

EM
Historical Data
Columbia

HISTORICAL DATA

COLUMBIA NATIONAL FOREST

PREPARED - WINTER, 1927.

C O N T E N T S

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Extracts from "The Seven Indian Tribes of Washington" by
J. Neilson Barry.

Extracts from "Reports of Explorations and Surveys from
Mississippi to Pacific Ocean 1853-55.

Extract from Report of Geo. Gibbs to Captain McClellan upon
the Geology of the Central Portion of Washington
Territory, May 1, 1854.

Itinerary of Capt. McClellan's Route, prepared by J.F. Minter
February 25, 1854.

Extract from Report of Lieut. S. Mowry to Capt. McClellan
of the Meteorology of the Cascades, February 10, 1854.

Topographical Report of Lieut. Duncan, Topographer,
February 21, 1854.

General Reports of the Survey of the Cascades,
February 25, 1853.

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Extracts from a pamphlet by J. Neilson Barry on - "The Seven Indian Tribes of Washington" - very graciously loaned to this office March 8, 1927, by Mr. Barry:

"THE SEVEN INDIAN NATIONS IN WASHINGTON"

	<u>Division or Tribe</u>	<u>Sub-tribes, or settlements</u>
1. Ath-a-pas-can	1	
2. Chim-a-ku-an	2.....	1
3. Chin-ook-an	11.....	27
4. Sa-lish-an	13.....	111
5. Sha-hap-tian	6.....	18
6. Wa-kash-an	1.....	11
7. Wai-i-lat-pu-an	<u>1</u>	<u> </u>
Total.....	35 tribes	168 bands

- - -

III. The Chin-ook-an.

The Chin-ook-an linguistic family lived along the Columbia River, from The Dalles to the ocean, and on the Pacific coast near the mouth of the Columbia. They were noted for their skillful handling of their canoes. They lived in large houses, or sheds, made of planks. They were a commercial people, bartering with other tribes. The great trading mart at Wishram was possibly the most important in America, and is probably one of the oldest settlements in the United States.

(NOTES)

The Chin-ook-ans.

(1)	Willapa	3 bands or settlements
(2)	Chinook	7
(3)	Wahkiakum	3
(4)	Skilloot, or Kreluit	2
(5)	Thla-ka-la-ma	1
(6)	Cath-la-po-tle	1
(7)	Sho-to	1
(8)	Sha-ha-la	3
(9)	Wat-la-la	3
(10)	Chil-luck-kit-e-quaw	2
(11)	Tlak-luit	19, only one given.

(1) Wil-lo-pa, or Will-a-pah.

On Willapa Bay. Pacific county

The Chehalis called all Chinookan living on Willapa Bay
Ats-milt or Kar-wee-wee.

(a) Na-ya-ko-lo-le- or Kwul-kwul
Near Bay Center.

(b) Que-la-ton-lit, near South Bend.

(c) Talal, or Ford's Prairie, 6 miles south of Claquato.
Handbook American Indians, Vol.II, p. 677.

(2) Chi-nook. In Pacific County.

(a) Pa-lux, or Pa-liz, on Palix River.

(b) Ne-mah, on Nemah River.

(c) Na-sel, on Nasel River.

(d) Whar-hoots, at Bruceport.

(e) Git-lap-sho-i, at Sealand (?)

(f) Kil-laxt-ho-kle, or Ca-last-ho-cle, not identified.

(g) Chinook village. Near Ilwaco. This was a very famous village
which was prominent in history.

(3) Wah-ki-a-kum, or Wack-ki-a-cum.

From Grays Bay to Oak Point. Wahkiakum County.

(a) Chak-wa-yal-ham, near Pillar Rock.

(b) Tla-la-gak, near Pillar Rock.

(c) Tlash-gen-e-mak-e, near Skamok-awa.

Notes.

- (4) Skil-loot, or Krel-u-it
On both sides of the Columbia, from Oak Point to the Cowlitz river, in Cowlitz County.
- (a) Tla-kat-la-la, near Stella.
- (b) Se-a-mys-ty, or Moo-woot-soo at the mouth of the Cowlitz river.
- (5) Thla-ka-la-ma, or Kla-ka-la-ma.
On Kalama River.
- (6) Cath-la-po-tle, or Cath-lah-poh-tle.
On the Lewis River, Cowlitz and Clark Counties.
- (7) Sho-to, near Vancouver Lake, Clark County.
Wa-kak-a-si-si, or Wa-kan-a-shee-shee village opposite the mouth of the Willamette was the home of the noted chief, Kiesno, spelled in many ways. His band having moved to this village from near St. Helens, Oregon.
- (8) Sha-ha-la, or Shah-ha-la.
They call themselves Kat-la-gak-ya.
From Vancouver, Washington, to the Cascades.
The Ne-er-chee-ki-oo village so often mentioned by Lewis and Clark was on the Oregon side, near Vancouver Barracks.
- (a) Clah-olel-lah, at the old garrison, opposite Bonneville, in Skamania county.
- (b) Wah-olel-lah, near Skamania.
- (c) Cath-lath-la-la, on both sides of the Columbia near the Cascades, in 1912.
- (9) Wat-la-la, or Ki-gal-twal-la.
From the Cascades to White Salmon river, Skamania county.
There were a great many Indians from distant parts who made temporary settlements around the Cascades during the fishing seasons. Many early writers used various names for settlements which cannot now be identified. There were three which appear to have belonged to the resident Indians, near the Cascades.
- (a) M-e-hut, or Wy-eh-hoo
- (b) Wah-e, or Wah-he.
- (c) Cath-la-yack-ty, or Cath-lak-a-heck-it.

Notes.

(10) Chil-luck-kit-s-quaw.

From White Salmon river to near Lyle, Klickitat county.
A number of names of villages were mentioned by various writers.

(a) Smack-sho was a sub-tribe.

(b) Clat-a-cut, or Hlad-a-khat, near Lyle.

(11) Flak-luit, or E-choe-lute.

In the vicinity of The Dalles, Klickitat county.
Nineteen villages are named in the Handbook of American Indians, Volume II, p. 762. During the fishing seasons large numbers of Indians congregated in this vicinity, many of them having come from great distances.

Wish-ram or Wush-num, near Granddallaes, was very noted, and still exists.

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McClellan's Trail.

March 9, 1927.

Governor Stevens' Exploration Travels.

The following notes from Governor Stevens' diary were made on the occasion of his meeting Captain McClellan at Colville, Washington, after McClellan had crossed the Klickitat Pass through what is now the Columbia Forest, coming from Fort Vancouver in July, 1853:

"October 19. - This morning I met Captain McClellan and the gentlemen of his party, and possessed myself of the main facts of the explorations made by them of the Cascades. The map had been well kept up by Mr. Duncan, the topographer; and all the gentlemen had seemed to cooperate most zealously with Captain McClellan in the discharge of their duties.

"Captain McClellan reached Vancouver on the 27th of June; but finding much difficulty in procuring the proper pack animals, and other necessary outfit, he did not get his party in motion until July 18. The necessity of having Lieutenant Saxton's train off as soon as practicable, and the preparation of his party, delayed him, besides thus exhausting the supply of serviceable animals; and Indian horses, many of them of poor quality, had to be substituted for the mules, which, for service in such a country, should be of the best kind only.

"The party, as finally organized, consisted of Captain McClellan, Lieutenant Duncan, 3d artillery, as astronomer, topographer, and draughtsman; Lieutenant S. Mowry, 3d artillery, meteorologist; Mr. Gibbs, geologist and ethnologist; Mr. J.F. Minter, assistant engineer; Dr. Cooper, surgeon and naturalist; Mr. Lewis, interpreter; five assistants carrying instruments, etc.; two sergeants, two corporals, and twenty-four privates as escort and workmen; twenty-two packers and three hunters and herders made the whole number sixty-six.

"Guides were engaged among the Indians as they passed from one tribe to another, few knowing more than a very small area of country around them. The animals obtained were one hundred and seventy-three in number, of which only forty-six were mules, and one hundred of all were used for packing. The pack-saddles brought from San Francisco proved worthless, as well as those brought from the Hudson Bay Company, and about fifty old-pattern dragoon saddles, which happened to be at Vancouver, fortunately filled their place admirably, as far as they went. The almost unknown character of the country to be traversed, and the uncertain disposition of the Indians made it advisable to take a larger party than was afterwards found necessary.

Notes.

The country east of the Cascade range being more open and traversable than that on the western slopes, it was considered best to reach there early and conduct the examination of the mountains by striking in with small parties whenever a practicable pass was met with. The unusually high stage of water in the Columbia made the usual trail eastward, on its banks, impracticable, and that of the Klikitat Pass, near Mt. St. Helens and Adams, was adopted.

"This trail being but little used, and much obstructed by brush and fallen timber which required cutting, the party made slow progress at first, and reached the summit of the mountains on the 5th of August, having made only seventy-eight and three-quarter miles in twelve days' travelling. The route up the western slope was through a densely timbered country, some small prairies occurring at intervals in the valley of the Cathlapootle and its branches. These became fewer, and grass was scarce, as the train progressed, so that the animals suffered severely, while, from the flooded state of the valleys, or the ignorance of the guides, he was led over some very rough mountain spurs, among which one of the best mules got killed by rolling down a precipice. On the mountain summit excellent pasture was found, though timber of immense size still covered all but the highest peaks, up to an elevation of 4,500 feet more.

Three days' halt was made there to refresh the animals and to examine the country. As there seemed to be no practicable road pass in this portion of the mountains, Captain McClellan resolved to pass along their eastern slopes northward to Mount Rainier, where better passes were said to exist.

"The first pass explored across the Cascade range was, therefore, the Klikitat. This ascends the west side by the valley of the Cathlapootle, which has numerous beautiful prairies on its lower portion, and presents no difficulty for twenty miles upward. But, on account of the uncommonly late continuance of the summer flood, Captain McClellan was obliged to take a different course to reach it, crossing several rough and densely wooded spurs northeast of Vancouver, among which there are numerous small but rich and beautiful prairies, and good soil almost everywhere, even in the gigantic forest by which they are surrounded.

"The Cathlapootle was struck about twenty-five miles from its mouth, where it runs between rugged broken hills, leaving sufficient valley for a wagon road of ten miles further, when for the remaining fifteen miles spurs coming in on each side to the river bank compel several crossings; when leaving the valley the trail led up a very steep mountain side to a rolling table land at its summit.

"Except this steep ascent, which might, doubtless, be avoided by a different location of the route, there is no great obstacle to the construction of a wagon road up to this elevated region, where there is a great extent of beautiful and rich pasture land, and where even cultivation of some products might be successfully carried on."

"Its general elevation is from 3,000 to 5,000 feet above the sea, and its delightful climate, in the middle of the summer, alone offers much inducement for further exploration.

Notes.

"Besides the Cathlapootle, flowing west, there are the Washookat, Wind, White Salmon, and Klikitat rivers running from it toward the south, and emptying into the Columbia, fifteen or twenty miles from the line crossed over by the western division. These all offer avenues of approach, and probably have much fertile land in their course. No cold weather was experienced until at the highest camp, Cheguos, already alluded to, where, on the night of August 8, ice formed to the thickness of about an eighth of an inch. Though, as usual in mountainous countries, the nights were cool, the heat, even on this elevated region, became oppressive by day. On August 11 he commenced the descent of the eastern slopes, and at once found the forests more open and traversable, consisting of yellow pine, with little undergrowth, and generally a grassy sward beneath. After five days' journey through this he entered the open central plains, then very dry and barren in appearance, the tops of the ridges near the mountains being rocky and almost destitute of vegetation. The small valleys on the branches of the Yakima showed, however, by the height of the grass, although as brown and dead as in winter, that they were capable of cultivation earlier in the year. Near the Alahuane Mission the priests and Indians raise very fine potatoes, besides melons and squashes.

Notes.

Extract from Report of George Gibbs, to Captain George B. McClellan,
upon the Geology of the Central portion of Washington
Territory, May 1, 1854.

The first rock in place encountered after leaving Vancouver was near the Yahkohtl fork of the Cathlapoot'l river, and was a hard and dark-green hornblende, without noticeable strike or inclination to the beds. This rock forms the canon off the stream and prevails to the Cathlapoot'l itself. Boulders of trachyte accompanied the sand and gravel in the Yahkohtl, but not in such quantity or variety as in the main fork which heads in Mt. St. Helens. The divide between the latter and the Columbia is about 1,800' in height, presenting a steep and almost precipitous face to the north. The hornblende rock is said to extend down the Cathlapoot'l to within a few miles of its mouth. Sandstone of volcanic origin appeared in large masses on the borders of the river, and probably occurs in place at no great distance. The boulders in its bed are chiefly trachyte of different shades, and basalt, varying from scoriaceous to compact, and very fine grained. There is but little valley on its upper waters, and that of no value, as the soil consists almost entirely of the detritus of these rocks. As might be supposed from its draining the southern and eastern slopes of Mt. St. Helens, the river bears evidence of its great volume during the melting of the snows.

On the north bank of the Cathlapoot'l, and about four miles below the mouth of the Noomptnamie, we crossed a field of lava apparently formed by a stream from St. Helens. Its surface was everywhere broken into mounds, or gigantic bubbles, produced apparently by the expansion of contained gases, or perhaps the moisture of the soil over which it had flowed. These mounds, which were generally of an ovoid shape, varied in size from six or eight feet to a hundred in length, and in some cases rose to twenty and thirty feet in height. Their tops were broken into fissures, the principal corresponding with the longer axis. The direction of this was no uniform, but in the larger seemed to agree with what is supposed to have been the course of the current. The edges of the fissures were perfectly sharp, indicating that the lava had at least partially cooled before fracture; but on the other hand, quantities of loose clinkers lay upon the sides of the mounds, and small waves produced by the progression of the lava were visible, which seemed to diverge from them. Flat slabs, resembling flags, two or three feet long and a couple of inches thick, also occurred. The surface was vespicular, the inferior portions as seen through the fissures more compact; its depth was not determined. The field had been covered with forest, which like much of that on the route, had been burnt over. Unfortunately, time did not admit of a visit to the river to examine the termination of the stream, nor yet to the bluffs on the left, to ascertain if the lava underlaid them. These bluffs, extending in a line with the river for some distance, were in places three or four hundred feet in height, composed of sand and boulders of trachyte. The width of this field was about one-third of a mile. A bed of fine volcanic ashes covered the ground for some hundred yards beyond it, and pumice was occasionally found along the route. This is supposed to be the most recent lava ejected from St. Helens.

Leaving the Cathlapoot'l, we commenced the ascent of the Cascade range. The eastern side of the valley rises in high tables, with level tops and steep banks, which are continued to the summit. Unfortunately we could obtain no view of the country, the smoke from the burning timber, which had prevailed for some days, effectually obscuring the atmosphere. The rock

in place was a gray feldspathic trap, covered on the surface with a whitish coating. Large, loose blocks of the same and of trachyte were scattered around. Basalt prevails upon the summit, and forms turrets and pinnacles on some of the heights around St. Helens and Mount Adams. Elsewhere the hills are covered with reddish scoria. One field of lava was passed, fractured in the same manner as that on the Cathlapoot¹, but apparently of older date, and assuming columnar forms, which was not the case with the latter.

The height of Chequoss where the party encamped from the 8th to the 10th of August was 4,053 feet. It is a circular basin, containing a small pond, one of a number lying at the head of the White Salmon river, and presenting the appearance of an ancient crater. Notwithstanding its elevation, this spot is tolerably fertile; the basin, as well as the hills around it, being covered with grass and producing strawberries in profusion, which were in season at the time of our visit. The soil of the mountains is a yellowish loam, except where colored by the decomposition of scoria. The character of the forest changes entirely with the summit of the Cascades. The details of this change belong to another report, but it is proper to refer to it in connection with the geological face of the country. The arbor vitae does not cross the dividing ridge; the fir~~s~~ and spruces are speedily lost, and succeeded at first by intermixed larches and pines, and lower down by the pine alone. The larch seems to be confined altogether to the eastern side of the mountains, and the long-leaved pines nearly so. The limit of the firs on the eastern slope would seem to be not far from three thousand feet above the Columbia. The forest retains a considerable size to nearly four thousand feet.

During our stay at Chequoss the weather was only at intervals clear enough to afford a view of the mountains; with the exception of the great snow-peaks, their aspect is that of a chaos of hills, of very equal height rising from an elevated plateau, but few points rising to a greater elevation than 5,000 feet, which is about that of the snow-line on Mount Adams. No ranges of any great length were distinguishable; the sides of the hills were long, sweeping slopes, enclosing shallow valleys which extend to the very feet of Mounts St. Helens and Adams, and some of which contain marshy prairies, the beds of ponds. The range in this part appears to be about thirty miles in width at the base and fifteen on the top, the steepest slope being to the west. From the hills around Chequoss, the five snow-peaks - Mounts Hood, Jefferson, St. Helen, Adams and Rainier - were visible, Mounts Hood and Jefferson bearing southwesterly; Mount St. Helens nearly northwest; Mount Rainier a little west of north, and Mount Adams north. The latter was not more than fifteen or twenty miles distant. The height of Mount Rainier, as given by Captain Wilkes, is 12,330 feet, and that of St. Helens 9,550; from which last Mount Adams does not apparently vary much. It is not a little singular that neither Lewis and Clark, nor Lieut. Wilkes, distinguished Mount Adams as a separate peak from St. Helens; for, although they resemble each other considerably in general form, their positions and range are very different. Mount Adams alone is visible from the Dalles; but both of them as well as Rainier, can be seen from a slight elevation at the mouth of the Willamette. The sketches of Lieut. Duncan, accompanying the reports, will better convey an idea of these mountains than a mere verbal description. The angle of incidence of their sides was taken by a clinometer. The steepest continuous face of St. Helens, disregarding precipices, was about 40 degrees, and none of the others exhibit a greater declivity. The crater of Mount Hood is on its south side; that of Mount St. Helens on the northwest, and of Mount Adams apparently on the east; that of Rainier seems to have been at the summit. Smoke was distinctly seen issuing from St. Helens during our journey. This and Mount Baker

are the only volcanoes at present active in the chain. Its last considerable eruption was in 1842, when it covered the country as far as Vancouver and The Dalles with ashes, and presented a luminous appearance after the smoke had cleared off. The Indians report that there were once three mountains that smoked always, Mount Hood and Mount Adams being the others. Respecting Mounts Hood and St. Helens, they have a characteristic tale to the effect that they were man and wife; that they finally quarrelled and threw fire at one another and that St. Helens was the victor; since when Mount Hood has been afraid; while St. Helens, having a stout heart, still burns. In some versions this story is connected with the slide which formed the Cascades of the Columbia, and by damming up the water inundated the forest, the remains of which are now visible along its margin. The date of this event Lewis and Clark fixed at about thirty years before their arrival. It is very probable that it may have been due to an earthquake, as they, though not frequent, are known upon the coast. The Indians have no tradition of an eruption of lava; they have only seen smoke and ashes come out of the mountain. They add that a bad smell came from it, and that the fish in the streams died. Around the foot of St. Helens, they say, the ashes lie so deep and soft that horses cannot travel. The state of the weather, and the more urgent business of the survey, prevented an attempt to ascend either of the mountains.

The descent of the Cascade range to the east is far more gradual than on the western side, and the slope comparatively uninterrupted. Above four miles from Chequoss, and probably seven hundred feet below it, there is another lava field, broken up into mounds like the two former. We found on its verge a small lake of irregular form, and occupying, when full, about one hundred acres but at the time very low. It is sunk a few feet beneath the general surface; is shallow, and the water clear and cold. There was no visible outlet, nor any motion indicating a sink, though it received three brooks, one of them fifteen feet across. At the lower end large piles of drift-wood, including trees two and three feet in diameter, had been washed on to the field to the height of some twenty feet at the point of escape during freshets. It was somewhat remarkable that this pond was surrounded by gigantic cotton-wood trees, though the elevation was not less than three thousand three hundred feet. One of the party, who had passed through the woods between the lake and Mount Adams, reported that the lava did not extend in that direction; but whether this arose from its being overlaid with soil, or from having some other source, could not be decided without further examination. The country being covered with burnt forest and underbrush, this was not easy to make. The lake itself was evidently not the crater from which it flowed. Its course would seem to have been from that mountain and towards the Columbia through the valley of the White Salmon, as a dividing ridge separates it from the Klikatat river to the east. The lava here, and generally upon the eastern slope of the mountains, appeared much older than that upon the Cathlapoot¹, the sharpness of fracture being lost, and the surface being more decomposed. Leaving the waters of the White Salmon and crossing a dividing ridge, the trail descended to the Klikatat, a larger stream, heading on the east side of Mount Adams, and, like the last, emptying into the Columbia between the Dalles and the Cascades. Here we met another field of lava, through which ran a line of openings caused by the falling in the rock covering a vaulted passage. Though dry at the time of our journey, this is evidently during the winter the bed of a torrent which runs towards the Klikatat. Apparently the lava, in overflowing the original bed, had come in contact with sufficient moisture to elevate without rupturing it. The upper stratum was about eighteen inches thick, and regularly arched; its semi-columnar structure giving it the appearance of keyed joints. The lower

were more or less distorted, and varied from a few inches to several feet in thickness. They differ also in structure, being much more compact. All of them exhibited a large proportion of feldspar, which seems to be the characteristic of those streams supposed to be traceable of these two mountains, as distinguished from the basalt of the plains. The roof of this passage was broken through at short intervals, and large masses had fallen from the inferior layers of what remained, showing that the work of destruction was still going on. The bed of the water-course was about twenty-five feet beneath the surface, and the vaults were from twenty-five to thirty feet wide, and fifteen or twenty in height. The under side of the strata occasionally exhibited fluxures, resembling waves of progression. Small stalactites of infiltration hung from the roof and walls, and stalagmites had been deposited on the floor. This remarkable passage was traced at intervals for three or four miles, and probably terminates in a branch of the Klikatat river crossed by the party the next day. The Indian guide obtained snow from some cavity in this field, and reported that there was one hole into which, if a stone was dropped, a long time elapsed before it was heard to strike.

The soil of the valley which we descended consisted of a yellowish, light sandy loam, for the most part thin, and lying directly upon the basalt. Lower down the mountain it became deeper, and on the banks of the streams showed a depth of six or eight feet. Below the limit of the firs the forest was open, and the ground covered with an abundant growth of excellent grass, forming a good stock-range during the summer season. It is believed that wheat would flourish here; but the general want of water, except on the streams, and the coldness of the climate, will probably prevent its occupation except for grazing. With this branch of the Klikatat river a further change occurs in the rock, the range of hills lying to the east of it consisting of the same gray trap noticed in the ascent from the Cathlapoot¹, and, it would seem, bounding the efflux from the mountains in this direction. From the cursory observations of this journey, it is inferred that the more recent lava from these sources is confined within a particular basin, separated by well-defined boundaries from the basalt of the prairies, from which it differs considerably in apparent structure, and probably in composition also. Should a thorough geological exploration of this region be hereafter undertaken, it will prove a matter of interest to trace up the course of the streams, and fix the true relations of the existing volcanic peaks to these formations.

? White Salmon?

Between the branches of the Klikatat is the Tahk prairie, the waters of which communicate with the main river. It is about six miles in length, by a mile in its greatest width, and is 1,268 feet above Vancouver. A shallow, marshy lake occupies its lower end, the remains of one which formerly covered the whole and extended much beyond the present bounds of the open land. It is a favorite kamas and wappatoo ground of the Inidans. The soil is a bluish clay, baking very hard and cracking in the sun, and forms a great contrast with that bordering it, which is light and pulverulent, and deeply colored by oxide iron. The dark hornblende rock first noticed on the Yahkoti occurred in place again here, but much more impregnated with iron. The hills are barren and covered with scattered blocks. The main Klikatat river we found running in a bed about two hundred feet below the general surface. It was at this season (August 13) thirty or forty yards wide, and up to the flanks of the horns with a pretty swift current. Its advantages for lumbering deserve particular attention. The yellow pine is found in abundance, of excellent quality and suitable size, everywhere upon its banks, and logs can be run at any season of the year without much difficulty to the Columbia. This river heads in Mount Adams. The boulders in its bed resemble in every respect those

found in the Cathlapoot'l. Its intersection with the trail is the lowest point touched by the main party from the time of leaving the Cathlapoot'l to that of reaching the Columbia below the Pisquouse. The descent of the Cascade range may be considered as terminating here, and the survey of its eastern slope to have commenced.

Notes.

34. Itinerary of Captain McClellan's Route; Prepared by J.F. Minter.

Olympia, Washington Territory,
February 25, 1854.

Sir: I have the honor to submit the following itinerary of the route pursued by the party under your command, in an exploration of the Cascade mountains, during the months of July, August, September, October, and November, 1853.

	Miles
July 18, 1853. - From Fort Vancouver to camp Wahwaiksee; wagon road through fir, with dense underbrush; road good; crossed a running creek-	1 $\frac{1}{2}$
Camp on a small plain, grass and wood good; water half a mile distant - - - - -	$\frac{1}{2}$
	2 $\frac{1}{2}$
July 21. - To camp Kelsas, road same as on the 18th; crossed two small prairies with good grass; crossed small stream - - - - -	4 $\frac{1}{2}$
Camped on a large prairie; grass indifferent; water for animals quarter of a mile from camp - - - - -	$\frac{3}{4}$
	5
July 22. - To camp Six-Sik; Indian trail passing for one mile through Kolsas prairie, thence through a dense fir forest, with much underbrush and fallen timber; country flat; much labor to clear the trail from here to Chequoss; no water during the march; camped in a small prairie near a little brook; soil poor, grass good; seven hours and a half from camp to camp -	6
July 23. - To Camp Mesache. Country rougher than heretofore. Crossed two boggy creeks, and two with fine crossings; much fallen timber and brush; timber as before; camped on a small stream fifteen feet wide; grass in small openings of the forest; twelve hours from camp to camp - - - - -	6 $\frac{1}{2}$
July 24. - To camp Mankas. Country becoming still rougher; obstructions on the trail very great, but rather less than yesterday; crossed a fine stream; bottom thickly overgrown; soil good - - - - -	3
Crossed a rivulet - - - - -	2 $\frac{1}{2}$
Encamped on a small prairie; good grass; water inconvenient; camp to camp eight and a half hours - - - - -	$\frac{1}{2}$
	6
July 25. - To camp Yahkohtl. Country becoming rougher; obstructions on the trail, principally from dead timber, descended a very steep hill with a small stream at the foot, a branch of the Yahkohtl - - - - -	3 $\frac{1}{2}$
Crossed a rough divide, and descended a long and steep hill to Yahkohtl River - - - - -	1 $\frac{1}{2}$
Passed over a rolling country, with open woods on the higher portion; thick brush in the bottoms; camped on the edge of Yahkohtl prairie; soil and grass good; good water in running stream close to camp - - - - -	5
	9 $\frac{1}{2}$
July 31. - To camp Chalacha. Country rolling; some short, steep hills, dense underbrush and timber; many fallen trees; crossed five streams - -	2 $\frac{3}{4}$
Crossed another, but small stream - - - - -	2
Travelled up the prairie and encamped. Good water and grass - - -	$\frac{5}{4}$
	5 $\frac{1}{4}$

Notes.

	Miles
August 1. - To camp Spilyeh. Country rolling and heavily timbered with fir, oak, white maple, and cedar; crossed small rivulet in a deep ravine - - - - -	1
Crossed four small plains covered with fern to the height of the head of a mounted man; commenced descent into the valley of the Cathlapoot'l - - - - -	3
This descent is long, steep and dangerous; the trail winding down the narrow crest of a ridge, with a precipitous descent on each side. Here we lost a mule, killed by falling over the steep side-slope. At the foot of the descent a small spring branch, sandy bottom, of half a mile and cross Cathlapoot'l - - - - -	1½
Pass over rough and thickly timbered country; cross Spilyeh Creek - - - - -	2½
Travel over a similar country, and camp in a plain one mile long; grass and water good - - - - -	2½
August 2. - To camp Lakas. Country level and open, but much heavy fallen timber; cross small stream - - - - -	2½
Pass through small plain, covered with fern; descent steep hill and touch Cathlapoot'l - - - - -	2½
Follow valley of the stream, over stony beach; current rapid; bottom of large stones - - - - -	1½
Follow left bank of the stream, and encamp in the woods; no grass - - - - -	½
	6½
August 3. - To camp Noompt-hah-mie. Crossed river a few hundred yards above camp. During the march crossed one fine stream, coming in on the right bank, three miles from camp; afterwards three spring branches; trail keeps near the river; heavy brush; in one spot a fine grove, country barren; passed over a tract of lava three quarters of a mile in length; crossed the Noompt-nah-mie near the mouth, and encamped at the crossing; no grass, crossing difficult in low water; impossible in high water - - - - -	8
August 4. - To camp Wininepat. Crossed a high, narrow ridge, with steep ascent and descent; small brook at its foot on north side; pass through open woods of fir, cedar, maple, and alder; crossed another rivulet, and then crossed the Cathlapoot'l; followed the stony beach half a mile, and recrossed - - - - -	2½
The trail passes through a small opening, and then a new trail was cut through the thick brush and fallen timber for about two miles to avoid a very deep crossing; crossed two bad sloughs; encamped on the bank of the river; no grass at camp; crossed the animals to a small island where there was a scanty supply - - - - -	4
	6½
August 5. - To camp Wahamis; passed through open pine woods, and crossed the Cathlapoot'l - - - - -	½
Leave the river and ascend five terraces, and reach the base of a high ridge - - - - -	3½
Ascend the ridge by a winding trail, so steep as to be barely practicable - - - - -	1
Descend on a gradual slope and over rolling country through open pine woods; passing one opening with good grass and water - - - - -	1½
Thence through similar country to camp in a marshy valley, with good grass and water - - - - -	½
	6½

Notes.

Miles

August 6. - To camp Yawakamis; over a high, rolling country, through a small growth of fir and pitch-pine, to a small prairie with good grass and a small creek; considerable fallen timber thus far - - - - - $5\frac{1}{2}$
 Over a high ridge to a spring branch, with no grass - - - - - $\frac{1}{2}$
 Cross a high spur, and pass through burned and fallen timber to a bold creek - - - - - 2
 Through open woods to another creek - - - - - $\frac{1}{4}$
 Over a ridge with level top, timber burned, to a ravine with a small spring branch; on this branch, a short distance above the trail, is a prairie with good grass - - - - - $\frac{1}{2}$
 Thence through burned woods, much obstructed by fallen timber to camp in a prairie with good grass and water; this prairie is boggy in the wet season - - - - - $\frac{2}{4}$
9 $\frac{1}{4}$

August 8. - To camp Chequoss, through level country to a creek - - - $\frac{1}{2}$
 Over a rolling country, lava district, to a small creek in a ravine, a little grass near by - - - - - $1\frac{3}{4}$
 Ascend a high ridge, by a long and gradual ascent, to a small pond with good grass - - - - - $2\frac{1}{4}$
 Through a succession of small and connected valleys, with good grass spruce timber and no underbrush, to camp in a valley; grass good; drinking-water in an Indian well; water for animals in ponds - - - - - $1\frac{1}{4}$
 $5\frac{3}{4}$
93 $\frac{3}{4}$

Total distance from Vancouver to Chequoss - - - - - $93\frac{3}{4}$

August 11. - To camp Hool-hool-se; over broken country covered with a lava and a thick growth of pine and fir, with thick underbrush, to a small lake surrounded by good grass and horse-mint - - - - - $\frac{3}{4}$
 Over similar country somewhat obstructed by fallen timber, to a bold creek - - - - - 4
 To a small prairie with good grass, but no water in the dry season - - - - - $2\frac{1}{2}$
 Through a beautiful open wood of excellent yellow pine, coarse, long grass, and light soil, underlaid by lava, to camp on a fine creek; grass good - - - - - $4\frac{3}{4}$
12

August 12. - To camp Tahk prairie; over a country like the last of yesterday's march, to a large stream, the Mospum - - - - - 3
 Ascend a high plateau - travel over its broken surface, rocky in places, and covered with large timber, to a small creek - - - - - $2\frac{1}{4}$
 To another creek, no grass upon it - - - - - $\frac{1}{2}$
 To another, no grass upon it - - - - - $1\frac{1}{2}$
 Thence to camp on a large prairie, with good grass, water, and soil - - - - - $1\frac{1}{4}$
8 $\frac{1}{2}$

August 13. - To second camp on Tahk prairie; trail skirts the eastern edge of the prairie, which is perfectly level, covered with good grass, and has good soil; the timber skirting it is of yellow pine, free from underbrush; lake near north end of prairie; camped on a stream rising from this lake - - $5\frac{1}{2}$

Notes.

August 14. - Through open woods to crossing of last creek- - -	Miles
Over a rolling country, covered with open pine woods to the Wa-wak-che	$\frac{3}{4}$
river, which runs in a very deep and narrow valley; descent precipitous;	
no grass in the valley; lava is occasionally met with in the distance- -	$4\frac{1}{4}$
Make a long and gradual ascent from the valley; pass over a broken coun-	
try, which is covered with open woods of yellow pine and oak, to a point	
where there are water and grass, a short distance to left of trail - - -	$4\frac{3}{4}$
To camp in a narrow valley, with a small creek and good grass- - -	3
	$12\frac{3}{4}$

Notes.

8. Topographical Report of Lieutenant J. K. Duncan, U.S.A., Topographer of the Western Division.

Olympia, Washington Territory,
February 21, 1854.

Sir: I have the honor to submit, together with an accompanying map, the following report on the topography and general character of the country along the route pursued by the party under your command in an exploration of the Cascade mountains, during the months of July, August, September, October, and November, 1853, viz:

A route northeasterly from Fort Vancouver, on the Columbia, to the Cathlapoot'l river; thence, eastward along the banks of the Cathlapoot'l and across the ranges of the Cascade mountains, south of Mount St. Helens and Adams, to the open country beyond; thence, turning Mount Adams on the east, northerly to Ketetas, a point on the Yakima above where it receives the waters of its principal tributaries, Atahmam, Mahchess, etc., the country along the Yakima river from its sources in the mountains to its junction with the Columbia. From Ketetas northerly to the mouth of the Pisuouse or Wenatshapam; thence, up the Columbia to Fort Okinakane, the country on the Methow river from its head to its mouth, the country along the Okinakane River from its junction with the Columbia to the lakes beyond the forty-ninth parallel; thence, leaving the Okinakane at its forks, eastwards across the country to the Neholalp't river; thence, down this river to its mouth, crossing the Columbia at Fort Colville, From Fort Colville to Fort Wallah-Wallah, via the valleys of the Slawntehus, Chamakane, Cherahma, and Wallah-Wallah rivers, crossing the Spokane river a few miles below the forks or site of the old Spokane house, and the Saptin or Lewis' fork of the Columbia at the mouth of the Peluse; thence, down the south bank of the Columbia to the Dalles, and from the Dalles down the Columbia river by water to Fort Vancouver.

The country gradually rises back of Vancouver into a light range of hills running parallel to Columbia river, and generally about a mile and a half from it. Two miles from Vancouver the trail crosses a brook twenty feet wide, which empties into a lake three miles below that place; the lake communicating with the Columbia ten miles below. From this stream the country along the trail breaks into small openings or plains having no timber on them. They vary from a half to several miles in extent, are very level, as well as the adjacent country, and are separated from each other by narrow strips of woods. Kolsas, the largest of these plains, about seven miles from Vancouver, is six or seven miles long, and three or four in breadth, and connects on the south with a swampy arm of Camas plain, which stretches off to the eastward, in which direction there is a large tract of the same character of country lying along Mill creek, and running down towards the Columbia. From Kolsas the trail bears to the northeast for six miles to a plain called Simsik, about a mile and a half long. The country between Vancouver and Simsik is similar in character - heavily timbered with fir, spruce, and a dense undergrowth of maple and hazel bushes. The soil is sandy and gravelly, especially the open plains; the soil in the woods between Kolsas and Simsik is the best. The country up to Simsik is quite level; leaving Simsik east of north the country becomes hilly and broken along the trail, the hills becoming higher and more rocky as we approach the Cathlapoot'l

river. Between these points the trail crosses several branches of the Cathlapoot'l. Six miles from Simsik there is a small rapid brook fifteen feet wide; two miles farther on there is another, thirty feet wide and two deep; and a third, the Yahkohtl, eight miles beyond, about forty feet wide and two and a half deep. The bottoms of these streams are rocky, and that of the Yahkohtl very stony; the currents rapid. They run among high hills and have no valleys. They unite a short distance below the fords, the main stream uniting with the Cathlapoot'l four miles from its junction with the Columbia. Eleven and a half miles from the Yahkohtl the trail crosses the Chalacha. This river is thirty-five wide, ford good. It receives two branches a short distance below the ford - the first from the southeast, a bold rapid brook twenty feet wide; and the other a small rivulet coming in from the other side and running nearly parallel to the Chalacha, and one and a half or two miles from it. Thirteen miles from Simsik is Mankas Plain, surrounded by hills, and more low and swampy than the other plains met with. Six miles beyond the Yahkohtl river is the Yahkohtl Plain, a high sandy undulating plain, about three miles long. Five and a half miles beyond this plain occurs the Chalacha Plain, lying between the Chalacha river and the parallel rivulet before spoken of. The country between Mankas and Simsik is simply hilly; hills higher near the latter place. Between Mankas and the Yahkohtl river there are two sharp spurs of the Cascades, differing from the other hills by being higher and rocky. They stretch off to the east and west, increasing in altitude towards the east, but falling off in the opposite direction. Between the Yahkohtl and Chalacha rivers the country is high and hilly, and, in places, much broken. There is a high spur running along the left bank of the Chalacha river, and the plain of this name is entirely surrounded by high ridges and rocky peaks. An almost perfect symmetrical peak is seen towards the northeast and at the end of the plain in that direction. Between Chalacha and the Cathlapoot'l is a high spur of the Cascade mountains, which runs along the left bank of that river. The ascent to it is gradual, and by successive hills and long slopes, but the descent is rocky and abrupt, and dangerous for loaded animals. The Cathlapoot'l is a very bold, rapid river, running about twenty-five yards in its bed, but, judging from the sand and shingle on its banks, it evidently becomes over two hundred yards wide at the ford. This, however, is not the general character of its banks, as they usually are high and well defined, preventing an overflow at any season. It is about three feet deep at the ford, and the bottom is filled with large water-worn shingle, and makes the fording difficult in so rapid a stream. Just opposite the ford the Spilyeh debouches into it from the north. Between Simsik and the Cathlapoot'l, with the exception of the small plains, the country is well timbered with fir, hemlock, etc., and the underbrush is very dense in places. Some alder and maple grow along the Yahkohtl river. The soil is generally very good, and that between Yahkohtl river and plain will compare favorably with any in the territory; there is but little of it, however. The Cathlapoot'l, at the ford, runs nearly west and east. There are two mountain chains running along its banks, one on either side; the one on the right or northern bank is composed of rugged, broken hills, is lower than the chain on the south bank, is less continuous, and lies further back from the river. Bluffs and spurs from it, however, run up to the river. To avoid these, the trail runs back from the river in a northerly direction across the range four and a half miles to Spilyeh plain. The Spilyeh river is crossed

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about a mile from the Cathlapoot'l at its forks, the trail running up the hills on the tongue between them. One branch bears to the northeast, the other to the west of north. Spilyeh plain is long and narrow. A high range of mountains border it on the north a short distance back, and on the south is seen the rugged river chain of hills that we have crossed. As this is the last of the plains which we meet on the western side of the mountains, it will be well to remark, in this place, that from the facts noted on Lieutenant Hodges' trip across the mountains to Steilacoom, from what we saw on the route, and subsequently noticed between Vancouver and Olympia, the entire country west of the mountains is broken up by these small plains occurring at regular intervals here and there throughout its whole extent. They are generally slightly rolling and dry, and covered with fine bunch-grass. Their soil for the most part is too sandy and gravelly to be good, particularly in these which lie nearest the sound. Some of them, however, as Mankas and Chalacha, are lower and swampy, and the soil of such is better suited for agriculture. From Spilyeh the trail bears to the east, over a pretty level country, occasionally passing over spurs which come down from the chain on the left for four and a half miles, where it again strikes the river, thence follows the river for two and a half miles, and crosses to the left bank to a place called by the Indians Lakas. The northeastern branch of the Spilyeh is again crossed before reaching the Cathlapoot'l. There is a high range on the left of the trail on the right bank of the river and the chain crossed between the Cathlapoot'l and Spilyeh plains ceases before the trail again reaches the river. The country between Spilyeh and Lakas is heavily timbered with spruce, hemlock, and fine large cedars. From Lakas the trail follows the banks of the Cathlapoot'l, crossing from side to side to avoid the bluffs running up to the river from both ranges for seventeen miles, to Wininepat. At this point the river bends from its general east and west course more to the north, and judging from the openings or gorges in the mountain ranges, (which here become high and heavy,) it soon forks, one branch running to the northeast and the other bending back to the northwest, and running up towards St. Helens. Two and a half miles from Lakas there is a fine mountain brook coming in from the north on the right bank of the river. This stream is very rapid, twenty feet wide and eighteen inches deep; bottom stony. Seven and a half miles beyond, the Nocomtnamie river comes in on the same bank, from the north, almost at right-angles with the Cathlapoot'l. There is a large field of lava between the mountain brook just mentioned and Nocomtnamie river. It is limited on the north by a high rough range of mountains between the trail and Mount St. Helens, running parallel to the Cathlapoot'l, and five or six miles back from it. There are many craters of extinct volcanoes found in this field, and wide and deep fissures, formed by the bursting of lava bubbles by cooling too suddenly. A great many large masses and small detached angular fragments of lava are scattered over the surface, and it is rough, barren, and desolate. There are traces, however, of timber (spruce) having grown on it at some time since the eruption which formed it; but fire has nearly removed them, a few charred stumps and logs only remaining. This field is narrowed towards the mouth of the Nocomtnamie by the mountain chain on the north. These mountains are also basaltic in structure. The Nocomtnamie is forty feet wide, and from three and a half to four feet deep - bottom rough and stony. This is one of the boldest of mountain streams, with a great fall and very rapid current. The Cathlapoot'l has also a greater fall and more rapidity of current for two miles below the mouth of the Nocomtnamie. Between the Nocomtnamie and Wininepat the trail passes over quite a level country; two spurs from the range on the right bank came down to the river, the one along the eastern.

Notes.

bank of the Nocomptnamie, and the other two miles beyond. The trail crosses over the first, and avoids the second by crossing to the left bank of the Cathlapoot'l, and returning to the right bank again above this spur. The chain on the south bank of the Cathlapoot'l is very high and continuous, and abrupt and broken on the water declivity, coming down to the water's edge. One mile below, where the river makes the great bend to the north at Weninepat, this range leaves the river and runs off slightly to the south of east. Another cross chain, however, runs along nearly parallel to the river, and soon runs into it. The Cathlapoot'l has no valley; cotton-wood and balm of Gilead grow in the low places along its banks. The country is well timbered with spruce and pine; between Lakas and Wininepat with spruce, fir, pine, and cedar. The trail crosses the river Cathlapoot'l at Wininepat for the last time, and then leaves this river. The last crossings of the Cathlapoot'l are diagonal, and all its fords are difficult for animals, on account of the rapidity of the current and the immense quantities of large water-worn pebbles on the bottom. The breadth of stream is about seventy-five to eighty feet, and that of the bed, between banks, from seventy-five to one hundred yards. It cannot be forded at high water. Leaving the Cathlapoot'l, the trail bears to the southeast across the river chain, which has been running on the left bank of the river, but lying back from it at this point. This chain is not sharp or very rocky, but earthy and soft, and rounded in outline, and very high. The ascent for the first part is over five plateaux; ascent to plateaux abrupt, but not very high. The last part of this ascent is made by a long winding stretch over the side slope of the main range, and is remarkably abrupt. The descent to the Wahamis, on high rolling table-land, eight miles from the Cathlapoot'l, is gentle and gradual. Here is fine grass, worthy of note, as it is the first which occurs between Spilyeh plain and this point. These mountains have been burned over, so that their appearance is bald and barren, and the timber, where it occurs, is young growth of pine and hemlock. They are remarkable for the quantity of berries growing on them. Strawberries and four varieties of whortleberries were noted. Berries are generally found on any tract of country visited by fire, but they are mostly found in the mountains, and seem to flourish best near the summit. From Wahamis the trail bears south of east for twenty miles, to Chequoss, a point on the high table-land of the chain running from the mouth of the White Salmon to Mount Adams. The immediate country is high rolling, and sometimes broken, and high ranges run off to the right and left of the trail, with bald, isolated peaks occurring here and there in them. The descent from the high table-land to the Chequoss is gradual, and there are several very high peaks in the vicinity of this place. The Wahamis creek runs to the right and left of trail, generally some distance from it, and is crossed two or three times; it soon bears off to the southeast, and is one of the principal branches of the _____. Eleven and a half miles from Wahamis there are some low, wet prairies on left of trail Yawakamis, and are drained by small streams crossing the trail in basaltic ravines, and emptying into the Wahamis; there are two fine brooks between Yawakamis and Chequoss, also branches of the White Salmon. There are lakes on the table-land near Chequoss. The country between Yawakamis and Chequoss is more basaltic, and there are frequent occurrences of craters, some of which are very deep; and basaltic columns, which have yielded to time and the atmosphere, are crumbled into huge irregular masses. The lower table-lands

Notes.

are well timbered (where they have not been burnt over by fire) with fir, spruce, and pine; but the higher ones are too elevated for flourishing vegetation, and are only covered in patches with a few dwarf fir trees and stunted pines. The fir and hemlock are generally replaced by pine on the summits of mountains and other elevated positions, the former flourishing best and growing larger in the low countries and along the streams. The latitude of Chequoss is north 45° degrees 56'; the longitude is west 121 degrees 23' 11"; variation of needle is east 16 degrees 5' 34". From a high, elevated point, one mile west of Chequoss a fine view of the Cascade mountains presents itself. From this point I was able to get a pretty accurate plan of the mountains and the general lay of the chains. From this point Mount Rainier bears north 1 degree west, and is about sixty-two miles distant in a direct line. Mount St. Helens bears north 46 degrees west about forty miles off. Mount Adams bears north 40 degrees east at the distance of twenty-four miles. Mount Hood bears south 9 degrees 30' east; Mount Jefferson south 45' east. There appears to be one continuous high range running from near the Cascades of the Columbia north to St. Helens, and proceeding on to the northeast, connecting this mount with Mount Rainier. There seems to be a lower point in this connecting range just north of Mount St. Helens, as if some river, emptying into the sound, passed through it. It is not a gorge, however, and there are five distinct parallel ranges running into Mount Rainier, and lying between Chequoss and St. Helens. A second main range commences about the mouth of the White Salmon river, and runs up to Mount Adams, and continues on the northward, connecting Adams with Rainier. A third chain commences on the mouth of the Klikatat river, a light fork of which runs up to Mount Adams on the north, and the heavier chain bears off to the north of east, and proceeds to the mouth of the Yakima. The western branches of the Klikatat river head in this last range.

Chequoss is on the second chain from the White Salmon river north to Mount Adams. There are several sharp needle-points to the south of Mount Rainier, and the mountains in that vicinity are very irregular and thrown together in every variety of manner. There is also a curious cathedral-shaped mountain to the south of Mount Adams, on the chain heading to Chequoss. Looking towards the south, there are four parallel ranges between Chequoss and Mount Hood; and thence, allowing one of these to be the river chain, on its southern bank, we have three ranges between Chequoss and the Columbia. The intervening country between these chains is mountainous; in some places rough and broken, in others high rolling table-land.

From Chequoss the trail bears north of east for fourteen miles to the Hoolhoolse river, descending the whole distance; abrupt descent in first two and a quarter miles, the rest of the distance being gradual. There is a small lake, a quarter of a mile long, in a lava district at the foot of the abrupt descent, and on the left of the trail. It is surrounded by a large growth of cotton-wood and poplar.

The main branch of the Klikatat river comes in from the north, and crosses the trail four miles beyond the lake. This stream is bold and rapid, thirty feet wide and two deep - fording good. This stream may at one time have been a branch of the Nikepun. As the country descends towards the Hoolhoolse, from it, and an old dry bed is frequently crossed by the trail between these points. The last five or six miles of this dry channel before reaching the Hoolhoolse is basaltic, the basalt arching the channel and making it subterranean - depth of the key of the arch from four to six feet, and bottom

of channel from twenty-five to thirty feet below the surface. The arch has fallen in in places, forming natural shafts at irregular intervals, by which you are enabled to trace on the surface the course and direction of the channel underground. The Indians have a curious tradition concerning this subterranean passage. Once upon a time a great chief of the "Sliptillicum" had a wife who was changed into a mouse at his request by one of the learned medicine men of the time, as a just punishment for some misdemeanor or other that the women of those days were always committing. But the woman's soul, not profiting by the lesson of transmigration, must still work mischief under another covering; and accordingly, in a very rebellious mood, she endeavors to undermine the aforesaid chief's dominions. These caves were the result produced by her spite. With all due deference to the Sliptillicum, we may conclude, however, that its cause was volcanic eruption - the lava overrunning an existing stream, and suddenly cooling, the waters of the stream being forced into another channel.

There is a low chain of mountains stretching off from Chequoss along the right of the trail, and from two or three miles from it, and continues on towards the east. The Hoolhoolse rises in this chain.

The country is very rough and mountainous on the left of the trail, south of Mount Adams; but none of the spurs come down to it until after we have crossed the Nikepun, about four miles beyond the Hoolhoolse, where a pretty high range runs to the southeast.

From Chequoss the country is heavily timbered up to the branch of the Klikatat. From that river to the Hoolhoolse there is open pine forest, free from underbrush and covered with fine bunch-grass.

From Hoolhoolse the trail bears south of east for nine miles to Tahk plains. The Nikepun, a rapid mountain stream, is crossed three miles from the Hoolhoolse. The latter is a branch of it. The Nikepun is thirty-five feet wide, and three deep - bottom rocky. One mile beyond this river is the range running southeast from Mount Adams. Thus far the trail is over very level country, covered with open pine timber of small growth and bunch-grass no underbrush. The remainder of the distance to Tahk plain is over this range, which is more heavily timbered; and the trail crosses two small branches of the Nikepun heading in this range. The first ascent is long and abrupt; the rest is broken and rolling. The timber on the last two miles is more open.

A range of high hills borders Tahk plain on the east, spurs of which put down to it; but the range between the Nikepun and this plain is the last which connects with the main range. On the west it is limited by high hills which come down from Mount Adams. This plain is ten miles long, and from one to three miles wide. There is a marshy lake, a mile and a half long, in it, and a branch of the Wah-wuk-chic leading from it, and running to the northeast. This plain is low and wet in many places, and gives evidence of being partially if not entirely, under water during the wet season. From Tahk the trail bears northeast for thirty-seven miles, to the Sahpenis, a branch of the Yakima. For twelve miles the trail lies over Tahk plain and a slightly undulating country, but not hilly. A little loose lava rock is occasionally found on the surface.

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Here the Wah-wuk-chic crosses the trail. The Wah-wuk-chic has no valley, and is reached by an abrupt descent. The river is about seventy feet wide at the ford, and two and a half feet deep - bottom sandy, current rapid, rough rapids just above and below crossing. A spur from the Cascades comes down along the northern side of the river, and intersects the range of hills running north and south on the east side of Tahk plain. For two miles from the Wah-wuk-chic the country is rough and broken, and ascends over two abrupt hills to a high undulating table-land beyond. The divide or highest part of this table-land is about fifteen miles from the Wah-wuk-chic, where occur some very large boulders of basalt.

From this ridge to the Sahpenis the country is more rough and broken and an abrupt and deep ravine runs along the left of the trail, in which is a branch or fork of the Sahpenis coming in from the southwest. The other fork comes in from the northwest through a similar ravine. Two small brooks are crossed between the Wah-wuk-chic and the dividing ridge. This ridge or range runs back from the main stream and bears northeast over a basaltic broken spur, until it reaches the Sahpenis by a gradual descent seven miles beyond. There is a great deal of loose angular lava on this spur; the timber becomes more scattering and scrubby, and ceases three miles beyond the forks; this is the eastern limit of the pine timber. The Sahpenis runs on the left of the trail, gradually approaching it in a basaltic canon with almost perpendicular sides. The basalt in these walls is columnar. A range of high bleak hills (the continuation of the divide) is on the right of the trail, and about two miles from it. For the last five miles the country is rough, broken, barren, God-forsaken, and desolate. Off to the southeast it presents the same dreary, desolate appearance. From Wah-wuk-chic river to the forks of the Sahpenis the country is covered with open pine woods, timber large and no underbrush; fine grass grows in the woods throughout this distance. The Sahpenis is thirty-five feet wide and two feet deep, ford good; this river has no valley at or above the ford, but the basaltic spur ceases on the left bank half a mile below, and the valley widens out into a low, sandy, gravelly plateau several miles wide.

A second stream, the Sinkwee, comes into this valley from the northwest, and unites with the Sahpenis four miles below, forming the Pises river.

GENERAL REPORTS OF THE SURVEY OF THE CASCADES.

7. General Report of Captain George B. McClellan, Corps of Engineers, U.S.A., in Command of the Western Division.

Olympia, W. T., February 25, 1853.

Sir: I have the honor to submit the following report of the expedition under my command. The instructions under which it was conducted will be found appended to this report.

I arrived at Fort Vancouver on the 27th of June; but it was not until July 24 that the party fairly started.

The season being late, our progress slow for the first few weeks, and the northern half of the range being entirely unknown, it was impossible to make more than a mere reconnaissance of the different passes, and it became necessary to push on towards the north, to determine whether any existed in that direction.

Supposing that there would be less timber on the eastern than on the western slope of the range, and that the elevation of the plateau between the Rocky and Cascade mountains would facilitate our progress, I determined to gain the eastern slope as soon as possible; and then, moving as close to the mountains as practicable, strike in with small parties whenever a possibility of finding a pass presented itself.

Originally I intended to follow the valley of the Columbia as far as that of the White Salmon, and to reach the eastern slope by following the latter valley. In consequence of the high stage of the water in the Columbia, that trail was not yet practicable when we were ready to move. Being informed that there would be but little difficulty in following a trail direct from Vancouver to Mount St. Helens, and there cross the mountains, I determined to take that route.

My party consisted of Lieut. J. K. Duncan, third artillery, astronomer, topographer, and draughtsman; Lieut. H. C. Hodges, fourth infantry, quartermaster and commissary; Lieut. S. Mowry, third artillery, meteorologist; Mr. George Gibbs, geologist and ethnologist; Mr. J. F. Minter, assistant engineer, in charge of courses, distances etc.; Dr. J. G. Cooper, surgeon and naturalist; Mr. A. L. Lewes, assistant engineer and interpreter; five assistants in observations, carrying instruments, etc; two sergeants, two corporals, and twenty-four privates of fourth infantry - ~~being thirty-one~~ one sergeant being the quartermaster and commissary sergeant; one private doing duty as blacksmith. Six privates whose terms of service expired shortly after we started being employed as packers, the number of the escort and working party was reduced to three non-commissioned officers and seventeen privates. Two chief packers, three hunters and herders, and twenty packers, completed the party, which thus numbered sixty-five persons besides myself.

Guides we took from place to place, as we could find them; for even among the Indians there were none who knew more than small portions of the country we traversed. There were 173 animals with the command; 73 for the

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saddle; 100 for packing. Of the whole number, 46 were mules. The mules were generally very excellent; some of the horses good, but the greater part very indifferent Indian horses; the best, however, that could be procured at so short a notice. The pack-saddles with which we started were in part sent from San Francisco, partly purchased from the Hudson's Bay Company; they were alike worthless. Fortunately, there were about fifty of the old-pattern Ringgold saddles at Vancouver, which we obtained; they answered admirably. And it was, we were greatly delayed by the frequent breaking of the others.

The size of the party may seem too large; but from the nature of what little information we possessed at the time in reference to the country we were to traverse, the disposition of the Indians among whom we were to travel, and other circumstances which need not be mentioned, it seemed that the number was as small as it ought to be; especially when the practicability of detaching small parties was considered.

The packers were divided into brigades of two; each brigade having charge of from four to six animals.

The command was armed with rifles and a few of Colt's revolvers. The supply of instruments consisted of one sextant, a very good one; two chronometers - one indifferent, the other worthless; one level, a good instrument; one surveyor's compass, indifferent; two Schmalcalder compasses, good instruments; two syphon barometers, good instruments; two syphon barometers, quite inferior; two aneroid barometers; two hygrometers; four thermometers. These instruments were sent out in charge of Lieut. Duncan, before my arrival in Washington from Texas.

Our only means of determining the longitude was by the method of lunar distances; the variation of the needle by the Schmalcalder compasses.

I will endeavor to make this report as brief and general as possible, referring to the accompanying documents for details.

The topography of the country will be found in Lieut. Duncan's map and memoir.

Mr. Minter's itinerary will show the obstacles met with on the march, daily distances, etc. For the meteorology and barometric profiles, I refer to Lieut. Mowry's reports and drawings.

Mr. Gibb's reports give the geology of the country and everything relating to the Indians.

The natural history and hygiene of the country are discussed in Dr. Cooper's reports.

Ascertaining that the trail was obstructed by brush and fallen timber, I started in advance on July 22, with a small working party, leaving Lieut. Duncan in charge of the main party, with instructions to overtake me as soon as possible. I awaited the command at Yahkohti; they arrived there on the 28th of July. We were delayed at this place until the 31st in making new pack-saddles to replace those broken in this short distance.

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On the 1st of August we reached the Cathlapoot'l, followed its valley until the 5th, on which day we left it and crossed the dividing ridge.

From Vancouver, to the Cathlapoot'l there is but little to invite settlement. With the exception of a few small tracts, the country is generally covered with dense forests and thick undergrowth; the trees often attaining an immense size. Fir is the predominant tree; a few scattered cedars, oak, ash, elder, and maple, are met with. There could not well be a more abundant growth of berries than we found in this district; among them may be enumerated three kinds of the huckleberry - blue purple and red; the blackberry, raspberry, thimble-berry, gooseberry, service-berry, salmon-berry, sahlalberry, and the Oregon grape; the wild cherry and hazlenut also were seen. The valley of the Cathlapoot'l above, and at our crossing, is utterly worthless for any purpose. On the Yakkohltl river there are some three or four cascades, which may hereafter be of some value as water powers.

At the second camp after leaving Cathlapoot'l river, (Taunkamis,) we halted one day, our animals having suffered much from the almost entire absence of grass for four days. On the 8th we reached Chequoss. On account of the animals I remained here two days, and occupied the time by taking observations, examining the vicinity, etc.

From the mountains, near camp, there was a fine view of the country for a long distance in every direction; five large snow mountains were in sight - Rainier, St. Helens, Adams, Hood, and Jefferson. The mountains in this part of the range are generally wooded; they have steep slopes, but seldom present bold and rocky outlines. Forming an opinion from the confused nature of the mountains, and the courses of the streams, I thought the possibility of finding any suitable pass near St. Helens too slight to justify me in delaying here to make a more detailed examination, and determined to push on towards Mt. Rainier with as little delay as possible. A fair pack-trail might be made from Chequoss to near the head of the Puyallup or Nisqually. From the Cathlapoot'l to Chequoss, the country is mountainous and sterile.

On the 11th of August we left Chequoss, reaching Atahnam on the 17th. Soon after leaving Chequoss the country assumes a new character; the yellow and pitch pine, with a few oaks, become the predominant trees; the woods open, but little underbrush is seen, and the blue bunchgrass makes its appearance. The soil is of the lightest character, and is but a few inches in depth, the whole of this portion of the country being underlaid by a sheet of lava. After travelling five days through a rough and timbered country, we, on the 8th, emerged from the woods into a barren country entirely destitute of timber. With the exception of narrow strips in some of the valleys, this district presents every indication of absolute worthlessness. In the Simkwa valley we first saw the wild sage; prairie wheat and dwarf sumach also occurred here, and were frequently seen afterwards in the valleys. None of the streams crossed between Chequoss and Atahnam presented valleys that could give passes through the range.

The country through which we passed to the east of the Cascade range may be described as generally barren and unfit for agriculture, and poor for grazing purposes. There are two small tracts which are exceptions to this rule; but I know of none which would be considered good in our western states. The yellow pine on the slopes of the mountains may be carried down the

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principal streams into the Columbia, and thence rafted or "run" over to the head of navigation; the larch, between the Okinakane and Colville, can be hauled to the streams of the same names, and rafted to the Columbia; the building-stones in the vicinity of the Pisquouse will some day be available for the market; but labor must become more cheap and abundant, capital more plenty, before these can become important interests. The Indians are harmless and peaceable; with the exception of the Yakimas, they are very poor. Their food consists of salmon, berries, and potatoes. The entire absence of game renders it difficult for them to obtain good clothing; during the whole trip I did not see a single deer, elk, or bear - nothing larger than a wolf. Wolves, badgers, squirrels, and a few gray marmots, were the only quadrupeds. The blue and ruffed grouse, prairie chicken, and sage-fowl, abounded. To the west of the mountains the country is covered with dense fir timber, interspersed with prairies or lakes. The only good land I have seen is in the valleys of the Columbia and Cowlitz, and of some of that string of prairies which skirt the mountains from the Columbia at least as far as the Skywamish. The Willopah and Chehalis have also good land upon them. The prairies near the sound are uniformly of gravel, barren and worthless. Lumber and the fisheries must constitute the great interests of this portion of the territory.

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Extract from Report of Lieut. S. Mowry to Captain George B. McClellan,
Corps of Engineers, of the Meteorology of the Cascades,
February 10, 1854.

"On leaving the low prairie lands back of Vancouver, and gradually penetrating the range of mountains, the atmosphere, clear below, became smoky. This appearance continued throughout the country in the vicinity of the mountains. It is believed to be caused chiefly by the immense fires which, from time to time, are kindled in the forests by the Indians, and which lay waste large sections of the country. For scores of miles we marched through a country entirely devastated by this element."