile the trail commenced to ascend the hills very abruptly, and a mere half hour's travel brought a great change in the flora. As I toiled up the steep, sunny path, the first plant not previously met with was the manzanita (*Arctostaphylos tomentosa*) of the northern slopes and plains, now collected in the unsatisfactory state of green fruit. Next the common prince's pine (*Chimaphila umbellata*) was very abundant, its waxy, whitish flowers always appearing rather out of place in the midst of the dark, leathery leaves. Scattered here and there were the bright, handsome stems of the madrone (*Arbutus Menziesii*). This tree well merits the praise bestowed upon it by Bret Harte, for though it does not grow as large

as in Middle California, it occasionally reaches a diameter of two feet, and when the outer loose bark has fallen off, as it often does, exposing the smooth, bright cinnamon color of its inner bark, when the deluge of pearly flowers lights up the glistening large leaves, or the ripened fruit causes the whole tree to look like a great tongue of flame, it is a picture in itself. Next I was surprised to find a bush generally found high up in the mountains and along creeks, *Pachystima Myrsinites*. Its growing in such a location convinced me more firmly than ever that this plant is destined sometime to be largely used, and to become a favorite when used, as a border to walks in handsome grounds. As the firs grew thicker, the beautiful and fragrant false Solomon's seal (*Vagnera amplexicaulis*) raised its white clusters of flowers, and near at hand was the Western wintergreen, *Pyrola bracteata*, a very unmeaning name, but the only one it has. Then a still greater surprise was in store for me, for here was the elk-grass (*Xerophyllum tenax*) in great profusion. This striking Liliaceous plant had never before been found by me at such low altitudes. It is most frequent upon our snow mountains just as one is emerging from the timber and nearing the snow line. It is a wonderfully handsome plant with its mass of long, gray, recurved leaves, which are as tough as leather and cut like a knife—its long stalk shooting upward as the flowers gradually expand to a height of three or four feet, and surmounted till late in the season by a tuft of snow-white flowers, which are constantly renewed by fresh ones higher up as those below wither away into the fruiting stage. Never on the whole trip did I so miss the camera, which should have been with us (and arrived after I had left the party) as when I came upon whole fields of these plants several weeks later, near the snow-line and just in their prime. It is hard, when looking upon a whole "park" of these plants to realize that they have not been planted by the hand of man and tended by his care. Next I found the service-berry (*Amelanchier florida*) and the star-flower (*Trientalis latifolia*).

Passing from the hill into a ravine, I was again surprised by finding at so low an altitude the Western white pine (*Pinus monticola*). This handsome tree, with its moderately long leaves and narrow worm-shaped cones. Its wood is soft and of a fine quality, but the scarcity of the trees forbids its ever becoming marketable, or in any way rivaling its prototype, the white pine of the Michigan and Maine forests. Near at hand was the "sweet herb" (*Achlys triphylla*), as good a thing to put in a "clothes press" or bureau to scent linen as anything that I know.

In a dried lakelet, where I threw off my pack to rest, and the floor of which was thickly carpeted with the handsome

moss *Fontinalis Neo-Mexicana*, I found the marsh violet (*Viola palustris*) in profusion, though now in fruit, the sweet two-leaved Solomon's seal (*Unifolium bifolium kamschaticum*), and then a fern I had never seen growing in this country before, though common near Seattle—the moonwort (*Botrychium silaifolium*), the hard-hack (*Spiraea Douglasii*), and one of the handsomest, when not too old, of our sedges, *Carex Sitchensis*. Then came the pride of Hood's Canal, as it is of many other places, the beautiful pink-flowered Rhododendron (*R. Californicum*), still in flower though past its glorious prime. The firs then grew denser and higher, though the quality was still poor and the trees small. Here began to appear in great profusion mosses and lichens, only the most remarkable of which I shall mention here, or elsewhere in my narrative, as the description of them would but tire the general reader. One of the most noticeable mosses of our country, and here abundant and unusually well-fruited, is *Hypnum splendens*, its frond-like sections fern-like and reproducing themselves from near the top, year after year. Here also was another *Pyrola* (*P. picta* var. *dentata*), and high goat's-beard, or arrowwood (*Schizonotus discolor*), a beautiful bush when in flower, its cream-white small flowers hanging in clusters like the grape, while its straight, tough shoots form shafts for the arrows of the Indian, or tips for the rods of Isaac Walton's disciples. Then appeared the peculiar "barber's pole" (*Allotropa virgata*), an Ericaceous plant, its white stems regularly striped with winding bars of red up to and among its white or pinkish flowers, with which latter the red-brown anthers form a striking contrast. Sparingly appearing was the other prince's pine (*Chimaphila Menziesii*), a much more delicate and pretty plant than *C. umbellata*.

Soon on every hand occurred an orchid, the rattlesnake plantain (*Peramium decipiens*), from the mottled leaves of which the name was probably derived, though some say the Indians use the plant as a remedy for the bite of the rattlesnake. Then the common wood-rush (*Juncoides campestre*) put in an appearance, and next, one of our most beautiful ferns, the spiny shield-fern (*Dryopteris spinulosa*). The common wake-robin (*Trillium ovatum*), was just coming into fruit, while the two mosses (*Hypnum lorcum*, and *H. triquetrum*), covered the ground as with a carpet. On the borders of a swamp occurred the Liliaceous plant (*Disporum Oreganum*), and in the swamp itself were the nine-bark (*Opulaster opulifolius*), the beautiful trailing pine (*Lycopodium clavatum*), whose stems are such a favorite in the New England States for decorating during Christmas, the twist-stalk (*Streptopus amplexifolius*), and the dreaded "Devil's walking-club" (*Echinopanax horridum*). This plant, about

five or six feet high ordinarily, is covered on stem, leaves and flower clusters with long, fragile prickles. When one carelessly presses through a clump of these plants, the prickles enter the flesh and break off, and, being of a poisonous nature, cause swellings which are painful, if not at times dangerous. On returning to camp late one evening, being unable to tell one kind of bush from another in the darkness, we passed through quantities of this bush. Our knees were filled with the troublesome prickles, though we were quite thickly dressed, and for a week or more to kneel or sit was torture.

As the woods grew deeper and the ground richer, an occasional bunch of the strange, ghostly Indian pipe (*Monotropa uniflora*), was just appearing above the ground. On my return, six weeks later, it was in its prime and most abundant. With it, and earlier by a month, was the brown Indian pipe (*Monotropa Hypopitys*), and with it grew a single specimen of the strange Orobanchaceous plant (*Boschniakia strobilacea*), the specific name of which is very good, for nothing more like an open pine cone ever existed, unless it were another pine cone. Then appeared another of this strange set, the leafless *Pyrola* (*P. aphylla*), and then another, Merten's coral-root (*Corallorhiza Mertensiana*), sending up its numerous shoots to the height of a foot and varying in color from pure white to rose-pink or purplish-brown. A strange crew they are, these sun-despising, fungous-looking plants! Plainly do they show us that the forests, dark and shadowy even in the midst of a sunny day, render it necessary for them to live differently from the majority of plants. The lack of sunlight and consequent absence of green coloring matter, or chlorophyll, show them to be, in character, the "tramps" of the vegetable kingdom. They must either steal the elaborated juices of other live plants, or depend upon the decaying matter of others which are dead. Then came two other delicate little orchids, the two tway-blades, almost always found the one in the company of the other. These are the greater tway-blade (*Ophrys convallarioides*), and the lesser (*O. cordata*).

Suddenly the firs gave place to a rich maple-bottom and more open hillside, and there appeared the wild ginger (*Asarum caudatum*), the strange Saxifragaceous plant (*Lep-taxis Menziesii*), one of those peculiar plants that disclose their seeds through the opened pod long before they are ripe; another of the same family whose fringed petals are as delicate as, and similar to, the crossed lines in a spider's web, namely the leafy mitre-wort (*Mitella caulescens*); the beautiful palm-tree moss (*Mnium Menziesii*), one of the finest on the coast, and more like a delicate little tree than a moss. Upon the moist bank grew the Virginia waterleaf (*Hydrophyllum tenuipes*), its flowers sometimes a pale lavender,

sometimes a whitish-green; and with it the pretty squirrel-corn (*Bikukulla formosa*), whose flowers closely resemble both in form and color the "bleeding-heart," to which it is related.

Plunging immediately into the densest timber I had yet met on this trip, the ground of the fairly gloomy forest, which would have been dark and dismal in the extreme, was suddenly lit up as if I had come out into the open sunlight, or like stars in an otherwise black heavens, by acre upon acre of the snowy Canada dog-wood (*Cornus Canadensis*), and the fairest flower of the higher forests (*Clintonia uniflora*). This pure, Liliaceous plant, with its snowy or creamy flowers, delicate scent, glossy soft leaves in twos or threes from the root, and later its dark blue fruit is a favorite with everyone, and I have yet to find the person, no matter how much or how little he valued botany as a science, who has not asked me the name of this pretty, and in English, nameless flower.

At six o'clock I rounded a point in the woods and came suddenly in sight of the lake and of the party of pioneers who had preceded me. There was not a morsel of food in the camp and no chance of seeing the remainder of the party that night, as we well knew from the quality of the trail we had left behind us. Two had been sent out to forage, and soon returned with a small piece of bacon and a large loaf of bread. By careful division we had about finished our frugal fare, when a whoop was heard and soon the Lieutenant appeared with a full haversack slung over his shoulders. More help was needed for those with the pack animals, and all returned save the Lieutenant and myself. We went down to the lake, and after firing two shots, the approved method of letting those on the other side know that a "fare" was in waiting, we were ferried across and made arrangements with one of the farmers for bringing over the animals on a raft when they should appear. When! It was six o'clock the next day before three of them arrived, and later before all came in. What a sight! They had been relieved of half of their packs, half of the whole "outfit" had been left at our landing place, and with the burdens they bore they looked tired enough, and the men looked no better. Three of the mules had rolled down hill, so steep were the hills and so untried were their muscles, and one had so wedged itself under a large log that the log had to be cut off and the mule cut out! On account of this miserable trail it was four days before baggage enough had been collected to allow us to proceed, and weeks passed before the whole of the baggage was in camp with us. Poor trail, the never-ending delay caused by enforced ferriage across the lake on a miserable raft, and lack of almost all wild forage-plants for the mules, actually threw a dämpner over the

While looking down intently to see where I was putting my foot—for the lesser rills are often deep and muddy and covered over by the thick but none the less treacherous growth of the salmon-berry (*Rubus spectabilis*), the fruit of which was even then ripe and varying in color from corn-color to a to keep them from "burning," and the rest in trout-fishing. I was always very successful, especially toward evening, for fish are abundant in the lake, both brook-trout and "bull-trout." The latter take the spoon greedily, even after a hearty meal. I caught one about two feet long, and on preparing it for the cook I found in its stomach a whole trout eight inches long.

Lake Cushman is a body of water well worth visiting. It is about one and a half miles long by one-half or three-quarters of a mile broad. It is very deep, and has probably been formed by a grand landslide in long past ages, or possibly a dyke from some fiery overflow. The mountains rise abruptly on two sides, and the one on the northeast was covered with snow on our arrival, but when I returned was bare. They are densely covered with firs to the very top, and magnificent timber most of it is. The Skohomish, a rapid, dashing stream, flows into it from the northwest, and goes out a sluggish but icy cold stream, at its southeast extremity. Could the obstructions at the falls be removed by blasting, thus giving an open "roadway" down the river for logs, the timber interests of this country would be very considerable. Moreover the land is generally good, and would be of no secondary value when the timber was removed. The bottom land to the west of the lake, though only about one mile wide and five or six long, is of wonderful fertility, owing to the almost yearly overflow of the upper Skohomish, and the "backing-up" of the lake. Vegetables grow here most luxuriantly, and a better stand of timothy I never saw in my life than on one of the lake ranches.

The afternoon of the 5th of July I spent in botanizing, for, though my presses and driers had not yet put in an appearance, I felt certain they would be at hand on the 6th. I went first to the rich alluvial bottoms and along a small creek that flows into the lake. Along the sandy banks of the latter I found the turtle-head (*Chelone nemorosa*). In the mud grew the common cress (*Roripa nasturtium*, probably introduced) and the tall culm of a drooping grass (*Cinna latifolia*). Next were found *Mertensia Sibirica*, with its beautiful drooping lapis lazuli flowers, and close by, the bitter-cress (*Cardamine kantschatica*). In the mud and water flourished the manna-grass (*Panicularia pauciflora*), and on the bank, the handsome flesh-colored flowers of the tall flea-bane (*Erigeron Philadelphicus*), lit up the dark green of the surrounding foliage. Close at hand shot aloft the tall shoots of a wild lettuce, not yet in flower, but on my return found to be, *Lactuca spicata*.

spirits of the party which only vanished as we left all traces of man and extravagant tolls behind us. The next day no "driers" being on hand, or likely to be for a day or two, I determined to do no more collecting till they arrived, but spent part of my time in exposing those already collected to the sun black-brown—I was pleased to find for the first time in my life a magnificent specimen of the Virginia moonwort (*Botrychium Virginianum*), which measured over two feet from the tip of its elongated fertile frond to the ground. In vain I searched for more; it was a "solitaire" as far as my observation led me. On the sunny banks of the rill were the large mitre-wort (*Tellima grandiflora*), and the prickly gooseberry (*Ribes lacustre*), one of the handsomest of the genus, with its glossy green leaves and its black fruit. Close at hand rose the gigantic umbel known as the cow-parsnip (*Heracleum lanatum*), then just in flower, while cowering at its feet were the delicate plants *Cardamine oligosperma*, and *Alsine crispa*. The St. John's-wort (*Hypericum Scouleri*) was just preparing to open its yellow clusters. The alum-root (*Heuchera micrantha*) and the snow-berry (*Symphoricarpos racemosus*), were in full flower everywhere, while many mosses, such as Hypnum, Dicranum, Neckera, Mnium, Dichelyma, Racomitrium and Grimmia, covered trees and ground. I soon came out of the dense, rich forests on to a gravel-bar of one of the arms of the river, and here an entirely different flora awaited me. First was the delicate, red-stemmed Polygonum (*P. minimum*), the four-leaved Galium (*G. Kamtschaticum*), and the gorgeous plumes of the painted-cup or Indian pink (*Castilleja angustifolia*). The two rock-cresses (*Arabis hirsuta* and *A. glabra*) were abundant, as were the winter-ress (*Campe barbarea*), the various-leaved Collomia (*C. heterophylla*) and the graceful Gilia (*G. gracilis*). The beautiful Penstemon (*P. diffusus*) fairly covered the bar with its royal purple, while, as if to vie with royalty, flamed out the red flowers of the Columbine (*Agulegia formosa*). Mingling with these their more modest colorings were the fruit and flowers of the wild strawberry (*Fragaria platypetala*), the pink blossoms of the delicate creeping spring beauty (*Claytonia parvifolia*), the golden yellow flowers and the white stems of the "gold and silver" (*Eriophyllum lanatum*), probably the most variable plant on this coast, the greenish-white flowers of *Phacelia heterophylla*, and the minute blue flowers of the little "innocence" (*Collinsia tenella*). On the deciduous trees near by, and in fact along the whole trail so far, though nowhere else in such profusion, were festoons composed of the two pretty mosses *Neckera Douglasii* and *N. Menziesii*. Some of these draperies were three or four feet long, and resemble in all save color the Tillandsia or long-moss of the South, when

seen at a distance. This moss, commonly collected for "stuffing," grows in such abundance there that were it nearer a market it would give quite an income to its gatherers. In these rich, warm bottoms, amongst the gigantic firs and cedars, the greenness of the plants and the size of the more perishable species are remarkable. The size of the moon-wort has recently been mentioned. The enchanter's nightshade here grew two and one-half feet high, while the leaves of *Tolmiea* were found over six inches in diameter. On my return to camp I found the delicate Saxifragaceous plant (*Therofon elatum*), a sedge (*Carex festiva*), the hedge nettle (*Stachys ciliata*), and the beautiful pink monkey-flower (*Mimulus Lewisii*), evidently a "waif" from the regions of the moraine and glacier.

The following day, armed with a rake, I proceeded to the lake. I paddled about for some time looking for aquatic plants, but met with poor success. A *Potamogeton* (*P. Robbinsii*), covered the bottom of the lake in places where a depth of water from two to six feet obtained. In the shallower parts of the lake were growing abundantly mare's-tail (*Hippuris vulgaris*), mud-rush (*Equisetum fluviatile*), two sedges (*Carex utriculata*, and *C. aquatilis?*), the latter too young for accurate determination, and the long, ribbon-like leaves of the bur-reed (*Sparganium angustifolium*), floated upon the waters. The shores were lined with the trees prevailing on the lake-borders of this country. These were the cottonwood (*Populus trichocarpa*), marsh willow (*Salix lasiandra*), long-leaved willow (*S. longifolia*), Oregon crab (*Pyrus diversifolia*), tall bush-honeysuckle (*Lonicera involucrata*), besides the firs, hemlock, arbor-vitæ, maples, buckthorn and alder, which here grow right down to the water's edge. Seeing an abrupt dyke of basalt rising almost directly out of the lake to the south (?) I rowed to it, landed and climbed up its steep face. Besides many mosses and lichens, I found the smooth maple (*Acer Douglasii*), Merten's saxifrage (*Saxifraga Mertensiana*), and the gray fescue-grass (*Festuca rubra*).

On the morning of July 7, the necessary part of the baggage having arrived, we struck camp, and taking up the trail, soon left behind us the last vestiges of civilization. I found but few plants along the trail not previously discovered. In moist, sandy places under the willows and poplars appeared the little grove-lover (*Nemophila parviflora*), and an *Epilobium*, probably (*E. alpinum*), though approaching (*E. origanifolium*). Here also grew the valerian (*Valeriana Sitchensis*), filling the woods with its peculiar odor, while along the bottoms grew the bee-willow (*Salix Sitchensis*), a tree or shrub whose flowers are much frequented by the

honey-bee in early spring. The female catkins were just disappearing, while the next plant found, the meadow-rue (*Thalictrum occidentale*), had dropped its ripened fruit. Here also was a delicate grass (*Agrostis exarata*). Soon succeeded an old gravel-bar, and there was the beautiful blue-bell (*Campanula rotundifolia*), in full bloom, while covering whole patches of ground were the green cushions of the alpine phlox (*Phlox diffusa*), a plant likewise away from home, for never before have I seen it at any other place than on banks at or above the timber line and even above the glaciers. About noon we reached the end of the trail, and the goal for which the trail was cut out—the copper mines, as they are called. Claim marks were abundant, but if there is not a greater showing of copper than was generally found in the specimens examined by our mineralogist, Colonel Linsley, there will be no fear of their claims being “jumped.” A few specimens were tolerably rich in copper, but the majority showed much more of iron than the other metal. The various camping places were numbered consecutively and marked very distinctly “1,” “2,” “3,” etc. From our present camp, No. “2” to “3,” there intervened only about three miles, and yet so great was the labor in making trail and occasional bridges for the mules; in cutting or sawing gigantic fallen trees and in looking for suitable fords (for the river was at this time deep and swift), that six days were consumed before we reached the next camp. My attention was entirely diverted from botany to the uncongenial but none the less necessary handling of axe, saw, shovel and pick, for shirks were not in favor in the camp, and all worked with a will.

The only plants collected during this period were the pretty little bird's-foot bramble (*Rubus pedatus*); several mosses, notable among which was the handsome black-moss (*Scouleria aquatica*); the Western blue-berry (*Vaccinium ovalifolium*), whose berries are too sour to gratify the taste, but “make up well” into puddings and pies. One of the high-altitude firs first put in an appearance here, and though the cones were too young for accurate diagnosis, it bore resemblance to one found in abundance two weeks later, namely the “lovely fir” (*Abies amabilis*), one of the many reminders that we were reaching a higher altitude. The other reminders were: *Rubus spectabilis*, with fruit half-grown; *Ribes lacustre*, in blossom, and the female cones or “catkins” of *Alnus Oregona* hardly at all awakened from their winter's sleep. That evening after the work of the day, and supper was over, I wandered along the gravelly and beautiful banks of the river and collected a few strangers to my trip so far. These were the large-leaved sand-wort (*Moehringia macrophylla*), the large leaves of the Western colt's-foot (*Peta-*

sites speciosa), the fruit of the tall yellow violet (*Viola glabella*), strangely enough now seen for the first time on the trip, and lastly, the mountain bush-alder (*Alnus sinuata*), the delicious odor of whose leaves always prepares me for its presence before I see it. This bush or small tree, common enough in most of the mountains, is even more abundant in the Olympics, and sometimes for a mile or more offers an almost impenetrable barrier to the traveler, unless he is armed with an axe. Nearly always inclining strongly down hill, owing to their six or eight months weight of snow, sometimes partly covered by humus or moss, they are the cause of more serious falls than any other tree, unless it be the vine-maple.

The next day a halt was ordered for mending clothes, resting and bringing up the remaining baggage from the last camp. Accompanied by one of the soldiers, Mr. Fisher, I started soon after nine o'clock to ascend a high peak which began just across the river and ended—no one knew where. A light breakfast with several good strong cups of coffee, a cool morning and beautiful sky, all conspired to put us in excellent spirits, and we went up mile after mile with very little sense of fatigue. The slope was most of the way of an angle of fully forty-five degrees and some of the time at that of sixty-five or seventy, while near the top it was not far from eighty. Nearly the whole of the route lay through a tolerable thick growth of conifers, thus diversifying the way, deceiving us as to its length, and giving us many a soft resting place. It was a continued scene of beauty, for so steep was the slope that at any time we could look down upon the tops of high trees not a hundred yards distant, thus allowing us to examine at will every variation of leaf, branch or cone. The forest was made up of a jumble of Douglas spruce, arbor-vitæ, white pine, white fir, balsam or lovely fir, yew, Western hemlock, and, far up the slopes, alpine fir and alpine hemlock. We had not proceeded a half-mile from the camp before we came upon a large snow bank protected from the warm rays of the sun by the thick forest at this place. Then came one of those surprises, not infrequent in the mountains, but seen nowhere else that I am aware of—an entire change in the flora. From this snow bank and thick woods we passed almost immediately to an exposed dyke of basalt, upon whose scant patches of earth the sun was now throwing its slanting but mid-day rays. The earth, such as there was, was almost as dry as an Eastern Oregon slope in summer-time, and here were the very plants common on the sunny banks of the Willamette River, though some of them I had not seen since leaving Oregon, and many not since I had joined the expedition. Nearly the entire surface of the rock

for a hundred yards or more was thickly carpeted with the boulder-moss (*Racomitrium canescens* Brid.), while the poison-oak (*Rhus diversiloba*) was just coming into fruit. The mock-orange (*Philadelphus Gordonianus*) was just budding, while the plains-grass (*Merathrepta Californica*), mouse-ear chickweed (*Cerastium arvense*), stone-crop (*Sedum spathulifolium*, "moss" in the vernacular throughout Oregon and Washington), *five-finger (*Potentilla glandulosa*), *Hosackia parviflora*, small-headed clover (*Trifolium microcephalum*), few-flowered clover (*T. oliganthum*), and rock club-moss (*Selaginella rupestris*), not only all plants new to the trip, but the only plants here growing. How did they find this, to them, little oasis in the desert of forest? Certainly it supports the theory advanced by some, if theory it can be called, that the various methods in which seeds may be scattered cannot be measured, that where you find the suitable habitat and environment, there you will be sure to find the plant. Here also were a few plants seen at our landing on Hood's Canal, and not seen since, namely, the cherry (*Prunus emarginata villosa*), and the yellow Composite (*Agoseris laciniata*). Near the dyke was our common early violet (*Viola sempervirens*) and strange companion for this little friend found only about Portland, the snow-loving bramble (*Rubus nivalis*), a pretty thing with its glossy, evergreen leaves and lurid-red flowers. Rare mosses, lichens and fungi now began to appear on every hand, the most noticeable of the first class being the caterpillar moss (*Hypnum robustum*), so named on account of the yellowish-green and exceedingly worm-like branches; while the "barber's poles" (*Allotropa virgata*) and coral-root (*Corallorhiza Mertensiana*) were sticking up everywhere. Here first appeared the myrtle-leaved huckleberry (*Vaccinium macrophyllum*), the fruit of which is a luscious berry equally prized by white or Indian, though the bush was now hardly past the flowering stage. As we mounted higher and higher, the trees grew more scanty and stunted, with glades here and there. Presently were found occasional shoots of the small-leaved huckleberry (*Vaccinium scoparium*), the modest little mountain wintergreen or salal (*Gaultheria ovatifolia*) and the downy bramble (*Rubus lasiococcus*). In the more open, loose soil were growing a pretty sedge (*Carex Rossii*), and one of the showiest and most common Lupines near the snow line, *L. rivularis*. Steeper and more arduous grew the ascent, for a fire had killed the now scattered trees, thus taking from us all shelter from the intense rays of the sun, and making the soil so loose that our feet sank ankle deep at every step. The fire had gone through this place the previous year, and though it had destroyed nearly all vegetation, the deep roots of the elk-grass had not been injured, and

it was out in thick magnificence. The beauty of this plant I have previously described. Veritable snow-balls they appear perched upon the summits of their green and purple stems. Soon vast banks of snow were reached, as the slope went down toward the north, and immediately a new set of flowers appeared. On a little sunny bank, peering out of the snow like an islet from the sea, was the pretty alpine buttercup (*Ranunculus Eschscholtzii*). Then began one of the most singular mixtures of mountain and valley flowers that I had ever witnessed; common yellow violet (*Viola glabella*), white adder's tongue (*Erythronium revolutum*), yew (*Taxus brevifolia*) in flower, a lily (*Disporum Oreganum*) just flowering, baneberry (*Actea spicata arguta*), meadow-rue, just flowering, sweet-herb, Western barberry or Oregon grape (*Berberis nervosa*), all low altitude plants, common all about Portland or Olympia, there grew in strange incongruity with the gooseberry (*Ribes lacustre*), an alpine currant (*Ribes laxiflorum*), alpine valerian (*Valeriana Sitchensis*), alpine wood-rush (*Juncoides parviflorum*, an alpine form), and the two alpine mitre-worts (*Mitella trifida* and *M. Breweri*). The two next found, smooth maple (*Acer Douglasii*), and an umbelliferous plant, *Washingtonia ambigua*, seem equally at home at the snow line or along our rivers at low altitudes.

The mountain slope now grew rocky and far more steep. Where a scant covering of earth overlaid the otherwise bare rock were great patches of the sweet mountain pink (*Phlox diffusa*), the soft cushions of whose intermingled leaves and branches, seconded by the delicious scent of its white or pink flowers, offer as luxurious a pillow to the warm head and panting frame as any Sybarite could choose. Then, as with body stretched out its full length at an angle of twenty or thirty degrees, bathed in the warm rays of the afternoon sun, with eyes looking upward and outward and meeting nothing but the blue sky, except it be a majestic white cloud-pile moving across the field of view not far overhead, or a butterfly flitting just above; hearing nothing but the plaintive whistle of the mountain marmot, or the roar of some Alpine cataract far below, all cares of the world vanish for the instant; one seems to be upon some vast, quiet sea, and instinctively some such soothing couplet as that of Buchanan Reid's occurs to the mind:

"My soul today is far away,
Sailing the Vesuvian Bay."

But with a start I realize that I am getting cold, that the evening is advancing, and that the top has not yet been gained. Near at hand, my senses steeped in the incense from its leaves, was the bush-alder (*Alnus sinuata*), just in flower, and right under it the yellow adder's-tongue (*Erythronium*

grandiflorum parvifloram); next the pretty mountain-ash (*Pyrus Sitchensis*). Just here a bear started up and went plunging down the steep slope at a fearful gait, and altogether too quickly for the expert pistol of my companion. Up a little ravine, at an angle of fully eighty degrees, ran the trail, well marked and even scored by the feet of deer. How do they possibly ascend such slopes? Had it not been for the almost continuous assistance given us by bushes, plants or jutting rocks, we would have been compelled to beat a retreat a number of times. The whistle or cry of the marmot grew more frequent; where a combination of soil and crevices of rock would admit of it, were numerous holes of the mountain beaver. Jutting out from the cliff-faces was a plant belonging to a class much sought after by the Indians for its food-producing roots, called "cous," and botanically *Lomatium*. This species (*L. Hallii*) we found no exception to the rule, and we ate or rather chewed several of its figous, parsnip-like roots with a relish. Then appeared the peculiar *Menziesia ferruginæa*, and the undeveloped buds of the white azalea (*Rhododendron albiflorum*). Next, in strange contrast, the common blue violet (*Viola adunca*), and low strawberry (*Fragaria Chilensis*) put me in mind of home. The young shoots of *Pedicularis bracteosa* were just appearing from the ground, while from a rich handful of earth was growing a clump of the pretty alpine form of our waterleaf (*Hydrophyllum tenuipes*). Soon a delightful surprise was in waiting for me. As we scaled the now almost vertical wall, slowly and with the utmost care, for a misstep would send us rolling hundreds of feet down the steep and rocky defile, my face, almost in contact with the rock, came suddenly upon a dash of color almost as vivid as if some one had overturned a pot of crimson or carmine, and covering an area of a foot or more. It was the beautiful alpine Douglasia (*D. dentata*), probably, though at the time I thought I had found an unknown treasure. Soon this plant occurred in great abundance, and as these brilliant patches of red fell upon the eye from a distance, one could hardly dissuade oneself from thinking this some Lookout Mountain up which an attacking force had been clambering and though the bodies had been removed the stains bore witness of the bloody fray. Clinging to the overhanging rocks was the handsome *Penstemon Menziesii*, while *Antennaria Howellii*, *Saxifraga Marshallii* (early Saxifrage), *Saxifraga punctata*, *Allium Tolmiei*, *Arabis hirsuta*, *Pachystima Myrsinites*, in full bloom, and the beautiful western heather (*Phyllodoce empetriformis*) yet in bud, took hold wherever a handful of earth was to be found on the otherwise bare rocks. Bordering the snow-banks, near the summit, were thick beds of another plant closely related to

the last *Cassiope Mertensiana*, the beautiful white bells of the latter forming a pretty contrast to the pink buds of the former. Next came a violet, handsome both in leaf and in flower, the name of which is totally unknown to me. There was but one bunch of it, and though I scanned the cliffs far and near not another did I find. (This plant is called *V. Howellii* by Mr. Watson.) Near the summit appeared *Lewisia Columbiana*, where sufficient disintegrated rock had given it a bed, while near by was *Saxifraga Bongardi* in bud.

After traversing a few more snow-fields and rounding several cliffs, we came to the extreme summit, and, in order to rest, sat down upon a three-foot mountain hemlock (*Tsuga Mertensiana*), which supported me like a spring bed, and from whose top, as I drank in the splendor of the scene, I cut the flowers both male and female. Then I bent over toward me a six-foot alpine fir (*Abies lasiocarpa*), and cut from its top the female flowers and half-developed cones. What was the age of these dwarfs would be difficult to calculate, as the rings are so near as to be almost unrecognizable without the aid of a microscope; but from the cut end of one about the same size on Mt. Hood I made out fifty rings and possibly more. This dwarfish nature is only natural to them when inhabiting the extreme tops of the lower mountains, or above the snow line on the higher. On the slopes near the end of the main timber belt they reach generous proportions and are both objects of beauty. The fir is sometimes nearly one hundred feet high and is almost cylindrical from the bottom to the top, so short and thick are the branches. The hemlock is the exact opposite, and when half-grown is a perfect cone and the most beautiful conifer with which I am acquainted. It seems at times as if the tree must have been subjected to the pruner's shears, so perfectly regular is its form. Add to this its very dense, pretty clusters of leaves, giving it the appearance of being thickly covered with green rosettes, and it is a delightful object to gaze upon. Even when age has given it a diameter of three feet, it does not lose its beauty, for a pleasing majesty takes the place of its charming regularity, like a beautiful girl ripened into regal womanhood. No room was given me at this time for these reflections, for while my companion had kindled a fire in a little clump of dead hemlock, and the bacon was sizzling thereon, preparatory to being sandwiched between slices of bread, our frugal, but after such labors, appetizing meal, I was busy making a rough map. I spread out a sheet of clean paper upon a flat boulder, and, placing upon it my compass to get the cardinal points, I traced thereon the main trend of rivers and chains, and located the highest peaks. This was all done to enable our friends below to judge somewhat of the unexplored coun-

try beyond us, and where it was most probable a trail could be run, for this purpose alone, for had the time been altogether at my disposal, I should have done nothing but gaze. gaze. A more magnificent scene had never presented itself to my eyes, and I doubt whether anything in the higher Alps or the grand ice-mountains of Alaska could outrival that view. To the south and east, and apparently right at my feet was the narrow, blue ribbon of Hood's Canal, and at the heel of this watery boot stood out like a large flake of snow in the distance, the village of Union City. Then came a narrow neck of land, and then succeeded one another like fingers to a gigantic hand North Bay, Eld Inlet, Totten Inlet and Budd's Inlet. The hand became an arm and lost itself in the hazy distance toward Tacoma. Mt. Rainier was visible from top to bottom, and never before was I so struck with its magnificence as when looking upon it from this height and being able to compare it with every intervening object. But it was the opposite view which captivated me most. Canyon mingled with canyon, peak rose above peak, ridge succeeded ridge, until they culminated in old Olympus far to the north-west; snow, west, north and south; the fast descending sun bringing out the gorgeous colorings of pale-blue, lavender, purple, ash, pink and gold. Add to this the delightful warmth of a summer sun in these altitudes—the awful stillness broken every now and then by the no less awful thunder of some distant avalanche—a fearful precipice just before us down which a single step in advance would hurl us hundreds of feet—and one can form some slight idea of the reasons that compelled us to gaze and be silent.

But it was now after four o'clock, and a long, steep journey lay between us and camp. Regretfully we turned our eyes away from this scene and swiftly passing back to the east slope of the mountain, we were surprised to find that evening had already set in there. Slipping, sliding, running, jumping where the trail was easier—crawling backwards and holding tightly by every bush or bunch of grass, where the way was dangerous, we finally reached the timber line. Then running, jumping, slipping again, the miles flew swiftly behind us until at half-past nine, and after several shots had been given by our friends in camp, who were uneasy at our prolonged stay, and answered by us—dripping with perspiration and trembling like aspens, our legs almost giving way under us at every step owing to the fearful strain upon muscles unaccustomed to such a descent—foot-sore and happy with the success of the trip, we entered camp and there detailed the circumstances of the day to a group of listeners, while beside the blazing camp-fire we refreshed ourselves with a good supper and pints of hot coffee.

The next day, owing to the mass of material I had collected the previous day (for I aimed to gather at least one specimen of every species I saw on the whole trip, that the Alpine Club might have as complete a collection as possible), I spent the whole of the time in sorting and drying the plants, and arranging with some of the men to attend to my "pack," for the following three or four days were to be given up to "scouting" for trails. At eight o'clock July 15 we again broke camp and moved up the river two or three miles, the mules making good use of the shallow fords on this part of the river as well as the long stretches of gravel bar. At nine o'clock "Camp 4" was reached, where vertical walls, a swift and deep river, and numerous falls revealed to us the fact that the serious work would now begin. Three scouting parties were quickly formed, and orders given by the Lieutenant as to the ground we were to "cover." Our party consisted of Colonel Linsley, our mineralogist; Sergeant Yates and myself, to be increased shortly after our departure, and much to our disgust, by our mastiff-hound "Jumbo." We went very "light weight," owing to the severe climbing we knew was in store for us, our stock of supplies and equipments being one haversack of hardtack, tea and coffee, a pound or two of bacon, a hand axe, a rifle and a small press. For this reason was Jumbo's society not only undesired, but the dog came to be actually abhorred, till famine, toil and heroism proved his staying qualities and changed our antipathy into admiration. As we toiled up a mossy cliff, the flowers of *Rubus spectabilis* were just opening from bud; the fruit had vanished months ago around the Sound. Further on the ground was carpeted with the green leaves and bright with the snowy flowers of the little bramble (*Rubus pedatus*), while quantities of the pink twist-stalk (*Streptopus roseus*) were on every hand. We were soon driven by the steep bluff to the river-bed of the South Branch, more of a creek than a river, and rushing and roaring a constant succession of rapids, pools and occasional falls. Here I came upon a little friend I had not seen since leaving the Columbia River at Rooster Rock, the delicate *Romanzoffia Sitchensis*, while a little further up the stream, and growing from the snow, *Vaccinium ovalifolium* was just blossoming. On a bank in the woods, but recently abandoned by the snow, was growing *Lycopodium lucidulum*, its leafy spikes just ripening their spores. The trail was followed with the utmost difficulty. The severe winter that had just passed, with its accompanying and unheard-of mass of snow, followed by severe storms and avalanches in the spring, had prostrated trees in every direction, piling the giant cedars and firs sometimes four or five deep. It was probably due to the unusual depth

of snow and quantities of "wind-falls" that game had been so scarce during the whole trip so far, for its absence puzzled the "oldest inhabitant." If it had not been for the fallen timber the way would have been comparatively easy, for a deeply cut elk-trail led along the river, which would have been as plain as a cattle-path had the successions of fallen trees, dislodged stones, landslides and at times deep snow allowed any trail to be followed for more than a hundred yards. Soon we abandoned all thought of trail and took boldly to the timber, keeping the stream always in sound if not in sight, and skirting, while ascending, the steep slope to the north of the creek. After several miles of wind-falls, snow-banks, vine-maple, huckleberry brush and alpine alder we came suddenly upon one of those dykes often found on mountain sides, and there my delight was great in finding a pea whose whole aspect was new to me, even to its generic characters. From one slightly formed pod I judged it might be a *Desmodium*, but have discovered since that it is *Hedysarum occidentale*. On taking again to the forest, as my eyes were fixed upon the ground noting the various mosses and lichens, my attention was suddenly arrested by a little cone about the size of a very large pea or small cherry. I glanced up and there over my head were the pretty, pendant branches and white trunk of the Sitka or yellow cedar (*Chamaecyparis Nootkatensis*). This valuable tree, valuable alike from its strong scent, light yellow wood, close grain—so close that the mere blow of a sharp axe leaves a surface as highly polished as if it had been planed and oiled—is here found in great abundance, and at times reaches a diameter of eight or nine feet. The most of these large trees, however, are more or less wrecks, the heavy snows, landslides, old age, or what not, having laid no gentle hands upon them, but leaving them gnarled and dead at the top or broken off half way up. On a slope facing the south, reached on a succeeding day, we found the wood much more perfect and the trees smaller, but very numerous. In fact, nearly one-half of the timber was of this species. The remaining timber was composed mainly of white pine and "lovely fir," the trees of both kinds being very large and fine. The company which first invents some way to get these trees to market (now it seems almost an impossibility) will make a fortune here, for I am told the logs of the Sitka cedar fetch a very high price at Victoria, in such high repute is the lumber in Europe. On the same slope where I first found the *Chamaecyparis*, *Silene Douglassii* was growing in great clumps, and out of the rocks near by quantities of lace-fern (*Cheilanthes gracillima*). Higher came the little Saxifrage (*S. bronchialis*), and the handsome shield-fern (*Polystichum Lonchitis*).

Here night threatened to overtake us and we were forced to camp, though there was no water, and nowhere could we find a slope which could afford us a couch at a less angle than thirty degrees. Right against a huge boulder, however, we built our fire, and as we had no blankets and some of us no coats, we collected wood for an "all night's session." Fortunately this was abundant, as it is everywhere in these mountains, and soon a roaring fire was blazing upward. We collected great cakes of snow, and putting into our quart cup handful after handful of this substance, in lieu of water, we soon had tea. As we sat around our camp-fire, partaking of our delicious repast of hardtack, bacon and tea, the pleasure of the moment was rather clouded by thoughts of the coming night to be gone through, and I for one involuntarily repeated the words from a well-known selection, slightly amended:

"Few and short were the prayers we said,

And we spake not a word of sorrow,

But we steadfastly gazed" on the snow all around

"And we bitterly thought of the morrow."

By constantly replenishing the fire all night, and by constantly changing our freezing and our roasting sides, we managed to keep moderately comfortable, and five o'clock the next morning saw us up, and shortly after, continuing our upward course. As we neared the top of this particular peak I came upon a very interesting plant, new to me, and I had hoped, new to science, the Alaskan *Spiraea* (*Spiraea Hendersoni*), springing out from the top of vertical walls, in this respect very unlike its relative, *Lutkea pectinata*, which ordinarily grows in loose moraine material. I hear that Professor Eaton thinks it a new species. In slopes on the summit was the dwarf huckleberry (*Vaccinium caespitosum*), then in flower. Next came the yellow *Arnica Chamissonis*, and a grass (*Trisetum spicatum molle*), with a sedge (*Carex leporina*). In thickets near by were the delicate little flowers of the wood wind-flower (*Anemone nemorosa*), a remarkably small form with flowers varying from white to blue. This little plant seems worthy of a varietal name; but I have been told by eminent authorities that intermediate forms are found. However this may be, I never have found them, neither have I ever found the small form in the neighborhood of the larger. The only times I ever found this form were in its present situation and in an "oak-prairie" five miles southeast of Portland. On a moist, sunny bank near by was *Epilobium alpinum*, and further on I collected a solitary specimen of Drummond's wind-flower (*Anemone Drummondii*), the alpine meadow-sweet (*Spiraea densiflora*), Drummond's rush (*Juncus subtriflorus*), and *Saxifraga Bonardi* now in blossom. The only other plant found by me not

previously described was the pretty grass, *Deschampsia atropurpurea*. The travel of this day was the most provoking I ever experienced, the most dangerous and very fatiguing. It was one constant succession of climbing up one wall, down another; up one snow-bank, down another; creeping along a precipice, or walking along a sharp "backbone" upon the tops of eight-foot trees. Some idea can be had of the nature of our advance when I state that we left the former camp at six o'clock A. M., stopped one hour at noon, and at six o'clock in the evening camped on a flat ledge of sandstone rocks not two miles from our "covert" of the night before. At six the next morning, after having blazed a tree and written thereon the object of our search, we were again on the way, my botanical pack swelling visibly hour by hour, but the contents of the haversack reduced to a slice of bacon, a handful of sugar and about a quart of cracker crumbs. We had accomplished the object of our mission, however, which was to satisfy ourselves that a trail up this south fork would be not only difficult and long, but hazardous, as the other side of the ridge seemed most forbidding for pack animals. We were convinced that the trail should go farther to the north, and this view being fixed in our minds, the next thing was to get back to camp as quickly as possible since our store of provisions was reduced to a minimum. Passing down the north side of this ridge, crossing the creek at the bottom, and ascending the opposite ridge to the north, we found no small undertaking, and six hours were consumed in making, on a straight line, not over one mile and a half. On the cold, wet bottoms of the north slope I found growing abundantly Jeffrey's mosquito-bills (*Dodecatheon Jeffreyi*), and the white marigold (*Caltha biflora*), the latter blossoming right out of the snow, so late was the season and so deep had been the snow. Along the rills lower down, the delicate corymbs of *Trautvetteria grandis* were abundant. After arduous toil we reached a point well up the opposite ridge, and took there a very hasty and meager meal, the last one in the haversack. Camp was about eight or ten miles away; but we had luckily struck a fine elk-trail and an open hillside. This trail we kept for several miles, till the fallen timber of the bottom compelled us to seek the creek-bank. Here I collected the only other plant not yet seen, the graceful rein-orchid (*Limnorchis stricta*), though one other plant was seen, not yet fit for collection. The tall stalks of the "stagger-weed" (*Delphinium trolliifolium*) were in their prime stage for being cropped by animals, and acted as another motive to cause us to abandon this route, as I have too frequently seen the deadly effect of this plant upon cattle and horses. At nine o'clock, wearied, hungry, and our lower limbs filled with the poisonous prickles

of *Echinopanax horridum*, we caught the gleam of the campfire and were welcomed by a chorus of shots, yells and the baying of hounds. All of the other parties had returned, and one of them with a fine, young deer. I will not tax the reader's credulity by enumerating the number of slices of fried venison, cups of coffee or slices of bread we severally devoured that night. Passing this immaterial part of the record, suffice it to state that nothing of great value had been discovered as to the most feasible trail, but it was determined to reach the Upper Falls, about six miles distant, before sending out more parties.

This trip consumed the 15th, 16th and 17th of July. From the 18th to the 27th we were engaged in making trail, and on the morning of this last day were encamped at a beautiful spot above the Falls, "Camp 6." Here another scouting party, consisting of Colonel Linsley and Private Fischer, was sent out. During their absence the remainder of the party was engaged in continuing the trail up a steep but more open slope, and "Camp 7" was reached the evening of the 28th. Here a tree had been blazed by the exploring party sent out on the previous morning, and we were surprised to find the reading of the Colonel's barometer registered only 2,300 feet. How different from the Cascade Mountains! Here we were camped by a great snow-bank the last of July, and our altitude only 2,300 feet above the sea. These same surroundings in the Cascade Range would have given us an altitude of not less than 6,000 feet.

Here, after a three weeks' handling of saw, axe, pick and shovel, and not having received a scratch or bruise the whole time, I inflicted a severe cut upon my wrist while cutting fir boughs for the beds, and was rendered immediately a "useless member" for days to come. To add to my disgust, and that of our "advance working gang," word was brought us from "Camp 6" that the explorers had returned and announced the fact that farther progress along our present line was not only impracticable, but even impossible, and that we must return to the lower camp and explore for a northerly trail. The evening of the 30th saw us all reassembled in "Camp 6," not, however, before I had collected at the former camp a few more plants. These consisted almost entirely of mosses, lichens and fungi; but the berries of the several huckleberries were just ripe enough for good collecting, and the sweet flowers of the white azalea were here seen, for the first time this season, in full bloom. A forced rest for the next two days was a necessity for the party, as the Lieutenant had been compelled to go to Hoodspout for supplies and to learn of our photographer, who had not yet put in his appearance, though this had been promised for several weeks. This rest would

have been appreciated by me in my present useless condition, if I had not been constantly annoyed by the thought that the time at my disposal was oozing rapidly away. The Lieutenant returned on the evening of the 31st, and plans were immediately formed to send out three more parties on the succeeding day. From "Camp 4" a party consisting of our naturalist, Mr. Bretherton, and our engineer, Mr. Church, had been sent out by the Lieutenant over the divide to the south, with instructions to explore and carefully to map out the South Fork of the Skohomish River, the longer and possibly the larger fork of the main river, and which joins the one that flows out of Lake Cushman a few miles west of Union City and the Canal. They had now been gone since the 18th, and as they had taken only five days' rations, we began to feel uneasy about them. I was to learn the cause of their long absence a few days later.

The morning of the first of August broke dark and gloomy. The scouts were divided into three parties, and were told not to return till they severally found the route taken by them either utterly impracticable or absolutely safe. They were provisioned for a five to seven days' trip. My hand having healed sufficiently to cause me less inconvenience, I was anxious to accompany one of the parties, since at the utmost I had but a few weeks at my disposal before I should be compelled to return. Both the Lieutenant and the Colonel, however, spoke strongly against my proposal, and unwillingly I gave it up. At ten o'clock, three hours after their departure, it commenced to pour, and glad enough I was then that I had not accompanied them in my disabled condition. Before the party started I intimated to the Lieutenant that I should return to the Canal before he got back, explaining the position fully to him. So "good-byes" were given and returned, and August 3 saw me on my return, accompanied by one of the soldiers, Higgins, while my collection and few belongings were tightly strapped to the back of the faithful little mule "Frenchy." As it was about twenty miles to Hoodsport, and as we wished to reach that point the evening of this day, we took one other mule to help us on our journey, and by riding in turns render it less tedious.

I found nothing to collect till I reached Lake Cushman. There a three weeks' absence and the lowering of the waters of the lake had brought a few more flowers into view. These were *Oenanthe sarmentosa*, an *Angelica* (*A. Lyallii*?) in flower, the creeping buttercup (*Ranunculus Flammula reptans*), a sedge (*Carex stipata*), a pretty aster (*A. foliaceus frondeus*), the blue-flowered lettuce (*Lactuca spicata*), now in full bloom, and the tall, drooping grass (*Cinna latifolia*). In the dark fir forests bordering the lake, and for the ensuing two or

three miles, the woods were thick with the ghostly stalks of the Indian pipe (*Monotropa uniflora*). Nothing else was seen to collect till we reached a gravelly, burnt plain, almost entirely devoid of underbrush, and with but few firs and other trees. The ground was thickly covered with salal and kinnikinnick, while clumps of the Lupine (*L. rivularis*), *Psoralea physodes*, and *Hosackia crassifolia*, occurred at intervals. Then came quantities of the black pine (*Pinus contorta*), which differs here, as it does in the high mountains, from the ordinary seacoast form, possibly enough to merit the specific name that some give it of *P. Murrayana*. It struck me, as I looked at this tree, that it took just the intermediate ground between the coast and high mountain forms, and made even the var. *Murrayana* of Engelmann unnecessary. The coast tree is a low, bunchy tree, thickly covered with very enduring cones; the mountain tree is a very tall tree for its size, at times more resembling gigantic bamboos than trees. This form occupied the middle ground. It is never very bunchy, but bears cones, as does the coast form, when quite low. As I rode along the cones on the tops of some of these trees or bushes did not reach my shoulder. Here it is always symmetrical, and at times reaches goodly proportions. As I rode in the stage between Union City and Shelton, I observed many over two feet in diameter, and one old decrepit hero, broken off half way up, measured nearly three feet. As we dropped off from this bench the firs and hemlocks again took the place of the pines. Along the hillsides near Hoodspout I found the small-headed cud-weed (*Gnaphalium microcephalum*) abundant, and as I came down upon the beach I collected several specimens of the last plant gathered on this trip, *Grindelia Hendersoni*. I was rather doubtful about this name when it was sent me, or about this being a new species, but from the specimens collected this year, both flower and fruit, I am convinced that it is neither *G. cuneifolia* nor *G. glutinosa*.

When I reached Hoodspout I found Mr. Bretherton and Dr. Church looking rather pulled down. On my inquiring what the matter was, they told me as follows: Relying upon what false statements they had heard from miners and Indians, they had crossed the divide with only three days' rations, since they had been assured that a good trail and a short day's trip down the south fork of the Skohomish would bring them into the Indian reservation, and thence an easy trip into Union City. They were out seven or eight days, and for the last three days with hardly a morsel to eat. Had it not been for timely succor given them by a party of hunters from Olympia, it is doubtful whether they would ever have been enabled to reach their journey's end to tell the tale of

their hardships. They were to follow after the party the next day, and wishing them good-bye and a successful termination to the whole expedition, I hired a sailboat and was soon over at the little but beautifully situated village of Union City. There I took stage the next morning for Shelton, and after a four hours' drive over a fine road, and picturesque but rather poor country, I reached the latter place, whence I took the steamer for Olympia.

As one of the young soldiers, Mr. Fisher, seemed much interested in my work, I left him my press, driers and plenty of paper, asking him to finish what I had barely begun. This he agreed to do, and from what I was told by the Lieutenant and by other members of the party, he kept his word well, and had gathered for me many plants which he knew I had not. By some untoward accident this bundle, carried with so much difficulty all through the mountains, miscarried somewhere on the way to Gray's Harbor, to which place they went when taken upon the western coast. This is greatly to be regretted, for it must be that the most interesting flora and time of collecting came after I left the party, both on account of the mountains growing higher, the distance as they advanced being farther removed from salt water, and the snow disappearing from the slopes and leaving more of the ground uncovered. This unfortunate circumstance may have been largely mended by the good collections made by Mr. Charles V. Piper, who followed some weeks later along the route taken by the party, and reached a point much further inland than did I. If reports from his collections sent, when unknown, to the different authorities for identification, come back at about the same time that mine do, I shall incorporate the additional plants collected by him in this report.

As yet a great deal is to be learned about the flora of these mountains, and when several such fine trails as were cut by our party are made into their hearts they will not long be a terra incognita.

LIST OF PLANTS FROM THE CANAL TO THE SNOW LINE

Those seen by Charles V. Piper and not by me are followed by his name. I am indebted to Messrs. Sereno Watson, George Vasey, L. H. Bailey, J. Cardot, O. F. Cook, H. Willey and Charles H. Peck for the identification of many species. Some were too fragmentary, some of the grasses were too old, and some of the carices too young for exact identification, and all such are unnamed in whole or in part, or given with a question mark. The list enumerates nearly five hundred species.

- Stieta Oregana Tuck.
 pulmonaria L.
 anthraspis Ach.
 Alectoria jubata (L.).
 jubata sarmentosa.
 Sphaerophorus globiferus L.
 Peltigera apthosa Hffm.
 venosa Hffm.
 polydactyla Hffm.
 Cladonia furcata Huds.
 pyxidata L.
 gracilis L.
 gracilis elongata Fr.
 gracilis
 hybrida Schaer.
 rangiferina L.
 bellidiflora (Ach).
 Stereocaulon tomentosum
 Laur.
 Umbilicaria Muhlenbergii
 (Ach).
 Cetraria glauca (L.).
 glauca pobydactyla.
 Parmelia physodes L.
 Physcia pulverulenta Schreb.
 Thelotrema lepadinum Ach.
 Heterothecium sanguinarium.
 Lecanora pallescens L.
 subfusca L.
 Placodium ferrugineum Huds.
 Graphis scripta Ach.
 Buellia geographica (L.)?
 Lecidea tessellata Flk.
 Pilophorus cereolus Hallii
 Tuck.
 Exobasidium Cassiopes Peck,
 n. sp.
 Nidularia candida Peck, n. sp.
 Mycena strobilmoides Peck,
 n. sp.
 Otidella fulgens (Pers.) Sacc.
 Polyporus varius Fr.
 picinus Pk.
 versicolor Fr.
 hirsutus Fr.
 Pluteus cervinus.
 Mycena galericulata Scop.
 Bovista pila B. & C.
- Daldinia concentrica Boet.
 Jungermannia cordifolia Hook.
 Scapania Bolanderi Aust.
 Fimbriaria pilosa (Wahl).
 Conocephalus conicus (Dum.).
 Porella navicularis (L. & C.).
 Frullania Asagrayana Califor-
 nica Aust.
 Kantia trichomanis tenuis.
 Ptililium Californicum
 (Aust.).
 Metzgeria pubescens
 (Schrank.).
 Dichodontium Olympicum
 R. & C. n. sp.
 Dicranum Howellii fuscescens
 Turn.
 Ceratodon purpureus Brid.
 Distichium capillaceum B. & S.
 Barbula cylindrica B. & S.
 Grimmia apocarpa rivularis
 B. & S.
 apocarpa rivularis "forms."
 Scouleria aquatica Hook.
 Racomitrium varium Mitt.
 varium "forma foliis
 suarrosis" R. & C.
 aciculare Brid.
 canesceus ericoides Brid.
 heterostichum Brid.
 Orthotrichum Seiocarpum
 B. & S.
 Encalypta ciliata Hedw.
 Tetraxis geniculata Girg.
 Bartramia pomiformis Hedw.
 Oederiana Schwartz.
 Webera nutans Sch.
 Bryum capillare L.
 pseudotriquetrum gracile-
 scens Sch.
 Mnium venustum Mitt.
 punctatum Hedw.
 Menziesii Muell.
 Aulacomnium androgy-
 num Sch.
 Oligotrichum aligerum Mitt.
 Pogonatum alpinum Roehl.
 urnigerum Roehl.

- Polytrichum juniperinum* Willd.
Fontinalis Neo-Mexicana Sal. & Lesq.
chrysophylla Card, n. sp.
Dichelyma cylindricarpum Aust.
uncinatum Mitt.
Neckera Douglasii Hook.
Menziesii Drum.
Antitrichia curtispindula Brid.
Climacium dendroides W. & M.
Heterocladium heteropterum B. & S.
Clayopodium crispifolium Hk.
Camptothecium lutescens B. & S.
megaptilum Sulliv.
Amesii Ren. & Card.
Scleropodium obtusifolium Ren. & Card.
Isothecium stoloniferum Brid.
myosurioides Brid.
Eurynchium Stokesii B. & S.
Oreganum Sulliv.
Plogiothecium denticulatum B. & S.
undulatum B. & S.
Harpidium uncinatum Hedw.
Hypnum robustum Hook.
circinale Hook.
Dickii Ren. & Card.
plumifer Mitt.
ochraceum Turner.
Schreberi Willd.
Hylocomium splendens B. & S.
triquetrum B. & S.
loreum B. & S.
Botrychium Virginianum (L.) Sw.
Onondagense, Underw. (Piper).
silaifolium, Presl.
Polypodium occidentals Maxon (Piper).
Adiantum pedatum Aleuticum Rupr.
- Pteridium aquilinum pubescens* Underw.
Cheilanthes gracillima Eaton.
Cryptogramma acrostichoides R. Br.
Struthiopteris Spicant Weiss.
Athyrium cyclosorum Rupr.
Phegopteris alpestris Mett. (Piper).
Dropteris Fee.
Polystichum mimitum Presl.
Lonchitis Roth.
Dropteris spinulosa dilatata Underw.
Filix fragilis Underw.
Equisetum hyemale L.
Telmateia Ehrh.
fluviatile L.
Lycopodium lucidulum Michx.
Selago L.
clavatum L.
Selaginella rupestris Spring.
Taxus brevifolia Nuth.
Juniperus Sibirica Burgsd.
Chamaecyparis Nootkatensi Spach.
Thuja plicata Donn.
Pinus monticola Dougl.
contorta Dougl.
Abies amabilis Forbes.
grandis Lindl.
lasiocarpa Nutt.
Pseudotsuga mucronata Sudk.
Tsuga heterophylla Sarg.
Mertensiana Carr.
Sparganium simplex Huds.
angustifolium Michx.
Potamogeton Robbinsii Oakes.
Triglochin maritima L.
Phleum alpinum L.
Agrostis hyemalis (Watt.) B. S. P.
exarata Trin.
palleus Trin.
microphylla Steud.
aequalvis Trin.
vulgaris With.

- Cinna latifolia* Griseb.
Calmagrostis Canadensis acuminata Vasey.
 Howellii Vasey.
Deschampsia cespitosa Beauv.
 atropurpurea Scheele.
 elongata Munro.
Trisetum canescens Buckl.
 spicatum molle (Mx.)
 Piper.
Merathrepta Californica
 (Boland) Piper.
 intermedia Cusickii Williams.
Melica bromoides Gray.
 Harfordii Boland.
Pleuropogon refractum Vasey.
Poa paddensis Williams.
 Cusickii Vasey.
 gracillima Vasey (Piper).
Panicularia pauciflora Kuntze.
Puccinellia distans Parl.
Festuca subulata Trin.
 rubra L.
 ovina L.
 ovina supina Hack.
 occidentalis Hook.
Bromus eximius Shear.
Hordeum nodosum L.
Elymus glaucus Buckl.
Sitanion elymoides Raf.
 (Piper).
Scirpus microcarpus Presl.
Carex stipata Muhl.
 festiva pachystachya
 Bailey.
 Deweyana Schw.
 Bolanderi Olney.
 Rossii Boott.
 phaeocephala Piper.
 utriculata Boott.
 Sitchensis Prescott.
 Mertensii Prescott.
Lysichiton Kamtschaticense
 Schott.
- Juncus Mertensianus* Bong.
 tenuis Willd.
 Parryi Engelm.
 ensifolius Wiks.
 effusus L.
 effusus hesperius Piper.
Juncoides parviflorum Coville.
 campestre Kuntze.
Allium Tolmiei Baker.
Lilium parviflorum Holz.
Erythronium giganteum Lindl.
 parviflorum Goodding.
Veratrum viride Ait.
Tofieldia intermedia Rydb.
Stenanthium occidentale Gray.
Xerophyllum tenax Nutt.
Trillium ovatum Pursh.
Clintonia uniflora Kunth.
Vagnera amplexicaulis Greene.
 sessilifolia Greene.
Unifolium bifolium Kamtschaticum Piper.
Disporum Oreganum B. & H.
Streptopus amplexifolius D C.
 rosens Michx.
Corallorhiza Mertensiana
 Bong.
Ophrys cordata L.
 convallarioides Wight.
Peramium decipiens Piper.
Limnorchis stricta Rydb.
Salix Barclayi Anders.
 (Piper).
 Scouleriana Barratt.
 Sitchensis Sanson.
 lasiandra Benth.
Populus tremuloides Michx.
 trichocarpa T. & G.
Corylus Californica Rose.
Alnus sinuata Rydb.
 Oregona Nutt.
Urtica Lyallii S. Wats.
Asarum caudatum Lindl.
Oxyria digyna Hill (Piper).
Rumex occidentalis S. Wats.

- Polygonum Douglasii Greene. Saxifraga bronchialis L.
 bistortoides Pursh. Mertensiana Bong.
 minimum S. Wats. Marshallii Greene.
 Bongardi Presl.
 Chenopodium rubrum L. Therofon elatum Greene.
 Lewisia Columbiana Rob. Tiarella trifoliata L.
 Lewisia triphylla Rob. Tellima grandiflora Dougl.
 Claytonia asarifolia Bong. Mitella candescens Nutt.
 Sibirica L. Breweri A. Gray.
 parvifolia Moc. trifida Graham.
 Silene Douglasii Hook. Heuchera glabra Willd.
 Cerastium arvense L. (Piper).
 Alsine borealis Britt. micrantha Dougl.
 crispa Holz. racemosa S. Wats.
 Moehringia macrophylla Torr. (Piper).
 lateriflora Fenzl. Leptaxis Menziesii Raf.
 Sagina occidentalis S. Wats. Parnassia fimbriata Konig
 Anemone Drummondii S. (Piper).
 Wats. Ribes divaricatum Dougl.
 Pulsatilla occidentalis S. Wats. laxiflorum Pursh.
 Thalictrum occidentals A. sanguineum Pursh.
 Gray. bracteosum Dougl.
 Trautvetteria grandis Nutt. lacustre Poir.
 Ranunculus Flammula reptans Philadelphus Gordonianus
 Schlecht. Lindl.
 Eschscholtzii Schlecht. Opulaster opulifolius Kuntze.
 Bongardi Greene. Lutkea pectinata Kuntze.
 Cymbalaria Pursh. Spiraea Hendersoni Piper.
 Cattha biflora D C. Douglasii Hook.
 Trollius laxus Salisb. (Piper). densiflora Nutt.
 Aquilegia formosa Fisch. Aruncus Aruncus Karst.
 Actaea spicata arguta Torr. Schizonotus discolor Raf.
 Berberis nervosa Pursh. Rubus lasiococcus A. Gray.
 Achlys triphylla D C. pedatus Smith.
 Bikukulla formosa Coville. nivalis Dougl.
 Cardamine oligosperma Nutt. macropetalus Dougl.
 Kamtschatica Schulz. parviflorus Nutt.
 occidentalis Howell. spectabilis Pursh.
 Arabis hirsuta Scop. leucodermis Dougl.
 glabra Bernh. Rosa gymnocarpa Nutt.
 Erysimum arenicola S. Wats. Nutkana Presl.
 n. sp. (Piper). Campe barbarea Wight.
 Lepidium Menziesii D C. Sedum spathulifolium Hook.
 divergens S. Wats. Argentina Anserina Rydb.
 Leptarrhena amplexifolia Ser. Sibbaldia procumbens L.
 (Piper).

- Fragaria Chiloensis* Duch.
platypetala Rydb.
Geum macrophyllum Willd.
Amelanchier florida Lindl.
Pyrus diversifolia Bong.
Sitchensis Piper.
Prunus emarginata villosa
 Sudw.
Osmaronia cerasiformis
 Greene.
Lupinus rivularis Dougl.
Triflorum oliganthum Steud.
microcephalum Pursh.
Hosackia crassifolia Benth.
parviflora Benth.
Psoralea physodes Dougl.
Hedysarum occidentale
 Greene.
Vicia gigantea Hook.
Callitriche palustris L.
Rhus diversiloba T. & G.
Pachistima mysinites Raf.
Acer macrophyllum Pursh.
Douglasii Hook.
circinatum Pursh.
Rhamnus Purshiana D C.
Hypericum anagaloides
 C. & S.
Scouleri Hook.
Viola palustris L.
Howellii A. Gray.
adunca Smith.
glabella Nutt.
sempervirens Greene.
Circaea Pacifica Ach. & Mag.
Epilobium angustifolium L.
luteum Pursh.
minutum Lindl.
Hippuris vulgaris L.
montana Ledeb. (Piper).
Echinopanax horridum Dec.
 & Planch.
Washingtonia ambigua C. & R.
Heracleum lanatum Michx.
Angelia arguta Nutt.
genuflexa Nutt.
Conioselinum Gmelini C. & R.
- Lomatium Martindalei* angus-
 tatum C. & R.
 Hallii C. & R.
Oenanthe sarmentosa Presl.
Lilacopsis occidentalis C. & R.
Coelopleurum longipes C. & R.
Cornus occidentalis Coville.
Nuttallii Audubon.
Canadensis L.
Chimaphila umbellata Nutt.
Menziesii Spreng.
Pyrola secunda L.
aphylla Smith.
picta dentata Piper.
bracteata Hook.
Allotropa virgata T. & G.
Pterospora Andromedea Nutt.
Monotropa uniflora L.
Hypopitys L.
Hemitomes congestum A.
 Gray.
Arctostaphylos tomentosa
 Dougl.
Uva-Ursi Spreng.
Arbutus Menziesii Pursh.
Cassiope Mertensiana G. Don.
Phyllodoce empetriformis D.
 Don.
Rhododendron Californicum
 Hook.
albiflorum Hook.
Menziesia ferruginea Smith.
Gaultheria Shallon Pursh.
ovatifolia A. Gray.
humifusa Rydb.
Vaccinium ovatum Pursh.
uliginosum L. (Piper).
caespitosum Michx.
macrophyllum Piper.
scoparium Leiborg.
ovalifolium Smith.
parvifolium Smith.
Dodecatheon Jeffreyi Van
 Houtte.
Douglasia dentata S. Wats.
Trientalis latifolia Hook.
Fraxinus Oregona Nutt.
Phlox diffusa Benth.

- Gilia gracilis* Hook.
Collomia heterophylla Hook.
Polemonium humile R. & S.
(Piper).
Hydrophyllum tenuipes Heller.
Nemophila parviflora Dougl.
Phacelia sericea A. Gray.
heterophylla Pursh.
Romanzoffia Sitchensis Bong.
Mertensia Sibirica Don.
Stachys ciliata Dougl.
pubens Heller (Piper).
Micrormeria Chamissonis
Greene.
Collinsia tenella Piper.
Pentstemon Menziesii Hook.
diffusus Dougl.
Chelone nemorosa Dougl.
Veronica alpina L.
Americana Schwein.
Mimulus Lewisii Pursh.
moschatus Dougl.
Langsdorffii Donn.
Pedicularis contorta Benth.
bracteosa Benth.
Castilleja miniata Dougl.
angustifolia G. Don.
Orthocarpus castilleoides
Benth.
Boschniakia strobilacea A.
Gray.
Pinguicula vulgaris L.
(Piper).
Plantago maritima L.
Galium Aparine L.
Kamtschaticum Steller.
trifidum subbiflorum
Wiegand.
triflorum Michx.
Linnaea Americana Forbes.
Symphoricarpos mollis Nutt.
Lonicera involuocrata Banks.
- Sambucus glauca* Nutt.
callicarpa Greene.
Valeriana Sitchensis Bong.
Campanula Scouleri Hook.
rotundifolia L.
Piperi Howell.
Agoseris laciniata Greene.
Hieracium albiflorum Hook.
Nabalus hastata Heller.
Lactuca spicata Hitchcock.
Gaertneria bipinnatifida
Kuntze.
Grindelia Hendersoni Greene.
Chrysopsis Oregana A. Gray.
Erigeron saluginosus A.
Gray.
compositus Pursh.
Philadelphicus L.
Aster foliaceus frondeus
A. Gray.
major Porter (Piper).
Eucephalus paucicapitatus
Greene (Piper).
Madia racemosa T. & G.
Eriophyllum lanatum Forbes.
Artemisia Tilesii Ledeb.
Arnica latifolia Bong.
mollis Hook.
Petasites speciosa Piper.
frigida Fries.
Luina hypoleuca Benth.
Senecio triangularis Hook
(Piper).
Antennaria Howellii Greene.
Anaphalis margaritacea occi-
dentalis Greene.
Gnaphalium purpureum L.
microcephalum Nutt.
Adenocaulon bicolor Hook.
Carduus edulis Greene.
Saussurea Americana Eaton.

VERY EARLY ASCENTS.

George H. Himes.

As one of the results of the thirty-fifth annual meeting of the Oregon Pioneer Association, I secured a little data respecting the climbing of Mount Adams, in which you will doubtless be interested, and which has never before been made a matter of record. In conversation with Mr. A. G. Aiken, of Marshfield, Coos County, Oregon (who, by the way, was in the same train to which I belonged while crossing the plains in 1853), I learned that Edward J. Allen, Andrew J. Burge and himself made the ascent late in August or early in September, 1854. These persons belonged to a party of men who left Steilacoom a few weeks before the ascent was made to work on the military road that was then being constructed by government authority from the Columbia River through the Natches Pass to Puget Sound, following generally the trail partially made by the immigrant party of the fall of 1853. It was while this company was camped a few miles northeast of the base of Mount Adams that the three above-mentioned persons decided to make the climb. As I have had a personal acquaintance with all three men, I have no doubt as to the fact of their making a successful ascent. At last accounts Mr. Burge and Mr. Allen were living, and as it is a matter of general interest, to all Mazamas at least, I hope to secure full details of this, probably the first known ascent of Mount Adams, in a few weeks.

In this connection it is proper to state that in a recent interview with Colonel Shaw, already mentioned in this issue of Steel Points, I learned that he, with Sidney S. Ford and a man named Bailey, made the ascent of Mount Rainier in August, 1854. While Colonel Shaw does not claim to have been on the highest point, he does say that no other point seemed higher than the one whereon his party stood.

Not many weeks ago I discovered an account of the ascent of Mount Jefferson in the year 1857, and if I am not mistaken, published in one of the early papers of Oregon. The account was written by George L. Woods, one of

the parties making the ascent. He was afterwards (1867-1871) Governor of Oregon. I expect to have the article in my possession soon, and hope to give particulars in your next issue.

In a "Journal of Travels Over the Rocky Mountains to the Mouth of the Columbia River, Made During the Years of 1845 and 1846," by Joel Palmer, who afterwards became one of the most influential and best known men of Oregon, printed in Cincinnati, Ohio, in 1847, I find an account of the ascent of Mount Hood by Mr. Palmer on October 12, 1845. A footnote reads as follows:

"The opinion heretofore entertained that this peak could not be ascended to its summit, I found to be erroneous. I, however, did not arrive at the highest peak, but went sufficiently near to prove its practicability. I judge the diameter of this peak, at the point where the snow remains the year round, to be about three miles. At the head of many of the ravines are perpendicular cliffs of rocks, apparently several thousand feet high; and in some places those cliffs rise so precipitately to the summit that a passage around is impracticable. I think the southern side affords the easiest ascent. The dark strips observable from a distance are occasioned by blackish rock, so precipitous as not to admit of the snow lying upon it. The upper strata are of gray sandstone, and seem to be of original formation. There is no doubt but any of the snow peaks upon this range can be ascended to the summit."

So far as I am advised at present this is the earliest record known of an attempted ascent of Mount Hood.

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H. STREY, Plano, Ill.

BOX 501

Which is the best state in the union?
OREGON.

Which is the best county in the state?
KLAMATH.

O stands for Oregon. **O**

K stands for Klamath. **K**

O. K. stands for Oll Korrekt. **OK**

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