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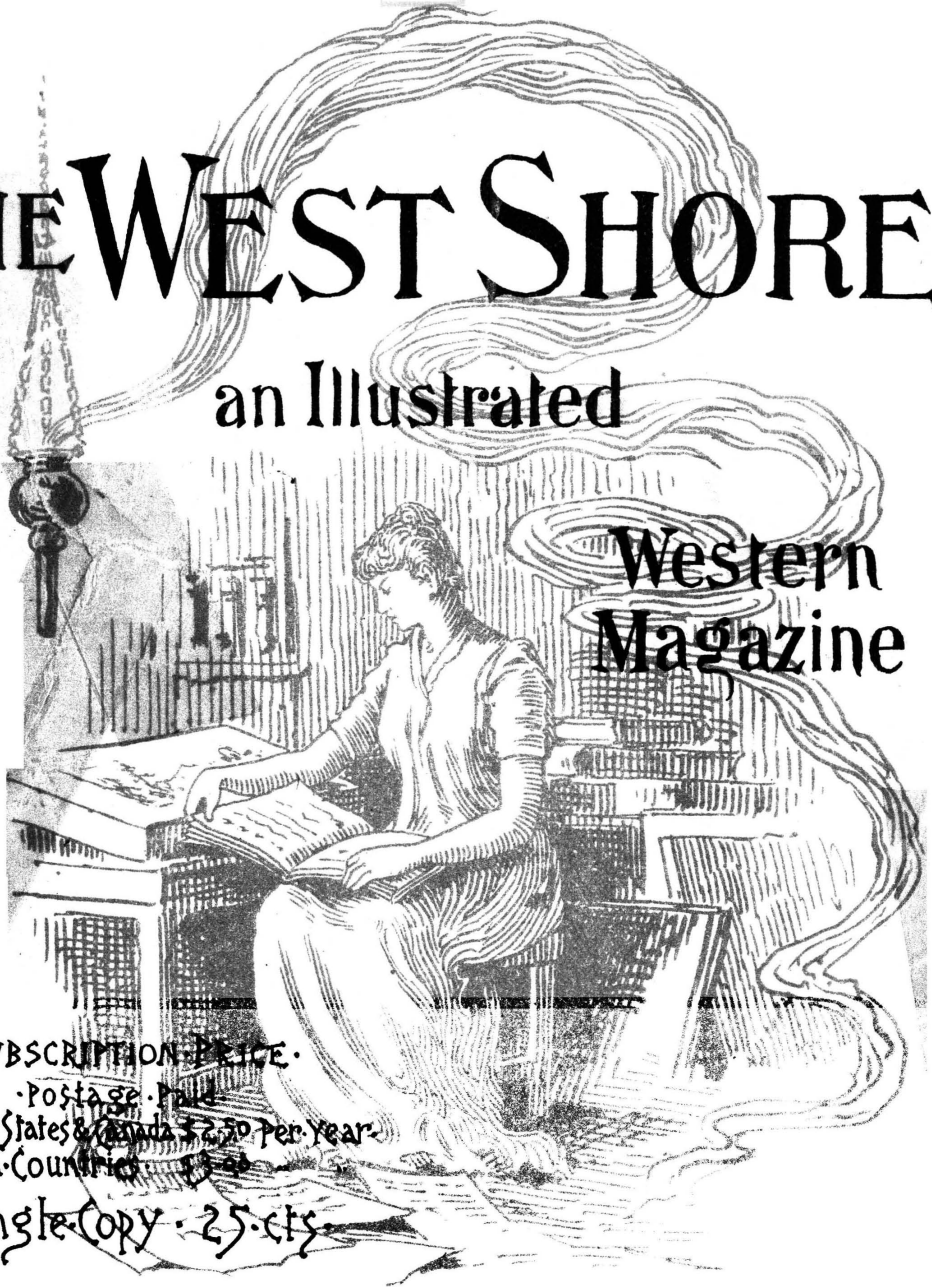
·April· 1887·

·THIRTEENTH·YEAR·

THE WEST SHORE

an Illustrated

Western
Magazine



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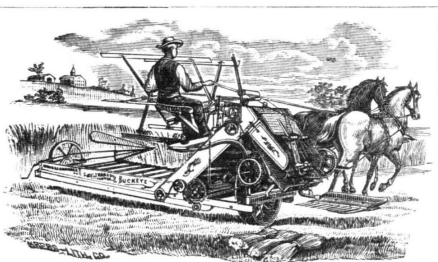
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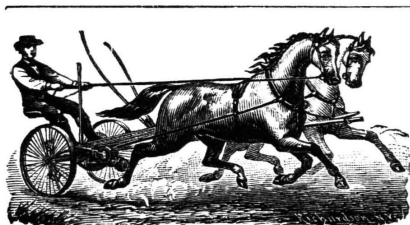
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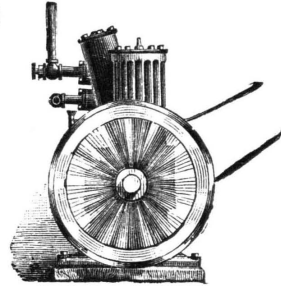
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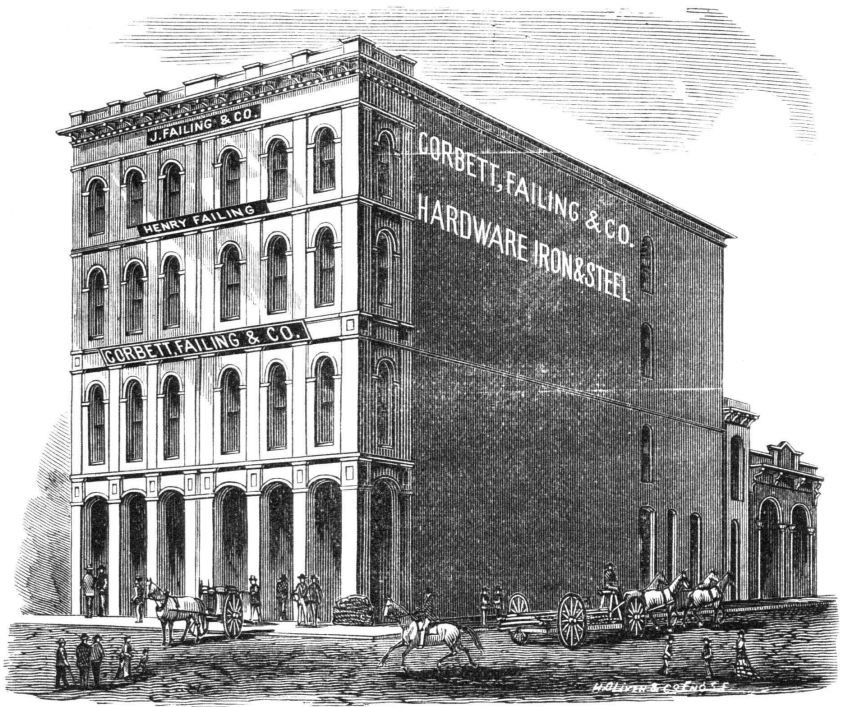
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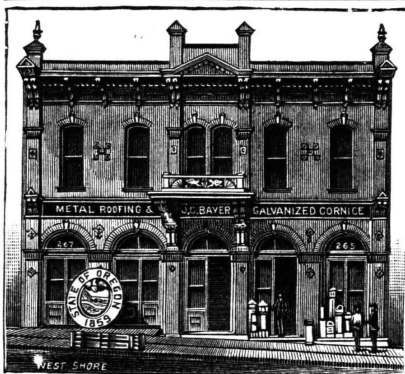
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THIRTEENTH YEAR.

APRIL, 1887.

NUMBER 4.

MYTHS OF THE COLUMBIA RIVER INDIANS.



FEW years ago the Columbia river valley was inhabited solely by Indians and wild beasts. West of the Cascade mountains were a few isolated settlements, but the main country was an unbroken wild. Up and down the valley of the Willamette the Klikitats, Calipooias, Multnomahs, Yamhills, Molallahs, and a few smaller tribes, roamed unmolested. Along the Lower Columbia the Chinooks, a once powerful, but now almost extinct, tribe, held dominion, while east of the Cascades the Klikitats, Walla Wallas, Cayuses, Spokanes and Nez Perces held sway.

Of all these, the Klikitats were, perhaps, the most powerful and restless, making the widest excursions into the surrounding country. Over eighty years ago, Lewis and Clarke found them already living far out south in Oregon. Quite extensive villages of them were

found by the early settlers almost as far south as Eugene, and in Clackamas and Marion counties, also. In their trade excursions, or marauding expeditions, they penetrated far into California, while on the north they traversed a good portion of British Columbia, and every summer made expeditions into the "buffalo country," as they called the lands at the headwaters of the Missouri.

All these tribes are fast passing away, and soon will have gone into oblivion, and been numbered with the dead nations of antiquity. To the student of ethnology there is an attraction, almost amounting to fascination, in the study of the character, habits, myths, traditions and superstitions of this doomed and dying race. To everyone must have occurred, again and again, the questions "What was the Indian's origin? From whence did he come? What is his past history? Does he represent the last stage of degeneracy of a once more powerful and intelligent race, or has he always been the same as now?" Whatever we would know of him, we must soon discover, for very soon, in his primitive condition, he will be a thing of the past. Contact with the whites is corrupting, and fast obliterating, his cus-

toms, myths and traditions. While the Indian, in his innermost heart, sincerely believes the myths and traditions of his fathers, it is only once in awhile one can be induced to open his mind and freely communicate them to others. He knows the white man disbelieves, and even ridicules, them, and an Indian can bear almost anything better than he can ridicule—and who is there that likes to have the religion of his fathers belittled, or to see those things he has always been taught to regard as sacred, treated as if they were fables and lies? Having no written language, the Indian could not record facts and phenomena, and therefore, his history is a bundle of traditions. These are his bible and code of laws; they comprise his system of religion, and are his philosophy of the origin of things. They are sacred to him because they are ancient, and because his ancestors believed them and taught them to him.

There has been much said and written about the monotheistic ideas of the American Indian. We hear much about his worship of the great spirit, and one would naturally infer that his system of mythology would only have reference to one god; but an examination into his myths shows that in common with all savage nations, the Indian believes in the existence of many gods and demigods. While he seems to believe in a great spirit, who is far above all other spirits in intelligence and power, we do not find that, according to his myths, this great spirit had much to do directly in the work of creation. According to his cosmogony, nearly everything was made by animal gods, or demigods, having almost unlimited power, and yet being themselves mortal, and having the same appetites and passions as the Indian himself.

In all nations the idea has prevailed that former times were better than the

present, that man is in a degenerate and fallen condition, and that anciently, man was purer and better, and lived longer. Among our own people we find the same thing. Who has not heard old men tell about the degeneracy of the present times, as compared with the years of their early life? Boys are not what they used to be; the times are out of joint; men are growing more corrupt all the time. We hear of the present degeneracy of our republic, and the purity and patriotism of our forefathers are lauded to the skies, while history shows those same forefathers were berated by their cotemporaries, and that they themselves were lamenting their own times, and pointing back to the better days and better men before them. We find this is almost an innate tendency of the human mind, and this gives origin to what has been styled "ancientism." This natural impulse of the mind finds expression with the Indian in his wonderful stories of the long, long ago.

It is the belief of all the tribes of the Columbia river valley, and almost all over the continent, that the present race of Indians sprang from an ancient "animal people," and that the animals existing on earth at present are diminutive and degenerate representatives of an ancient race of animal gods. "Long, long ago," there were no Indians such as now exist; there were "animal people," the *Wat-tée-tash*, or the "ancients." These *Wat-tée-tash* were prodigiously large, and all animals, beasts, birds, insects, and even trees and plants and inanimate objects, could talk, and spoke one language. To all are attributed the speech and doings of rational, intelligent beings, in those wonderful ancient times. The bear, eagle, hawk, rattlesnake, owl, cayote, humming bird, and indeed, nearly every living thing known to the Indian, has connected with it some mystic story, accounting for its origin and pe-

cularities. A curse was pronounced on all of these and they are fallen, have lost speech, and are but shabby representatives of their former greatness.

All, or nearly all, of the tribes in the Columbia and Snake river valleys believe they sprang from the ancient animal god, Cayote, or Speelyai. This Speelyai was the big Indian god among the Eastern Oregon and Washington tribes. The cayote of to-day is a contemptible animal in the sight of the Indian, but the ancient Speelyai was a god, creating and destroying whomsoever and whatsoever he pleased. In their mystic stories he seems to have been the ruling spirit among the other *Wat-tée-tash*. *Whái-a-ma*, the eagle, *Amash*, the owl, and *Wish-poosh*, the beaver, were gods of dignity and power, doing many wonderful things. It was from the beaver that Speelyai made the Indians. The grizzly bear was a monster worse than the devil himself. The Indians say he was so large he used to destroy people by snuffing them up his nostrils. To this day they have a superstitious dread of the grizzly, and they say that if one speak derisively of a grizzly's tracks or excrement, the bear has some kind of a mysterious way of knowing it, and will sometime avenge the insult. The rattlesnake and owl were great personages, and both were, according to the Indian stories, "big medicine men" among the animal people. With the present animal race, nearly every peculiarity is accounted for by something that occurred in the *Wat-tée-tash* times. The stripes on the chipmunk's back, the white on the magpie, and the black tip on the cayote's tail, are all thus accounted for.

The ancient animal age was full of violence; the strong were destroying the weak, and nearly all were in constant dread of danger. Nearly every mountain, stream, waterfall, canyon, gorge,

great rock, or deep hole in the rivers, has some myth or legend connected with it; something strange happened there in ancient times.

There is a legend, that, away back in the animal age, most of the country east of the Cascade mountains was covered with water. The Kittitas, Yakima, Klikitat and Columbia river valleys were lakes, having no outlet. The Yakimas say that in those days, Speelyai, the Indian god, and the other animal people, lived in the surrounding mountains, and they used to see monster beasts swimming on the surface of these lakes. On the lake that covered the Yakima valley, they saw one of these monsters, which had brown hair, frequently wallowing and swimming in the water. In time the lake dried up and the monster died. The Indians used to point out his bones, somewhere near the point where the Northern Pacific railroad enters the Yakima reservation. The bones were, probably, those of a mastodon. It is probable, that, many years ago, there may have been hair found at the spot. It is even possible that there may have been the remains of the hairy elephant found there by the Indians. These myths about monster animals, most likely, originated from their knowledge of the fossils of prehistoric mammals.

Another legend accounts for the origin of the tribes, and at the same time, explains how some of the great lakes east of the Cascade mountains were anciently drained. A long, long time ago, they say, before the present race of Indians, there lived, at Lake Cle-el-lum, an immense beaver god. He owned and controlled the whole lake, and was lord of everything around it; in short, was a sort of Neptune of that little sea. This great beaver lived at the bottom of the lake. His eyes shone like fire, his eyebrows were red, and his claws glistened like silver. He was fierce, and destroyed

every living thing that came near the lake. A great many had tried to kill the monster by spearing him, but had always failed, as the beaver dragged them under the water and drowned them. Some had even died of fright, without ever attacking him. The beaver had been killing and destroying the people a long time. In the lake was an abundance of fine fish, and all the people around were hungry and wanting the fish for food, but were kept from getting any by the selfish old beast god. Speel-yai came along one day, and seeing the state of affairs, determined to bring it to an end by killing the water god. He accordingly fitted himself out with a great spear, the handle of which he fastened to his wrist with a strong cord of Indian flax. Armed with this, he went up to the lake, and threw his spear into the beaver, who plunged down to the bottom, dragging Cayote with him. On and on the two went, plunging and swimming through the lake, tearing through the mountains, and on down to the lake that covered Kittitas valley. From there, they floundered on down, cutting the Natchez gap, and then threshed through the ridge below Yakima City, cutting the Yakima gap. On, and still down, the monster beaver dragged poor Cayote, until he reached the Columbia. Then he began clutching at the trees along the bank to check his speed. He caught hold of large firs, and they tore out by the roots; he tried the pines, cottonwoods and willows, and every other kind of tree, but all were pulled out by the roots. In despair, he grasped at the stones along the bank, but everything had to give way to the invincible power of the beaver god; and so Speel-yai was dragged on down, fighting as he went, to the mouth of the Columbia, where, floundering among the breakers, he found himself so far exhausted that he had to call on the musk-rat, who had been laughing at him, to help him out. When he came ashore, he wiped the water from his face and eyes, and then took the beaver, which he had brought out with him, and cut it up, and of it made the present race of Indians. Of the belly, he made the coast tribes, saying, "You will always be fat, short people, with big stomachs." Of the legs, he made the Cayuses, saying, "You will always have strong legs, and be swift runners," Of the head, he made the northern tribes, saying, "You will be intelligent, and strong in war." Of the ribs, he made the Yakimas; and of all the parts he made tribes having characteristics represented by the several parts. Finally, he scooped up the remaining blood, and flung it off toward the country of the Sioux and Snakes, "You will always be people of blood and violence." Having completed his work, he went up to the junction of the Columbia and Snake rivers, somewhere in the region of Ainsworth. There he stood, with his arms stretched out to the east and west, and then he reached them out over the north and south, and said, "The earth is now full of people, and there is no place for me." He then ascended to the sky. The Palouse Indians account for the falls in the Palouse river, and the origin of the tribes, by a similar myth. Nearly every tribe, or sub-tribe, relates these myths, with variations suited to their own people.

The Wigwam Indians, at Tumwater, above The Dalles, say that, back in the days of animal people, there was a monster woman living in the Columbia, under a certain deep whirlpool. She was described as a sort of huge water nymph, with reddish colored hair, that flowed down to her waist. She never came entirely out of the water, they say. She was a ferocious, destroying monster. When the fishermen came near her place of resort, she caused the water to seethe

and boil like a cauldron; then she came up, and down went canoe, fishermen and all, never to rise again. This goddess was a terror to all the surrounding fishermen and boatmen. Cayote, knowing the sufferings of the people, on account of this monster goddess, determined to end the trouble, by terminating the life of the troubler. Accordingly, he went to the basalt cliff near Tumwater, and looked over to make observations, when the object of his search rose from the water. He was much alarmed, and feared to make an attack. By the advice of his sisters, he transformed himself into a feather and floated on the surface of the water over the monster, when she swallowed him, but soon threw him up again. He then floated around as before, and was again swallowed, but soon thrown up as at the first. This was repeated five times, when, the fifth time, Cayote, in the form of a feather, remained in the monster's stomach. Finding it extremely cold, he transformed himself from a feather to an Indian man, and began to feel around in the darkness for something with which to make a fire. Taking his fire rods, he began to twirl them around, and soon struck a blaze, and was about to burn something he had found in the dark, but discovered it was human hair. He then took his stone knife and split off some pieces from a canoe, which the woman had swallowed, and soon had both fire and light. On looking around, he found a great many people, whom the monster woman had swallowed. All were benumbed with cold, and some were already dead. He found Whái-a-ma, the eagle, there, wet and chilled, with drooping feathers. All were commanded to warm and dry themselves. Speelyai then said to Whái-a-ma, "I want you to take this boat and all these people, and fly away to a high mountain and rescue them." He then took a stone knife and began cutting at

the heart of the monster. After cutting some time, the knife broke. He then took another stone knife, and after cutting a while, it broke also. He thus took five stone knives, one after another breaking, the monster growing weaker all the time. Finally, just as the fifth knife broke, the heart fell, sundered, and the giant monster died, when Whái-a-ma, the eagle, seized the canoe and flew away toward Mount Adams, and rescued the unfortunate victims of the monster's power. Speelyai then came ashore and pronounced a curse upon the river goddess, saying, "You will never destroy so many people again. You may remain here and frighten the fishermen, and once in a great while take down one, but you will no longer be the terror you have been. A better race of people is coming, and you can not destroy it." The Indians say there was a similar monster at Celilo, and another some distance below The Dalles.

This somewhat lengthy and uncouth myth, is given to illustrate several points in their mythology. It will be observed that, in their myths, five is the mystic number. Four knives break, and the fifth one brings the result; four days go by, and the fifth brings the event; five women or five men are usually named where there is a definite plurality. All nations have their special mystic numbers. Among the Indo-European nations it is generally the number three. There is the three-faced god of the Vedas; Brahma, the creator; Vishnu, the preserver; and Siva, the destroyer. The Hebrews had their mystic seven, and we find a parallel among all nations. Speelyai, or Cayote, the Indian god, is represented almost always as having a generally good character, judged from the wild Indians' standpoint, though he is often represented as resorting to trickery, deception, and fraud, in the accomplishment of his purposes. It appears that

he went around destroying and putting down the monsters that were annoying the people; and when they were in his power, he pronounced a curse upon them, generally-permitting them to live, in a very diminutive and harmless form, but having their original characteristics. After pronouncing his curse, or adjuration, he is always represented as saying, "A better race of people is coming soon," thus prophesying the advent of the present race of Indians. Those wonderful ancient times were days of magic. Cayote, on different occasions, transformed himself to a feather, a little pappoose lashed to a board, a fiery young Indian warrior, a tree, or anything that might forward his purpose.

In the study of the mythology of a people, with reference to its ethnological bearings, one must not be startled at the grotesqueness of a myth. All should be recorded, for, often, what seems most simple or absurd, may show a relation between tribes, or a community of traditions, that might not easily be discovered any other way. However barbarous may appear the myths of the Indians, there is hardly one among them to which we can not find something similar in the mythology of European nations, in their days of semi-savagery. This would seem to prove that the same physical causes, acting on humanity in all ages, have produced similar phases of mental evolution, and that mankind, in passing from barbarism to civilization and enlightenment, has everywhere passed through the same, or similar, channels of philosophic and religious thought.

Amash, the owl, in the ancient animal age, was a terrible monster, who ate people alive, bones and all. He was slain by Speelyai, who beheaded him. One time, so the legend goes, Speelyai was journeying in the Eastern Washington Territory country, somewhere between

the Touchet and Lewiston, and he happened to meet Amash, the destroyer. When Cayote saw the giant coming along the trail, he immediately transformed himself into a fine young warrior chief, dressed out in the most elaborate Indian costume. When they came up face to face, Speelyai said to the monster, "Where do you come from?" Amash stood still and said nothing. Cayote repeated his question again, and then the third time, when the destroyer replied by asking of Speelyai, "Where are you from?" Speelyai then said, "I am from nowhere but this country where you are living. This is my country; I am looking around for people to eat." The owl man then thought to himself, "I wonder who this can be; I have never seen him." He then said to Cayote, "I have traveled all over this country, and never met anyone like you before." Speelyai then replied by saying, "I have been where the sun comes up, and where it goes down, and both north and south. You say you have been eating people; let us both vomit, and see who will throw up most bones, and then we shall know which of us is greatest." Amash agreed to the proposition. "Nox," said Speelyai, "let us both shut our eyes and vomit, and we will not open our eyes until I say open." The owl said "All right." So both shut their eyes; the owl man closed his tightly, but Cayote slyly kept, his partly open, so as to watch what the owl was doing. Amash vomited up a large quantity of bones and skulls of human beings, while Cayote could only throw up bones of mice and squirrels. In this dilemma, in order to preserve his reputation, Speelyai slyly changed his bones over to the owl, and took the owl's pile of bones to himself. He then said; "Now let us open our eyes and see what we have thrown up." When both had looked, Cayote said, "You see that you eat nothing but mice, while I eat

human beings, for the bones there show for themselves." The owl was greatly astonished, and proposed that they try again, which they did. The operation was repeated five times, Cayote every time appropriating the owl's bones. The fifth time Cayote said, "Since you vomit nothing but mice bones, after all your pretensions, I must take your head off." The astonished and terrified owl man surrendered himself, whereupon Speelyai cut off his head with a great stone knife. He then said, "You have been killing and destroying long enough," and taking up the owl's carcass, he pitched it off into the mountains, pronouncing sentence upon him thus: "You may stay there in the mountains, and startle the traveler in the night with your hoot and scream, but you will never destroy life any more. A new kind of people are coming soon, and they will have no use for you." From that day to this, owls have always been small and harmless, and they stay in the timber and hoot at people, and make them sad, but they have never killed anyone since the Indian god pronounced the curse upon the owl tribe.

The spider, in the wonderful animal age, was a giant rope maker, who made great rope webs, with which he entangled the people, and then he pounced upon them and sucked their blood. The present race of mosquitoes that plague man and beast, are insignificant insects compared with their ancient progenitors, who were larger—if we may believe the Indian myths—than an ox, and drove the other animal people almost to distraction. Speelyai finally killed the mosquito god, by splitting open his head, from which millions of little mosquitoes, such as now exist, swarmed forth. The Indians say it was the god Cayote who gave them salmon. A very long time ago, five young women had an immense fish trap across the Columbia, near where Astoria

now stands. This trap prevented the salmon from going up the river, and the people above were suffering for food, but could get no fish. Cayote was hungry among the rest, and determined to get the fish up the river. He transformed himself to a little Indian baby, on a pappoose board, and got into the Columbia and floated down to where the women had the fish dam. They saw him and took him out of the water, like Pharaoh's daughter, of old, did Moses, taking him to their homes. Having no husbands, they intended to raise the infant to be a man for them. But when they left him in their hut, while they were gone, he found out how everything was, and by craft succeeded in getting the dam broken, and the salmon went up with a rush, and all the people above were supplied.

Most of the phenomena of nature are ascribed to some being or beings, without the intervention of natural laws. The winds are the breath of some being. The Eastern Washington and Oregon Indians say that the warm Chinook wind, and the cold east wind, were anciently five brothers each. The Chinook wind brothers lived down somewhere toward the mouth of the Columbia, while the cold wind brothers lived somewhere east of Walla Walla. The Chinook wind anciently blew much stronger than now, tearing up trees and blowing down the people's habitations, while the cold wind blew hard, and was so cold as to freeze them, so that, between the two winds, they were constantly kept in trouble. A great while ago, the cold brothers sent a challenge to the Chinook brothers for a wrestling match, the conditions of which were, that whoever was thrown should be beheaded. Speelyai, the Indian god, was to be umpire, and to execute sentence by cutting off the unsuccessful parties' heads with his big stone knife. Agreeable to this understanding, the brothers on each side met. In the

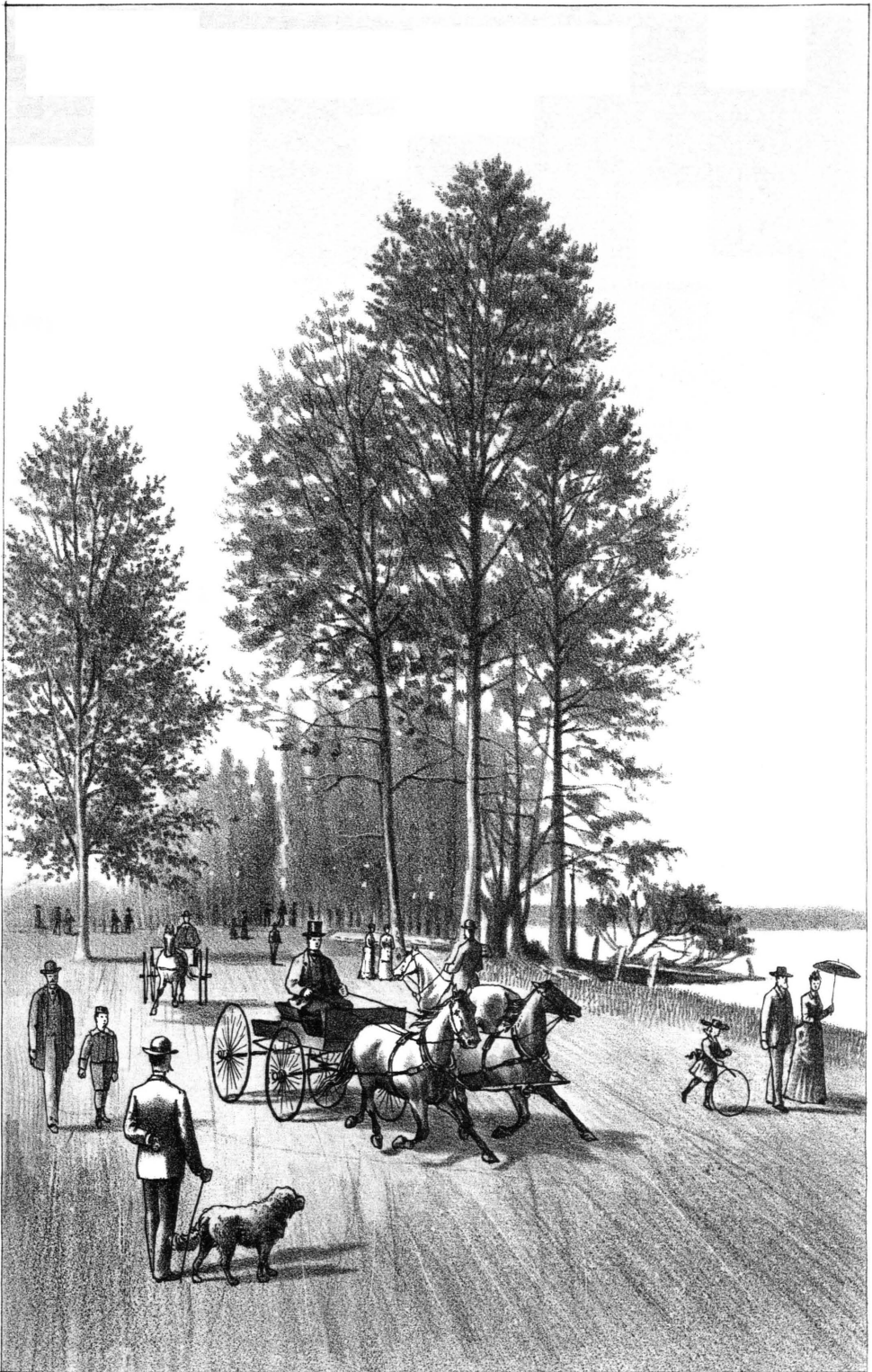
contest, the Chinook wind brothers were all thrown, and, as agreed upon, Cayote beheaded them. The eldest of them, however, had an infant son, who, in time, grew to be a very strong young man. Having been told, by his mother, of his father's death at the hands of the cold wind brothers, he vowed to avenge it, and daily cultivated his strength by such exercise as pulling up trees, beginning with very small ones when he was very young, and increasing the size as he grew stronger and older. In this way, he, like the old woman who lifted the calf every day, became very powerful, so that it was nothing for him to snatch the largest tree out by the roots. When he thought he was a match for the cold wind brothers, he sent them a challenge for a wrestle with the same conditions as in the former contest. The result was, the cold wind brothers were thrown, one after another, until four were down and beheaded, when Cayote stopped the contest, saying it was not good that there should be no wind, but that thereafter the cold wind should not be so freezing, nor blow with such violence, but should continue to blow cold in a moderate form. The Chinook wind was not to blow with such violence as to break down the trees, and destroy people's houses, but should continue to blow in a milder form, for a new race of people was to come, who were not to be destroyed by the winds. The Chinook wind was to blow strongest at night, and the cold wind in the daytime, which they have continued to do until the present time.

The Indians, in their wild, natural state, believe that every natural object, whether animate or inanimate, is dual in nature, having, besides the corporeal physical nature, a spiritual essence, or something of the nature of a soul. Even manufactured articles, as bows, arrows, pipes, and utensils of all kinds, are re-

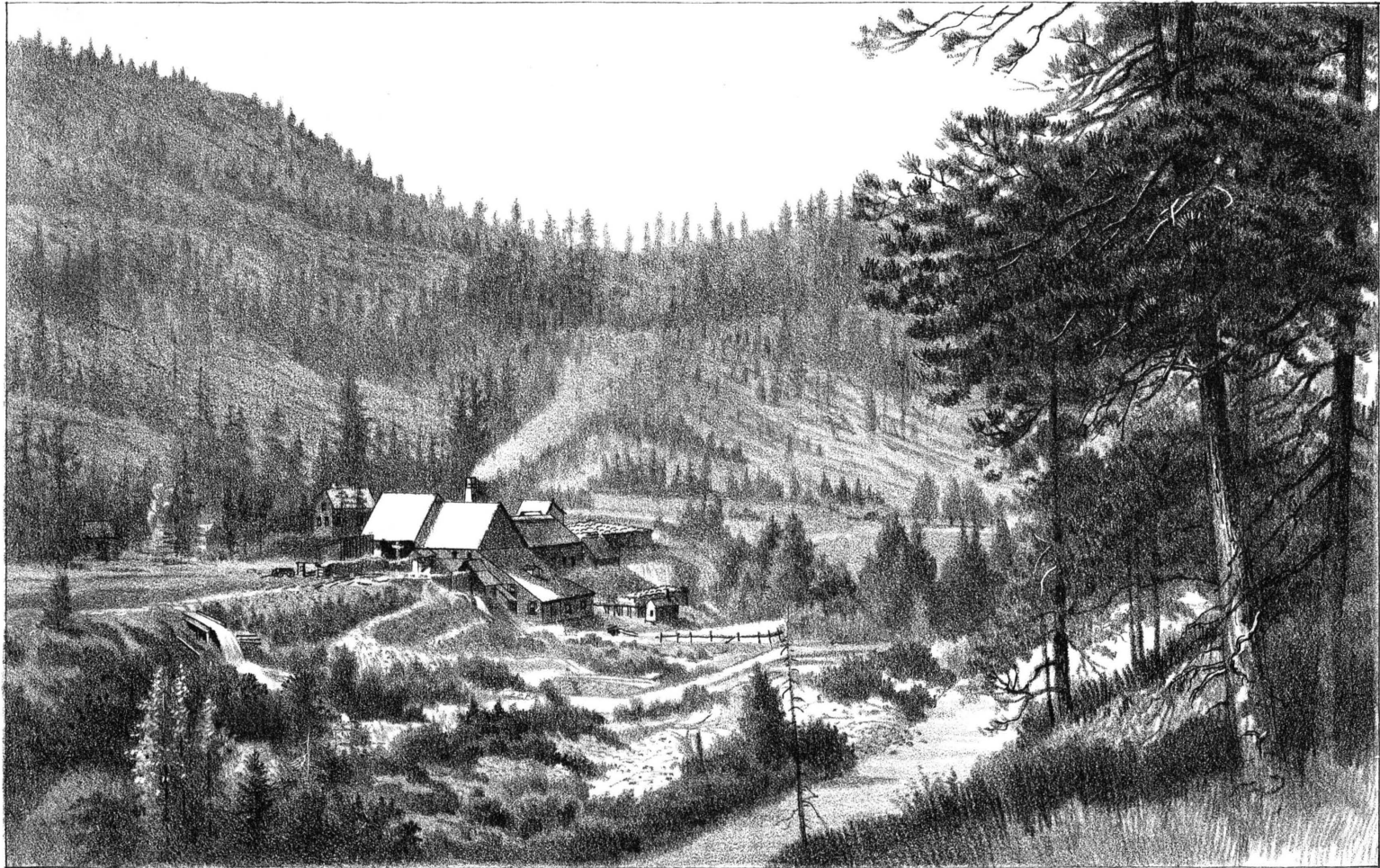
garded as having a sort of spirit existence. All animals are immortal, they say, and everything that exists on earth, and dies or rots, will reappear again somewhere. The future life of the Indian is essentially a reproduction of this life, but in a bettered condition. In the spirit land he will get hungry, but will be able easily to procure plenty to satisfy his hunger. He will not suffer from sickness or death, and will never grow old in the Indian heaven. He expects to follow much the same pursuits in the other world that he did in this, and will need his horses, gun, dog, knives or bows and arrows; not the actual metal or stone knife, nor wooden bow and arrows, but the spirit essence of them. It is for this reason that these things are buried with him, or put on or near his grave. Utensils have holes punched in them, bows, guns or saddles are broken, so as to be useless to the living, that the temptation to steal them may be removed. As a broken arm or a wounded body does not affect the soul, so these injuries to the implements and utensils will not affect their invisible spirit natures.

Indians believed animals held conversations with each other, and that the Indian babies and dogs conversed with each other. They even had certain doctors, or doctresses, who claimed to be able to understand the dog language. These doctors, who were generally women, were called "dog understanders," or "baby understanders." The disciples of Darwin might get a crumb of comfort from the Indian theory of his animal origin. Generally, however, the change from animal to Indian was too sudden, according to their cosmogony, to suit the gradual evolution theory.

Among the Indians of California and Arizona, there is a myth that accommodates itself better to the demands of the scientists, though the evolution took



OREGON-IN THE COTTONWOODS NEAR PORTLAND.



IDAHO—THE BOISE RIVER AT BUFFALO MILLS.

place in a rather novel manner. With them, as with the Columbia river tribes, Cayote was the great *fac totem*. Those Indians were all cayotes anciently, but, in process of time, the cayotes began to evolve into Indians—a toe, finger, ear or nose at a time—until the cayote came out, at last, a noble red man, without even so much as a caudal appendage to attest his origin. This is evolution with “variations,” and outdoes Darwinism itself. The Darwinians and these ancient philosophers ought to try to meet on some common platform, for the benefit of science.

Some of the Lower Columbia river Indians say that when the Indian god,

Cayote, first made the Indians, they were in rather an imperfect condition, having their eyes shut, and having no mouths with which to eat. Cayote afterward found some of them wandering about this way, blind and hungry, when he kindly cut mouths for them and opened their eyes with a stone knife, and being in somewhat of a hurry, and having a rather bad cutting instrument, he got some of their mouths very crooked, and this accounts for the crooked and ugly mouths still seen among some of the lower river tribes. The reader may smile, but this is a myth that undoubtedly is very old, having been handed down for many generations.

G. B. KUYKENDALL, M.D.

To be Continued.

THE AUTOGRAPH STONE.

HAL arose, as a veiled woman appeared in the doorway. He could not identify her, and was a little puzzled and vexed. He did not enjoy mysteries, but his native gallantry returned and he wheeled forward the easiest office chair, and said quietly, “Please to take a seat, Madam.”

The woman sank into the chair with a sigh, and put aside her veil. Hal gasped in surprise, for, after all, he knew his visitor, only she was so wholly unexpected. The face revealed, was that of good Mrs. Randall; but she was actually pale, and attired in her best “bib and tucker.” She seemed another woman.

“My sakes!” she began. “Didn’t yer know me? Law! Well, I s’pose ’twas

the veil. I came to see ye on business; are you busy?” she added.

“No, not at all; I can hear anything you have to say,” returned Hal, cordially.

“Well,” began Mrs. Randall, “I’ve been that worried sence that snow slide that I’ve growed thin over it, an’ I told Jim I couldn’t, an’ wouldn’t, stay there no longer’n I could help. But Jim, he says he can’t leave a stiddy job, jest on ’count o’ a whim; an’ to tell the truth, I can’t blame him. He says when I git him a job some’rse else, he’ll go, an’ not before. An’ it struck me, Mr. Thornton, that you’d want help on the ranch, an’ likely the women folks ’d want help, too, an’ if ye’d put up a little shanty on the

place, Jim could work for ye, an' I could wash an' iron, an' churn, an' board extra hands, etc. Could ye?" she asked, in sudden anxiety.

Hal considered a moment, then he said, "I already have a little house of two rooms, near our house, but I've engaged Mike for a steady hand, and —"

"Don't ye need more'n one hand?" asked Mrs. Randall.

"Not the year around," replied Hal, but I shall need two from now until after haying—say, till the first of September."

"That's three months steady work," said Mrs. Randall, "an' the job at the mines is sure only a day at a time, if Jim does call it steady."

"Mother and Alice would need just such help as you could give," said Hal, "and I've no doubt Mr. Bennett, my nearest neighbor, could give Jim a job on the range when I don't need him. Well," he added, "talk it over with Jim, and if he will take the job, he can. You can have the use of the house, and all the fire-wood you want. I will give Jim \$40.00 per month through the season—that is, from spring plowing, through haying. You will be paid by the week, at regular wages, for what you do in the house. How does that suit you?"

"It's perfect!" declared Mrs. Randall, in a transport. "I quite long for the farm, an' for vegetables an' flowers I can raise myself. An' now I'll not trouble you longer, so good-bye, Mr. Thornton." She arose as she spoke, and held out her hand in farewell. "One thing more," she added, "when'll ye want us if we do come?"

"We will move down on Wednesday," said Hal, "and if you conclude to accept my terms, it would be convenient to have your help in getting settled."

"Le' me see—this is Saturday," said Mrs. Randall, reflectively, "I'll go up termorrer, an' I'll let ye know Monday."

"All right," said Hal. Mrs. Randall said good-bye again, and went through the other office, and out into the street.

"Mrs. Randall, from the boarding-house, above," explained Hal, to the clerk.

On Monday, one of the ore teams brought down a short, ill-spelled note from Jim Randall, saying he would be glad to go on the ranch, and would bring their goods down next day, and be ready to go out with Mr. Thornton, on Wednesday. Alice and her mother were pleased with the engagement, and Mrs. Randall proved herself an energetic, efficient woman in the moving and settling. Jim, who had been brought up on a farm, was really very practical.

By June 1st, things were running quite smoothly. The plain, but large, and neatly built farm house was comfortably, even luxuriously, furnished. Hal had spent a few days in April in helping Mike set out some little fir trees, from a neighboring mountain. A lawn had been started, and a vegetable garden and a few flowers, started by Mike, were doing finely. Hal was happy in his new home. To be sure, he was in debt for part of the buildings and fences, but he hoped the crops would pay up in the fall—if not, they certainly would in another year. He already felt in better health and spirits, and was conscious of a new independence, as delightful as novel. One moonlight night in June, he stood on his porch, and gazed with rapture on the scene before him—from the sloping lawn and little meadow, to the river below, whose musical ripple mingled with the pretty piano accompaniment which Alice softly played within. Across the grassy field beyond, his eyes wandered to the climbing foot-hills, the fir-clad mountains, with the eternal snow-capped range above and beyond. Over all, the silvery moon-beam lingered lovingly.

"Beautiful! Grand! Glorious!" he

muttered aloud. "All my own to enjoy as long as I have my home here."

"Only one thing lacking," said his mother's voice, close beside him.

"And what is that?" asked Hal gaily, putting his arm around her. "I must confess I find nothing lacking this evening."

"A wife," said Mrs. Thornton gravely.

"A wife!" echoed Hal. "And what in the world do I want a wife for, with a dear, good mother, a charming sister, and our efficient Randall?"

"After all," said his mother, "'a good wife is from the Lord,' and I shall be glad to know you have one, even though I am less to my noble boy," she added, fondly.

Hal laughed, and said: "Well, when I find the right girl, I'll try to deserve and win her."

"You will deserve her at any rate," said Mrs. Thornton, as they gave one look at the scene without, and entered the house.

And so the summer slipped away, and it was haying time. On the Saturday before they expected to begin cutting, Jim and Mike were sharpening the sickles and oiling the machine, and otherwise getting ready, and Hal went into the railroad field where he was to begin haying, and walked around it to judge of the quantity and quality of the crop. In one spot he came upon a heap of stones, which would interfere with the machine, so he commenced throwing them out toward the river bank. As he picked up one, of a smooth, round appearance, his eye caught a glimpse of what seemed to be writing, but the stone was thrown, from impulse, before he realized his desire to examine it. He hunted it up, and—yes, there was writing on it, in one of the purple, indellible pencils. Looking closely, he read:

Hugh Gordon, Laura Linton, Delta, Vt.

Hal sat down on a big rock, and regarded the autograph stone with interest and curiosity. He turned it over and soliloquized aloud—

"Well, now, I suppose some one walking along the railroad has sat down here to rest, and carelessly scribbled his name and—Hugh Gordon!" he exclaimed, with a gasp. "Why, that is the name of the poor chap who got killed in the snow slide last spring! And here is an address—some friend or relative. Strange, it should come to me."

He rose to his feet, and hesitated, then started for home, carrying the stone with him. "I'll ask mother what to do," he thought, for it seemed to him that he ought to write to this Laura Linton, and tell her of Hugh Gordon's fate. She might be waiting, even now, for his return.

Hal found his mother and Alice in the shady sitting room, busy with the needle. He showed them the stone, telling them where he found it, and his theory about how it came there. They were greatly interested, but when he told them the first name was that of his chance acquaintance who was lost in the snow slide, they were as excited as himself.

"You ought to write to Laura Linton right away," cried Alice.

"Ought I, mother?" queried Hal.

"I think so," she answered slowly—"Yes," she added decisively.

"And right away," put in Alice.

Hal arose. "I don't know how to say it," he declared helplessly.

"It is difficult," admitted Mrs. Thornton.

"I'll try it now," he said, and went to his room; but when he had arranged paper, and sat down, it seemed impossible to write a word. Long he sat and thought and mentally composed a dozen letters. At last, in desperation, he drew a sheet of paper toward him and wrote:

RIVERSIDE, M. T., Aug. 1, 18—

Miss Laura Linton:

You will, no doubt, be surprised to receive a letter from an entire stranger, nearly across the continent, but I have something I believe to be of interest to you, to write. Today I discovered, on a stone, in one of my fields near the railroad, your name, in connection with that of Hugh Gordon. It recalled to me a short, but pleasant, acquaintance I had with a gentleman of that name, who was an insurance agent, and was stopping, last March, in a little mining camp near here. I was, at that time, cashier for the mining company, and was up there to pay off the men. The rest, I would gladly keep from you, if you are a friend of Mr. Gordon's; but I feel it my duty to let you know his sad fate. Without being able to avert it, with my own eyes, I saw him caught and buried in a cruel snow slide. His body was recovered, and lies buried in the little cemetery at Juniper gulch. I endeavored to find some address, but there was nothing on his person but his insurance documents. I wrote to his company, but they knew no address of friends to give me. Now, when providence throws your address in my way—probably written by poor Gordon when he passed here—I must write. Forgive me if I have not told the sad news as delicately as I should. It is shocking, at best. Let me hear from you if you get this.

Respectfully,

H. M. THORNTON.

Hal carried the letter to his mother, who read and approved it. Then he took it himself, to the post-office, and they all waited in suspense for an answer. It came in a little over two weeks. Hal tore open the envelope, glanced at the pretty, ladylike penmanship, turned it over, and read, at the end, "Louise Linton."

"Louise?" asked Alice. "Are you sure it was not Laura?"

"Sure," replied Hugh, "but I'll read what it contains:"

DELTA, VT., Aug. 10, 18—

MR. THORNTON,

Dear Sir:—I received, yesterday, your letter addressed to my sister Laura, who has been away since last March. She was engaged to a Hugh Gordon, who went west as an insurance agent. One day last March, my sister who was not feeling well, lay asleep on a sofa. Sud-

denly she started up, and cried out that Hugh was dead or dying, and he had called her. We could not reason her out of the notion, and she wanted us to say that she ought to go west and find him. Of course, we ridiculed the absurdity of the thing. Well, to come to the point, she left home secretly that night, and we have not heard the least thing about her, nor obtained the faintest clue. We are sure she went west, but fear she has got into trouble, or is dead. The coincidence of Hugh's death, and her dream, is remarkable. We have used every means in our power to trace Laura, and a wealthy gentleman friend has even been out to Butte City, but failed to discover her. You are a stranger, and we have no claim on you, but if you could make a few inquiries for Laura, you would greatly oblige two lonely women. My father is dead, and mother and I are now alone. Laura is of medium height, has clear complexion, brown eyes and hair, good features, and a winning smile and manner. If you should be able to get any trace of her, please let us know.

Yours most gratefully,

LOUISE LINTON.

"That is not a very minute description of a young lady you are to hunt for," said Alice.

"At any rate, I am not to look for a *petite blonde*," said Hal.

"Dear me! It's getting very romantic and interesting," was Alice's next remark.

"The picture in the poor fellow's pocket book must have been of her," said Hal musingly.

"It is a case of 'nexts,' as Mrs. Whitney would say," observed Alice. "Clearly, your next duty is to go to Butte and hunt for this runaway."

"As soon as haying is over, I will go," said Hal.

"Do you mean it?" asked his mother.

"Certainly! I can get the prices of crops, and may be, dispose of what I wish. Besides, I have never visited Butte, you know, and it is too great a sight to let pass."

"You can go any time, we are so near there," said his sister.

"Yes, but that is the reason so many in the vicinity of Niagara have never

seen the falls; what one can do any time is scarcely ever done."

So it was settled. Hal replied to Miss Linton's letter, stating that he intended going over to Butte in a few weeks, and would try to get some news of her sister. Then followed a month of hard work. Haying is a "brow-sweating," business for the farmer, but there is a charm and picturesqueness about it, fascinating to the quiet looker-on, and not wholly lost on the workman. The fragrance of the new-mown hay is almost intoxicating, and the pleasure of seeing little colonies of stacks, growing, counteracts all fatigue. Besides, hay-making in the West is almost entirely free from the disagreeable part of it, as known in the East. There are no days of overpowering heat, when a sense of suffocation makes one almost crazy. There is no anxiety about rain coming to spoil the broad swaths and open stacks. The western ranchman works beneath a cloudless sky, in bright sunshine, with sweet, fresh mountain breezes tempering the heat. Not worrying about possible damage by rain or heavy dews, he works more leisurely, and enjoys, to the full, the beauty and fragrance of the year. Hal thought he never so enjoyed a month of work, and when the huge stacks of green hay—peculiar to the West—were finished, the sigh of relief was half of regret. He did not forget his promise to the waiting sister, in the green hills of Vermont, but made his arrangements to go very soon, "on business," as he informed Jim and Mike. And so, Mrs. Thornton was not much surprised when Hal came home one night and said—

"I am going to Butte to-morrow."

When Laura was left alone in her room that dreadful night in March, she lay quietly in bed until assured that her mother and sister were asleep, then she arose and commenced making prepara-

tions for a journey. She had decided she must, and would, go west.

Hugh was alone in the world. There was no one but herself to care what became of him, and she would prove herself "all the world to him." She was weak and dizzy, and moved unsteadily around the room in her task of dressing and packing her valise.

She took with her two or three changes of linen, a wrapper and one good suit besides her gray cloth traveling dress. She took a few of her best collars, handkerchiefs, etc., all her money and small stock of jewelry, which was all valuable. At 2:00 o'clock she was ready, and taking her valise in one hand and her shoes in the other, she noiselessly descended the stairs, and gained the kitchen undiscovered. She took a little cold chicken and some bread and butter she found in the pantry, and quietly let herself out into the clear, cool night.

By this time it was 2:30. She knew the stage would start in an hour. She walked to the end of the lane, and putting down her valise, paced steadily back and forth to keep warm. Her thoughts were busy and the hour passed quickly, even to her impatience. When she heard the stage rumble up from the stable to the hotel, she walked quickly over and took a seat in it, unobserved. She was the only passenger for the first ten miles, and the driver did not know she was there until he opened the door to admit a man and boy.

He was surprised, but when failing to produce a ticket, she paid him in cash, from an apparently well-filled purse, he considerably forbore questioning her.

They reached the railway station at about 8:00 a. m., and Laura bought a ticket, not for New York, but for Montpelier, where she had in bank a few hundred dollars left her by an aunt.

On arriving at her destination she took a cab and drove to the bank. She

had no difficulty in drawing the money, as she knew the teller. She then went to a hotel, and securing a room, went to bed with a raging headache, which kept her a prisoner all the next day, and so delayed her journey west.

This was probably the reason why her artist admirer failed to find her at New York. He did not start west until a week afterward. Laura, meanwhile, recovered somewhat, went to New York the third day, and procured a ticket to Butte City.

She had never before traveled alone, and the thought of a trip across the continent to an unknown region, kept her nervous and excited. After a day or two, however, she became impressed with the efficiency and politeness of the railway officials, and rested more quietly.

The journey was long and tedious, but Laura's thoughts were so distracted she scarcely minded the fatigue any more than she did the beauties of scenery, at which she stared uncomprehendingly.

The picturesque hills and vales of Pennsylvania, the broad prairie farms of Ohio, Indiana and Illinois, the immense plains of Nebraska, and the growing grandeur of the mountains farther west, were all alike to her—so much ground to be passed before reaching Hugh.

She realized the boldness of the step she had taken, but if, after all, Hugh were alive and well, they would be married at once and all would be right. But if, as she believed, she should find him dead, she would bury him, and—

But the rest was a blank.

So on and on the iron horse flew, and one day, sick and weary, she found herself in Butte.

She beckoned to a man she saw standing near the station, and said—

“Is there a hack I can get? I want to go to a good hotel, at once.”

“Sartingly, ma'am,” he drawled, and

added: “There's a driver goin' to the St. Nicholas, I'll call 'im.”

“If you please,” she said.

Soon she was in the hack with another lady and rattling along the city, which looked strange enough to her eastern eyes.

“The largest mining camp in the world, Hugh wrote,” murmured Laura, to herself, gazing out at the volumes of smoke belching from the chimneys of the works.

When they arrived at the hotel, she was assigned a room, and asked, as she was too tired and ill to eat, that a cup of tea might be brought to her.

Soon a cheery fire burned in her room, and after a hot cup of tea she went to bed, and did not arise until about 8:00 o'clock next morning.

As she dressed, she planned her work, and after breakfast proceeded to carry it out.

She searched the register of the hotel, but did not find Hugh's name, so she went out to search at the other hotels and inquire for him at the business houses.

The novel scenes around her interested her in spite of herself. She was surprised at the rich attire of the ladies, and at the display of goods in the large stores.

She found Hugh's name on the register of one hotel, entered in February, and she met one merchant who remembered seeing him early in March.

Somewhat encouraged, and very tired and hungry, Laura bought a copy of the *Daily Miner*, and went back to the hotel. She ate the first good, substantial meal she had been able to take for some time. “This air must be good for appetites,” she thought, as she drew her pudding toward her, and unfolded the paper.

She was looking for quiet lodgings. She noted several addresses, and after a

short rest, started out to call at them. Nothing suited her, until quite late she stopped at the last address she had. She found a neat house, where she could have a nice, quiet room at a reasonable price, and meals at a neighboring restaurant.

The landlady was such a motherly woman that Laura had told her story before she knew it.

"Very sad, my dear" said Mrs. Lane. "I do hope you will find him. What is his name?"

"Hugh Gordon," replied Laura.

Mrs. Lane started. "Hugh Gordon!" she repeated. "I do believe, my dear—yes—I know—he roomed here along in March. Let me see, this is the first week in April. Yes, and he went out to some small camps, and left his valise here till he should come back. I think it is here now. Come with me and we will see."

She led the way to an upper floor, and entering a comfortable room, found a well-filled valise in a closet.

"Is this his?" she asked.

"Oh, yes, yes!" cried Laura, excitedly. "And he hasn't come back! Where do you suppose he is?"

"Oh, detained in some of the camps, I suppose," ventured Mrs. Lane, cheerily. "You see, when he comes, he will find you right here. Won't he be surprised!"

Laura restrained a shudder, and said she would go to the hotel and settle up and bring her valise.

It was about dark when she returned to Mrs. Lane's, and that good lady insisted on having Laura share her tea that evening. It was a comfortable, tasty meal, and Laura, somewhat settled, and a little hopeful, enjoyed it.

She sat and chatted with Mrs. Lane while she did up her work, and for some time afterward, and it was after 10:00 o'clock when she finally said good night

and went to her room. She did not feel at all sleepy, and seeing a dilapidated old book on a shelf in her closet she sat down to read it. She read until she dropped to sleep in her chair, with her head on her folded arms on the table, and her woolen shawl over her shoulders.

She was troubled with bad dreams, and the confused sound that awoke her seemed a part of them. It was some time before she awoke sufficiently to realize where she was, and what was the matter. Something oppressed her and she struggled to her feet just as some one rapped loudly on her door, and cried "Fire!"

It was true. She could distinctly hear the roar of flames and smell the smoke. She was already dressed, so she caught up her valise, threw her shawl over her head and rushed to the door. The key was in the lock, but in her haste and agitation she could scarcely turn it with her trembling fingers.

Once in the hall, she could see the fire at the other end, beyond the staircase. Her way was clear, and she ran without hindrance, until on the stairs she met men rushing up to save furniture from the upper rooms.

The lower part of the house was burning, and she went out from the front door to the street. The noise, the crowd, the falling cinders, the water that fell in dirty torrents from the roofs of neighboring houses, all alarmed her, and she forced her way through the crowd to find a quiet street.

Suddenly her valise was snatched from her.

She turned, but could catch no sight of it, or of anybody who looked suspicious. Everybody was running the other way, intent on seeing the fire.

On she fled, and turning into an open door, found herself in an eating house. To a man who appeared she explained

that she had escaped from the burning lodging house, and would like to rest there a few minutes until she decided what to do.

The man was a German, but he was touched by her beauty and distress, and assured her, in broad brogue, that she might rest as long as she pleased.

It was not a pleasant situation to review.

Laura could hear the shouts of the firemen and the crash of falling timbers, and she realized that she was a "stranger in a strange land," homeless, houseless, with no money, save about \$10.00 in her pocket, and not a change of clothing.

Her money, jewelry, everything, was lost in the stolen valise. She could not go home, neither could she stay and wait for Hugh's return, unless she went to work to earn something.

Yes, she must do that at any rate.

At this point in her meditations, a fat woman came into the room and looked curiously at the stranger. Laura arose at once and went to her, saying—

"Have you a room you could let me have until to-morrow?"

The woman, too, was German, but she could use the English language better than her husband.

"Vell, I might," she said, meditatively.

Then Laura told her of the loss of her money and clothes, and added: "So, you see, I must get something to do—some work, to earn money to go home, and get me more clothes."

"Umph!" grunted the woman. "You vants verk, eh?"

"Yes," assented Laura, sadly.

"You verks for me?" questioned the woman.

"At what?" asked Laura.

"Vaits on der tables," was the reply.

Laura hesitated. She thought she could not do such work; but if she re-

fused she might not be able to get anything else at once, and besides, this was in the neighborhood Hugh would seek on his return.

At last she said: "Yes, I will do it—for a time."

"How much you vants?" asked the woman.

"I don't know," replied Laura, more truthfully than wise. "I never worked out before, and I have just come west. You know what you have paid."

"Yaw, I bays dwenty-five tollar a month. I gif you dot, eh?"

"Yes," said Laura, glad to have finished the bargain. "And now, can I have a room?" she asked.

The woman, who said her name was Mrs. Miller, went to the next room, and returning with a small lamp, led the way to a neat, but rather bare, little room, opening from a branch of the hall, on the same floor.

"Call me when you want me," said Laura. "What time do you have breakfast?"

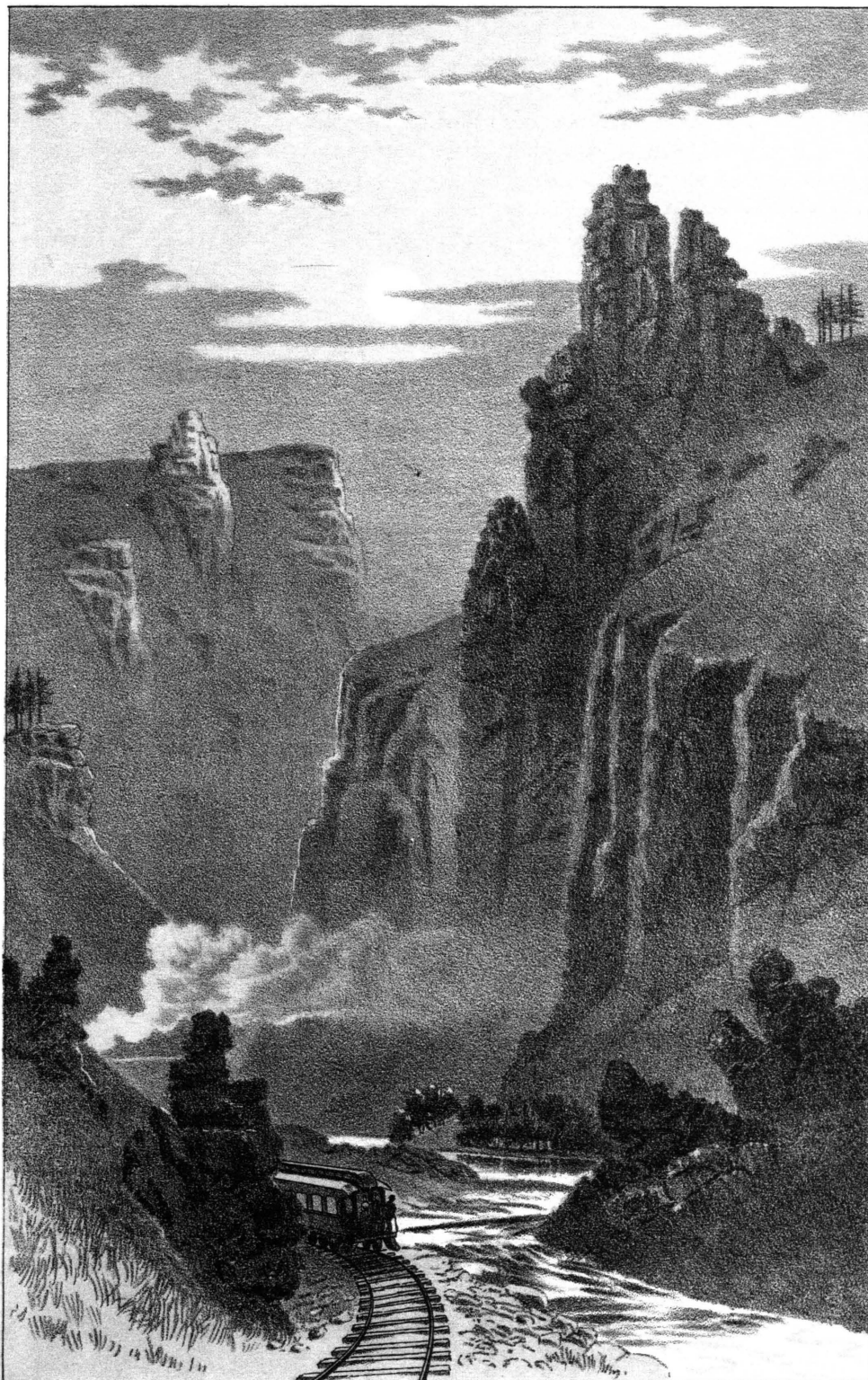
"All de way from 6:00 till 9:00 or 10:00," replied Mrs. Miller.

It was then 3:00 o'clock. Only about two hours and a half more in which to rest.

She did not undress, but threw herself across the foot of the bed, and fell asleep in spite of the noise and excitement.

It seemed but a minute before she heard a knock, and Mrs. Miller's voice calling her.

She arose at once. Fortunately she had a little pocket toilet case, and with the aid of the miniature affair, she managed to get her hair into presentable shape. She had no apron, and her gray traveling dress, though entirely plain, seemed to suggest—well, certainly not a table waiter. Laura smiled a little bitterly at her position, as she tucked her modest watch and chain entirely out of



MONTANA-SILVER BOW CANYON, UTAH & NORTHERN R.R.



SOUTHERN OREGON—TABLE ROCK, FROM BEAR CREEK.

sight, and removed a set ring from her finger, leaving only the slender gold band Hugh had placed there.

She found her way to the eating room, and Mrs. Miller was bustling around arranging the tables.

A bell rang, the door opened, some men came in, and Laura's duties began. It was all new to her, but she was quick to learn and rapid of movement, in spite of her disgust. She did remarkably well, and won golden opinions from her employer and from the boarders. She was very tired when, about half past nine, the last customer had departed.

She ate her own breakfast, then asked permission to go out a few minutes.

She went to a newspaper office and left an advertisement for her valise—quite certain, however, that it would do no good. She then went to a store and bought some ready-made aprons, some ruches, etc., also a cheap hat, as she had left hers in the burning building, and had borrowed one to come out with.

She returned to arrange tables and wait on them for the noon meal, helped clear away, and waited again in the evening.

Thus she went on, monotonously, day after day, Sundays included, for five months. Each month she had received her money and deposited all she was not obliged to use, in a bank. She had now just \$100.00, and thought she must soon go home. She had not written because she could not bear to say she had not found Hugh, nor to confess what she was doing. Daily she looked for Hugh, and daily she was disappointed.

Her work and her employers were alike distasteful to her, but she had not yet found courage to leave the place for an uncertainty.

On Saturday she went to the bank and drew her money, determined to buy a second class ticket and start home on **Monday**.

She did not notice a suspicious looking man who was watching her as she received ten bright gold eagles and put them in her pocket book.

She passed out—so did the man.

As she walked rapidly toward home, some one brushed by her, pressing closely for an instant, and she thought something caught her dress. She indignantly drew away and looked around. No one was near her. She had just passed a corner. She felt in her pocket—

Her purse was gone!

Frantically she turned her pocket inside out, searched the fringe of her light wrap—all in vain. She turned sick and faint. Catching sight of a policeman, she ran to him and related her loss and described her pocket book, etc. He promised to do all he could to recover the money, and Laura reached home, went to her room, sat down and cried.

She was obliged to restrain herself and prepare for supper.

Her eyes showed traces of weeping, and she was trembling with suppressed anger and emotions of varied character. Mrs. Miller was not in a good humor. She had frequently been cross to Laura, who quietly ignored it, as she knew her services were considered valuable. This evening, as Laura was passing to the tables with a tray of dishes, Mrs. Miller, brushing past her in the door, threw the tray and its contents on the floor. Already excited, this exasperated her entirely beyond reason, and giving Laura a smart slap on the cheek, she shrieked, in her shrillest tones—

“Dakes dot den.”

The room was quite dark at that hour, and but a few late customers were at the tables. All heard the crash and the loud talking, but only one saw the slap. This was a good looking young man, who had taken his meals there for a year past, and who had endeavored, without giving offense, to show his growing admiration

for the pretty waiter. He started up, as if to cross the room, then checked himself and sat quietly, until Laura, having replenished her tray, came back. He was the last she served.

He spoke eagerly: "Miss Laura, I saw that old hag strike you. Surely you will not stay here after that?"

"Certainly not," replied Laura, with quiet dignity.

"Where will you go?"

"I don't know; I am almost a stranger in Butte," said the innocent girl. "I must find work somewhere," she added, and then, moved by his sympathizing manner, she told him of the loss she had met with, thus delaying her return east.

"Miss Laura," he said earnestly, "I want to be your friend. Let me take you to-morrow, to a house where you will be welcome to stay until you get a place to suit you. Will you?"

Unaccustomed to suspicion, Laura gladly accepted the kind offer, and he agreed to call for her about four o'clock the next afternoon. Laura's cool, dignified manner indicated to Mrs. Miller her displeasure, and that worthy *frau*, fearful of losing the best hand she had ever had, humbled herself in numerous apologies, of which Laura took no notice. That evening she packed her few belongings in a little hand trunk, ready to take away, and, next day, quietly waited on table at breakfast and dinner. When she saw her escort, Mr. Williams, coming, she said to Mrs. Miller—

"After what occurred last evening, I think best to leave you. I am going now, so good-bye. Minnie can wait on table until you get some one." Mrs. Miller opened her mouth to scold, but just as Mr. Williams opened the door, she cooled down.

"Ready, Miss Laura?" he said.

"Quite ready," she replied.

"I'll not pay vat's comin' to ye," exclaimed the woman.

"If you choose to take that advantage of me, you can," calmly replied Laura. "I'll send for my things in a day or two." She passed out on the street with Mr. Williams.

"Shall we take a walk before going to my friend's?" he asked.

"If you please," she replied.

So they walked quite a distance, and it was about dusk, when, at length, they turned off Main street, and came to a row of houses of good appearance, lighted brilliantly, although it was not quite dark. Laura noticed that there was a transom over the door of the house at which they stopped, with some name on it, but she had not time to read it, for Mr. Williams at once opened the door into a hall, and led her in.

"Is this your home?" inquired Laura.

"Not exactly my home, but I am at home here," laughed the young man.

He led her into a handsome, showily-furnished room, and giving her a seat, begged her to wait there while he found his friend. He left her, but soon returned with a woman, apparently about thirty years of age, of fine form and pretty features. She was finely dressed and very effusive in her manners. She took Laura's hand cordially, as they were introduced, and assured her she was welcome to stay until she found a place to suit her.

"Well, you are tired, Miss Laura, I will go now," said Mr. Williams, "but with your permission, I will call to-morrow afternoon, as I have been invited to tea."

"Certainly," returned Laura, politely.

He took his leave, and Laura's hostess led her up stairs to a pretty room, saying, "I'll send up tea to-night if you wish."

"Thank you; you are very kind," said Laura. "I believe I should like it."

And so, after drinking the tea sent up,

and eating the delicate little meal accompanying it, Laura was alone for the night, and she soon retired and went to sleep. Next morning, a neat maiden brought in breakfast on a tray, and Laura asked her to inform the lady of the house that she had a sick headache, and should be obliged to keep her room for some hours, at least. Soon her hostess came up to see if she could do anything for her comfort. Finding that rest and quiet was all she desired, she was left in peace all day. About five o'clock a message came, asking if she felt able to see Mr. Williams, and take tea down stairs. As she was better, she quickly dressed and made her way down stairs. She blundered into a different room from the one she was in the evening before. There was a rich *portierre* between this room and one adjoining. She sat down, and almost immediately heard a door open into the other room, and the voice of her hostess say—

“ Ah, Alfred, how d'y ? ”

He responded, and added: “ How is the little innocent ? ”

“ Had headache all day,” was the reply, “ but she is coming down. I say, Alfred, hadn't you better give this one up ? I know, by the looks of her, she won't give in easy.”

“ Ah, jealous ! ” sneered Mr. Williams, “ but, my dear, I actually like her, and mean to make her do as I please. You just take care of her for me — ”

Laura heard nothing more. The room seemed to spin around. She now understood where she was. She gave a wild glance around, and observed an open window near. Swiftly parting the curtains, she quietly let herself out on the ground, and in the gathering dusk, fled—she knew not whither. She ran around the corner, and met two gentlemen talking—

“ Oh, sirs ! ” she cried, and dropped, fainting, at their feet.

F. A. REYNOLDS.

To be Continued.

KJOKKEN MODDINGS.

WRITERS of to-day, while dilating upon the curiosities of the Northwest, usually confine their researches within the horizon of the present; that is to say, they go no farther back along the path of time, than the period which marked the advent of the Caucasian race upon the delightful expanse of the Northwest coast. A few, indeed, there are, who venture—but timidly—to lift the veil of the past, and furtively glance into the dark recesses of

bygone ages, where are hidden the archives of our prehistoric age, and open the pages of the grimy records, and point out the lines which portray the coming, the gradual rise and progress, and the passing away, of the first settlers upon our shores—the stunted anthropophagi, from Siberia's, now cold, then warm, extended plains. Should the reader deem it expedient to digest the following theory—which is unhesitatingly advanced by the writer—by the addition of a grain

of salt, very well; for doubting does not always fail to bring conviction. But to doubt, is to reason and analyze, which makes up the whole fabric of human progress.

Along our Pacific shore, are numerous ancient shell heaps and mounds of earth, which have attracted but little attention from the Americans since their advent upon the coast. With but few exceptions, no notice has been taken, or examination made, of the numerous remains of the ancient dwellers on the seaboard, from the Bay of San Francisco to the Straits of Fuca. South of San Francisco, and north of Fuca, exhaustive reports have been made of the ancient inhabitants and their remains, which may be used to advantage in unearthing the darkened past of our primitive population. The shell heaps of Ounalaska are abundant and extensive, and as far as they have been examined, give evidence of extreme antiquity. Accepting the theory of the advance, from the northward, of the first of our inhabitants, the shell heaps there would considerably antedate those on the Oregon coast, and bear, at their foundations, or first deposits, a similarity in appearance and composition. That they are exactly alike in the respects mentioned, has been amply verified by unimpeachable authority.

In the examination of evidences of prehistoric man on the shores of some of the Swiss lakes, notably of Zurich and Constance, nothing earlier than the stone age has been exhumed. In fact, all that has, up to the present time, been found, is of a far more recent date than evidences of man produced by the lower stratum of the shell mounds of the Oregon coast. On the shores of Jylland, and the Danish islands, there are numerous shell mounds, some of which are one thousand feet long, one hundred to two hundred feet wide, and about ten

feet deep, which, since their nature has been discovered, are considered to be of great archæological importance. In former times they were thought to be layers of debris, thrown up by the waves, but after much theorizing, and a few feeble attempts to examine them, two eminent antiquarians, Worsaae and Strenstrup, began a laborious research, which developed the fact that they were Kjekken moddings, or the kitchen refuse of a prehistoric people. They mainly consisted of oyster shells; but there were, also, other mollusks, and bones of deer, pigs, oxen, fish, cats, dogs, and the great auk. Besides these rejectamenta, there were stone arms, implements, and coarse earthenware. In their megalithic graves, weapons, ornaments, etc., were found, which nearly correspond to those found in the graves of the inhabitants who had reached the stone age on the Pacific coast. In many peat beds, where successive generations of forests have been carbonized, flint instruments have been found at the lowest level. The people, then, who left these middens behind, and those who dwelt where now the peat bogs are found, were not more remote than the stone age. Their graves of divers forms, large, or giant chambers, as well as smaller ones, were enclosed with granite blocks. The ancient tribes on the California coast used sandstone slabs in a similar way, those on the Oregon coast being content with boards, split from redwood and cedar trees, and all covered their graves with mounds of earth.

The foregoing, which relates to other people and other moddings, has been written so that a better understanding may be reached of the far more remote people who dwelt on our own coast. But again, by a close study of the skulls found on the Jylland coast, and those found on the sites of the villages on the Swiss lakes, it is thought that other, and

less developed, races were driven out by those who used stone implements, and left no trace of their existence, other than their bones. In the same manner, and with other convincing evidences of its certainty, it is apparent that a race of small stature, less perfect development, and subsisting upon such diet as they could secure with their unaided hands, nude, without shelter, other than wild animals might secure, lived on our coast thousands of years before the age of the earliest history of the eastern hemisphere, and were displaced by a sudden migratory wave from the north.

Coming from the south, the first considerable modding is found on the west bank of Chetco river, near its mouth, four miles north of the state line. Six miles farther up the coast is another, more extensive; and after passing by numerous smaller ones, we come to the north bank of Pistol river, at the mouth which are several large rocks, near the shore, that break the heavy swells of the ocean, and which stand upon the summit of the most extensive modding on the Oregon coast. These three shell mounds will serve to illustrate what has been said in regard to the primordial race that, in the late tertiary or early quaternary period, dwelt on the Oregon coast.

There are no shell heaps except where there are, or have been, villages; and no villages except where there are extensive shell heaps. At many places where there were no villages, and shell heaps were present, the ground—that is, the decomposed moddings, mixed with drift sand—always presented a pitted appearance, from the following cause: When the natives determined to build a house, the first thing was to dig a pit. Over this the building of split boards and posts was erected. The mass of shells and sand out of the excavation, was, after the house had been completed, thrown

back against the boards composing the sides. Now, supposing that a village had been built, and, from some cause, was afterward destroyed—that is to say, the wood work was either burned or rotted away—only the pits, then, would be left; and as time passed on and the rains beat upon them, washing down the sides, and aided by the drifting sand, they would gradually fill, until this undulating or pitted appearance would be exhibited. Should this abandoned site be again built upon, pits would be sunk in this accumulated mass of debris, or kitchen refuse; and so, for ages, the work and gradual changes went on, till to-day the ancient dwelling places can be distinctly traced by the luxuriant vegetation growing upon the pitted and decomposed rejectamenta.

In running a horizontal cut into the deep mass of decomposed shells at the mouth of Pistol river, the writer found, after a very careful search, the top of the original soil, which was a yellowish, sandy hard-pan. Upon this hard-pan, after the cut had penetrated about twenty feet into the mass, was found an inch or two of what seemed to be greenish white sand, which increased in thickness and became more noticeable, as the cut was advanced toward the center of the accumulated mass of shells and bones. At the top of this apparent sand, a few rudely-fashioned stones were found, indicating by their formation, that they had been used for cracking shells and nuts, and for no other purpose. Besides these rude hammers, were several small pieces of obsidian, which appeared to have been wrought into shape by human hands. On the top of this layer of peculiar, sand-like substance, was a cemented mass of small mollusk shells, the bones of small fish, and a few shells of the well known mussel (*mytilus edulus*), which, toward the top of this layer, was the predominating shell, and

formed the bottom of a third layer, consisting of shells, bones of birds, fish, deer, bear and elk. This was the upper stratum, was deep and solid, and had the appearance of having been dug over many times while building new houses. Mr. Dall, in his researches among the Ounalaska shell heaps, found similar strata, and thus classified them in his report: first, echinus layer; second, fish-bone layer, and third, mammalian layer. He also found this echinus layer to be, frequently, five feet deep, under many shell heaps; and after exhibiting his calculations of the quantity of echina in a cubic foot, and the length of time required to build the first layer, says: "Bones of vertebrates, except those of fish, are totally absent in the echinus layer. Shells were not sufficiently abundant to modify the appearance of the stratum, which was totally free from earth or any extraneous matter, and presented the aspect, until closely examined, of fine, pure, uniform, greenish-white sand."

As investigation among the Oregon shell heaps develops a marked similarity to those of the north, it is plainly apparent that the lower stratum in these heaps was likewise formed by a race of men living in a remote age, greatly inferior to the present Indians, without implements, save wooden clubs, who at last gave way before another migratory wave from the north, of a people more improved, but who had only reached the paleolithic, or rude stone age. That this was the case, the very few and rude stone implements left behind, upon the top of the first, or echinus, stratum, amply testify. August Miller, whose dwelling is a noted landmark, standing, as it does, on the summit of extensive moddings at the mouth of Chetco river, while digging a deep pit in the rear of his house, found, after going down through vegetable mold, then drift sand mixed with

decayed rejectamenta, then through a layer of bones and shells, then through shells which were in greater proportion of small mollusks, cemented together, this identical echinus stratum, below which was the customary hard-pan. At Cape Sebastian, between the Chetco and Pistol rivers, a cut was made into another huge pile, with like result; so it is unquestionably true, that a race of beings lived on our coast, so slightly developed that they could leave no trace in worked or fashioned instruments, or refuse from food larger than snails, very small animals, perriwinkles, and some other small shell fish, which could be gathered on the rocks along the shore at low tide. The presence of these small shells and bones, just under and on the top of the soft, sand-like layer, is strong evidence that they were placed there by human hands. As this layer increased in height, as at Pistol river, a very few rudely-chipped pieces of stone were found, with which, as before stated, the feeble people cracked the shells of small mollusks and nuts. These increased in number and workmanship until near the top of the second, or fish-bone, layer, where were found an awl, made of bone, and a few stone sinkers, which were the first indications of any mode of trapping fish. These layers were very distinct, and when the last, the mammalian, or modern, layer was reached, stone and obsidian knives, wedges, spear heads, bone awls and fishing barbs were strewn plentifully just under the surface and on top of the stratum.

Paul Schumacher, who made a partial examination of the shell heaps at Trinidad, California, and at Chetco, Oregon, did not express a definite opinion that the rude and the more artistically formed instruments found, the one in the second layer and the other in the third, were fabricated by the same class of people; but should he have more minutely ex-

amined the layers separately, he would not have hesitated in declaring them formed by three distinct classes of primitive inhabitants. This echinus deposit has only been found under shell heaps, and in it has been discovered no awls, needles, knives, buttons or shell money, nor any bone or stone implements for dressing skins, such as are found in the the top layer, nor any manner of weapon with which to take or cut up game; and still more to the point, no indications that any animals, other than the smallest species, were taken or used for food; no remains of canoes or houses, nor tools to make them; nothing, in fact, but a deposit which was surely indicative of a people who had no clothing, subsisting upon a diet of roots, snails, minute shell fish, and such other fish and small game as they could capture with their unaided hands. They were small of stature, for they were surrounded by all the outside influences which retard, or prevent, muscular development. That they lived in a state of nudity, can not be doubted; for they could not, as did their successors, accumulate skins for clothing, nor make it from grass, for they left no awls or needles behind to show that they had fabricated clothing from any material whatever. Under these circumstances, then, in the absence of all that which was possessed by the earliest historic savages, we must infer that their development was in such a primitive stage that they may have been—must have been—anthropophagi.

If the prehistoric cave dwellers of the valley of the Cher and other places were tainted with cannibalism, why not accuse those who had not yet arrived at the stone age of the same unnatural usage? As these primordials advanced with the ever-recurring tides of migration, they arrived at the threshold of the paleolithic age, and formed their little rude stone hammers, to crack the

shells of the sluggish snail or the nuts that fell from the sheltering trees. As in ancient Europe and Asia, where the dark, primitive races were pushed along by other and more developed people, gradually adopting the ways and means of their superiors, and as gradually becoming more expanded, both mentally and physically, as they moved before, or were absorbed by, those waves of weightier mind and muscle, they abandoned the practice of cannibalism; so was it, also, on our own shores.

Conceding that a remote, and not self-progressive, race of anthropophagi did dwell upon our coast in an early age of man, and were the authors of the echinus stratum, how shall we account for the fish-bone and mammalian layers? We can not candidly deny the existence of these strata, so plainly marked are they to the most casual observer, therefore, we must conclude that the authors of the first layer did not fashion any implements, and that they were not possessed of any until the top of their primitive modding was reached, and then, only, by the aid of another and superior race—or, did they invent them? The step from the first layer to the next is too sharply defined for a gradual progression. The human bones of this first race, found in the echinus stratum, differ essentially in size from those found higher up. Particularly is this true in the comparison of skulls. This, then, is of itself, sufficient to give strong coloring to the theory that these primordials did not gradually advance, but that they were set forward by a sudden and overpowering wave from the north coast, of a people who had been in contact with a superior race, and had brought with them the knowledge of fashioning rude implements of stone, and the secret of snaring small fish and birds and animals, and who added more and larger mollusk shells to the primitive mounds.

They, too, must have been in a state of nudity, or nearly so, for instruments to trap the game and dress their skins do not appear until a greater height in the fish-bone stratum is reached. That they were not clothed need not elicit surprise, nor inquiry as to whether they could live in a state of nudity, for other nations, notably those of Terra del Fuego, living in a cold climate, do amazingly well in the naked state.

After the lapse of ages, and when the second, or fish-bone, layer had been accumulated, a third migratory wave swept down from the north, of a people still more advanced in the science of life, with more ingenuity in fashioning implements of war and the chase, tools and the knowledge of their use in making canoes, houses and clothing. A new era began with them, also another, the mammalian, addition to the slowly rising mounds of kitchen refuse, which, to-day lie buried under varying depths of mold and drifted sand, and are surmounted by tall trees and matted vegetation.

Of the land connection between Asia and America, in the quarternary times, LeConte says: “* * and certainly, as shown by the similarity of American plants to those of the region between

the Aleutian isles and Behring's straits, and those of Northern Asia. Thus, migrations were not enforced by climatic changes, but permitted, by geographical connection with adjacent continents. *

* * It is evident, from all these causes, that mammalian fauna, from widely different regions, were precipitated upon each other.” Man, certainly, preceded the mammalian invasion, as is fairly attested by his earliest remains, which have been found, as before stated, in the echinus stratum of the mighty shell mounds described. Another writer says: “Archæologists are agreed that the men who dwelt in the caverns of the Pyrenees, on the Vezero, and the Aveyron, were kinsmen of the Laps, Samoyeds and Eskimos. Their mode of life, weapons and implements seem to support that conclusion.” Ledyard says: “When I stood on the banks of the Obi, and observed the natives in all their varying aspects, I could not convince myself that I did not have the natives of North America before me.”

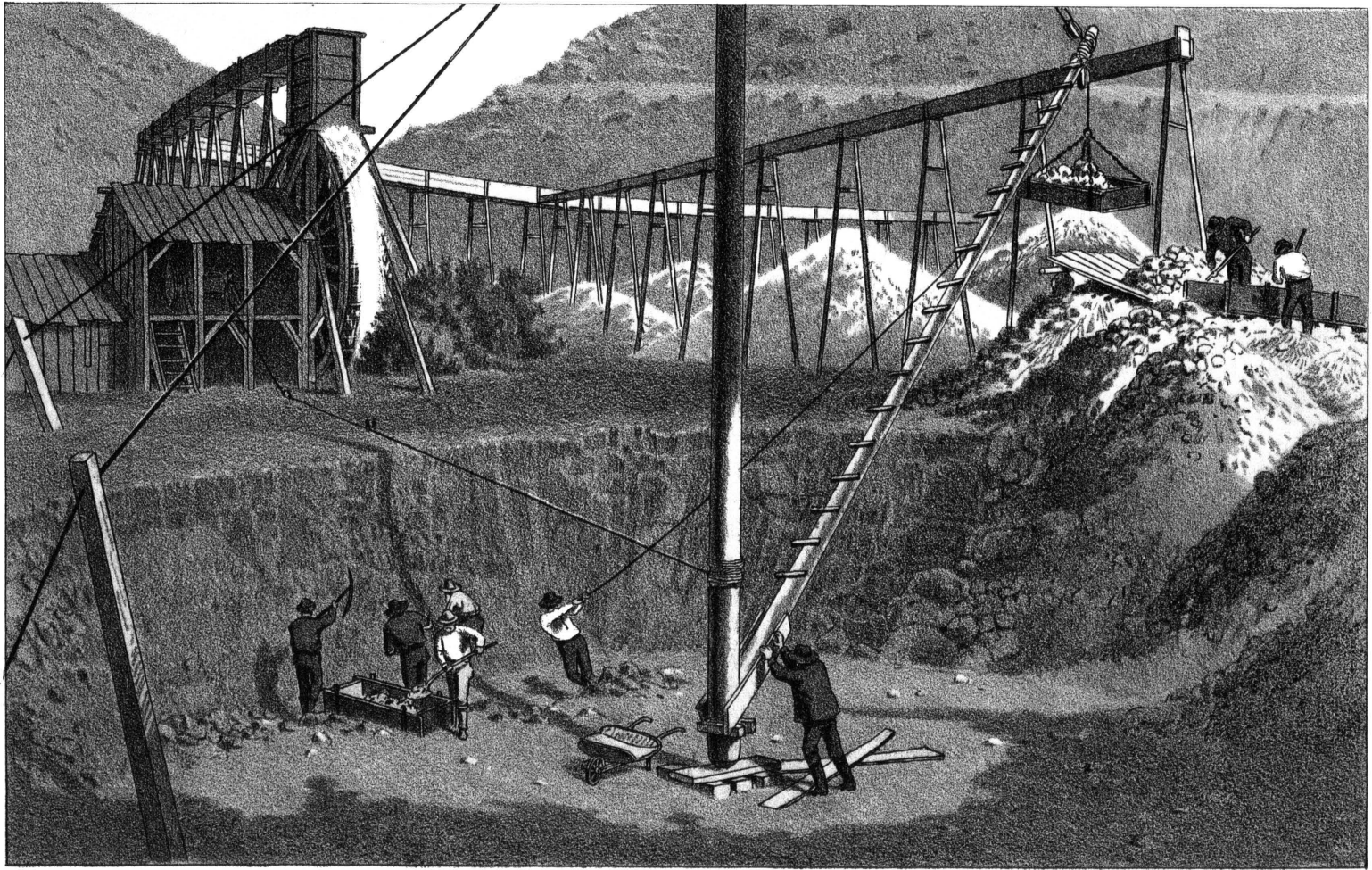
Thus wave after wave of improved people came and added to the shell heaps, till the formations were arrested by the last, greatest and most improved race of all, the Caucasian.

O. W. OLNEY.

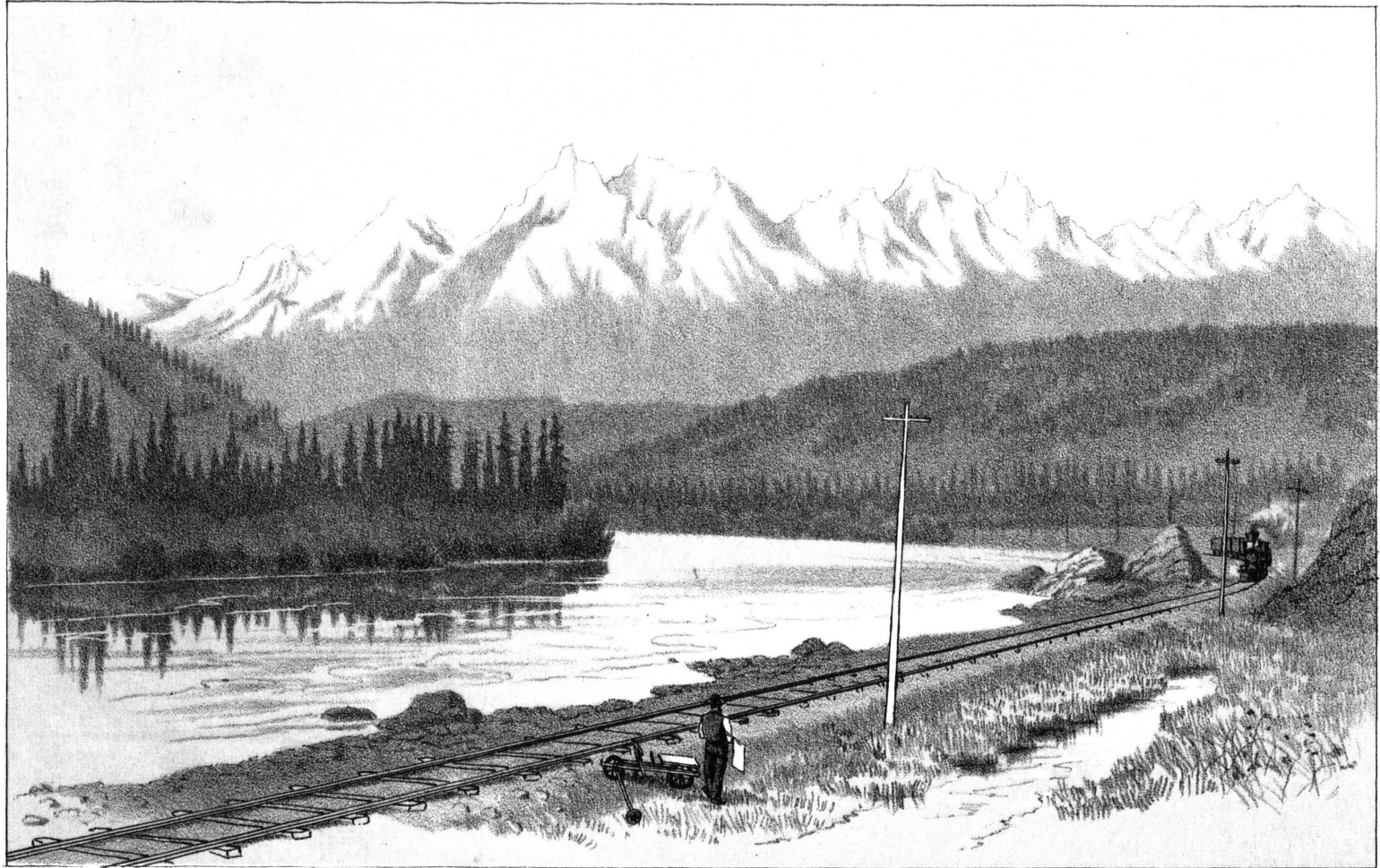
SPRING IN THE BUNCH-GRASS COUNTRY.

THE coming of the vernal season is welcome in all lands and among all people. The dwellers in the frozen climes, where exhausted nature lies in lethargy for weeks after the severities of the long winters are past, are gratified with the sight of the first slow-creeping “pussy tails” along the willow boughs, and welcome with joy the shiv-

ering note of the first frost-bitten robin and blue bird, even though the adventurous songsters must hug the sheltering evergreens for warmth on sleeting nights. The children are happy indeed, if, after a whole April afternoon of patient search through the sugar camp, they can bring home a handful of bright mosses, a few of the insect-like blos-



HYDRAULIC MINING IN THE NORTHWEST.



MONTANA-CLARKE'S FORK OF THE COLUMBIA, NEAR PERMA.

soms of the maple trees, or a bunch of glossy wintergreens, with their delicious red berries, which ripen under their mantle of snow.

I have seen and welcomed Her Ethereal Mildness in many climes, but for genuine spring, full of sweet surprises, and delightful awakening of plant, tree, flower, brute, human, give me the foothills of the Blue mountains—the bunch-grass country of Eastern Washington—before them all. Here, the winter goes to-day, the spring comes, not to-morrow, but in the intervening night. Where the snow drift lay but yesterday, the bunch grass is green and smiling in the bright sunshine to-day. The catkins on the willows are an inch long before you notice them. The children astonish you with handfuls of yellow and purple wild flowers, while yet the snow drifts lie along the northern rim of the hills, within ten minutes' climb. Here the gentle spring is not the "maiden coyly loitering in the lap of winter." Here is no lingering mud, no slowly-thawing earth. The goddess has laid aside her prudery, like many another immigrant, and affiliated herself with the spirit of the country. She comes upon us unadvertised, unheralded, and in the bustle and vigor of her operations is like unto an energetic housewife suddenly smitten with a mania for house cleaning. She setteth wide her doors, and we are disturbed and inflated by a "roaring chinook." The heavens are opened, the big streams rise, the little rills are bank full, and the dry canyons run with water for the space of two days and a night. And now is everything "swept and garnished," and lo! the carpet is spread, also, the most beautiful that the sun shines upon, and instead of fading it grows brighter and richer under his beams each day. One little immigrant, on seeing for the first time the unbroken verdure upon the thousand hills, ex-

claimed: "Oh! mamma, it looks as if it had just been swept."

The telegraphic reports from the East tell of blizzards and snow falls in March, while the urchins of Washington Territory are gathering buttercups and going barefoot. We read our storm-stayed Eastern mails while we munch fresh lettuce from our gardens, and inhale the perfume of a bouquet of wild flowers from off the hills. If we want ice cream for dessert, on a warm March or April day, the children will climb to the drifts under the brow of the hill, and bring us a bucketful of snow, and also a profusion of flowers to decorate the dinner table. An impromptu picnic of several neighboring families, on a warm March afternoon, is the height of enjoyment. The youngsters have fun playing "Injun," building a wigwam and camp fire, and snaring the mischievous ground squirrels with lines.

It is a joyous and enlivening experience, even to an old settler, to ride over the hills in the sunshine of a balmy spring day. The plows are turning over the black earth, in every direction. I have counted more than a dozen in sight at once. The grass is rank and green, stock on the range is beginning to look sleek and lazy. The western and southern hillsides are literally glowing, as I look up at them, with millions of little wild flowers, pink and purple, yellow and blue. The startled curlews rise out of the roadside grass, uttering their weird and doleful cries. The cheerful meadow lark flies from post to post along the fences, swelling up and bubbling over with his familiar melody—and if I should roam from "India's coral strand" to "Greenland's icy mountains," that warble of the meadow lark, wherever heard, would bring before my wandering fancy the picture of these foothills in all the beauty of their springtime dress—bands of sheep are

basking on the hillside, the herders sitting by their dozing ponies, the dogs only, apparently, alert and watchful; over there, lying down together in a quiet nook, or leaping and frisking as their mothers feed—a sight to make a “tenderfoot” cry out, and children clap their hands—are a thousand plump and snowy little lambs. A house-cleaning badger peeps out of his hole and hisses; the specter of a cayote gallops away over the distant hilltop, stopping to pounce upon a wayfaring mouse or ground squirrel; the sudden descent of an irate and belligerent cow upon my retreating dog, betrays the proximity of a downy, new-born calf, cuddled up in the sunshine. Everything is redolent of the joyous season. The wind, which inspires our lungs and elates our senses, comes from the snowy summits in sight,

pure and bracing, and suggestive of the pine trees. A cloud lies black above the peaks, and perhaps a veil of rain hides one of them, or a shower may be seen trailing far off in the valley below. One forgets cares and aches for a moment, laughs, sings, mimics the lark, and walks up the hills merely from the effects of superfluous energy. Who can be tired or sick in an atmosphere like this? Can one ever grow old, or die, with such a fountain of youth in which to bathe? We endure our summers and pardon their dust for the sake of their delightful evenings; we enjoy our autumns when they linger pleasantly into December; we while away our month of winter as best we can; but the season of all seasons, in the bunch-grass country, is spring—the long, lovely, delightful spring.

“OLD DAD’S” COLD STORY.

THE miner’s little cabin is, undoubtedly, the source of the biggest prevarications, saddest stories, and sharpest wit and humor in the great West. This can be accounted for by the fact that miners and prospectors have nothing to do, during the long and tedious winter months, but to relate reminiscences and entertain each other by story telling. This, very naturally, makes them bright and quick witted, and they become very enjoyable companions.

One evening in January, three old prospectors sat in their lonely cabin in the Sawtooth range, isolated from the world—away from society, with its disappointments and pleasures, its dissensions and its vices. The sky was dark,

a heavy snowstorm was raging, and a gloomy silence pervaded the hut. One was, perhaps, meditating on the past, with visions of home, mother and loved ones passing through his mind; another, wondering how their ore would turn out in the spring, and building castles in the air—possibly the face of some beautiful little damsel peered out of the recesses of his memory, as he meditated. But of this we know nothing.

The silence was at last broken by Dick West, as he closed the door and lighted his old clay pipe.

“Darn my buttons if I don’t believe we’re going to have some weather. It reminds me of a winter I once spent in Northern Montana, where it got so cold that all the whisky froze up, and old

topers could be seen walking the streets, eating pieces of it just like children eat snowballs in more civilized communities. Quicksilver had to be thawed out before it could be used in quartz mills."

"Old Kentuck" followed by saying: "When us old pioneers first struck the Wood river country, it was late in the fall, and everything showed signs of an awful hard winter comin'. Why, there weren't a deer track under six weeks old, and every one of 'em pinte straight toward Snake river valley. The big piles o' dirt around the badger holes showed that they had dug mighty deep to get below where the ground would freeze. We knowed it ware goin' to be a mighty hard winter, an' built a good, warm cabin. Well, it kep' a gittin' colder an' colder, till our can o' coal oil froze up solid. We just cut the tin off'n it, bored a hole in the oil, stuck in a wick, set 'er on the ole board table, an' she done splendid. The only trouble was that the blaze would freeze up sometimes, an' the light from it 'ud be sort o' pale for a day or two at a time, until she thawed out an' started up agin. Durin' a snowstorm, one forenoon, it turned awful cold, an' the flakes froze tight to the air while comin' down, an' there they stayed still 'tween the clouds an' ground, all day long."

"Old Dad" Freeman, who had not said a word up to this time, began to show signs of some discomfort at the possibility of being obliged to resign the reputation he had gained of being the best relator of unreasonable stories. He gained a little time by whittling tobacco and filling his pipe. At length his eye brightened, and his aged countenance beamed with joy as he began—

"Do you hear them cold winds passin' mournfully through the tree tops, callin' to mind that lots o' people may now be tryin' to find shelter from the storm, an' many a big-hearted prospect-

or freezin' to death, or gettin' kivered up by snow slides? Them's things we don't like to think 'bout. Well, as I was goin' to say, I've follered prospectin' all my life, an' seen a good deal; but gentlemen, when I think o' the weather on the head o' Stickeen river it almost makes me believe that roses and honeysuckles ought to be a' bloomin' outside now."

The indispensable brown jug was in the cabin, and "Dad," turning it on his right arm, swallowed a good quantity, and continued—

"May I never taste liquor again in my life, gentlemen, if what I'm goin' to tell you ain't a positive fact. 'Long about July, in 1860, six or eight of us old mountaineers took a notion into our heads that we'd go where no white man had ever been, so we boarded a steamer at Portland—that's down in Oregon—for Alaska. We landed at the mouth of the Stickeen an' made for the interior. I could tell you lots about the trip, for we had an awful time, but as we are only tellin' cold stories now, we'll let that go. In about a month I believe we were pretty near the north pole. Some o' the boys was skeered to go any further, so we built a cabin for the winter, in a patch o' timber on the side of a mountain. It kep' a gettin' colder an' colder, till the quicksilver in the thermometers froze up. Then the other boys got skeered about winter comin' an' started back. They wanted me to go, too, but I told 'em Jane—that's my best girl—had gone back on me, an' I'd jes' as leave stay an' freeze hard as a granite cliff as to go back and die of a busted heart. Well, the cold kep' increasin' till I did get a little skeered, for a fact. My dog, Towser, would look pitifully up into my face and whine, which he never done before. Thinks I, 'Old Dad, you'll go to the happy huntin' grounds this winter.' I broke the

bulbs of my two thermometers, an' may I never taste liquor again, gentlemen, if it ain't a fact that they was both froze as hard as rock, and I played marbles with 'em on the dirt floor of the cabin all winter. I had an idee that a compass would point straight to that cabin from any direction. One evenin' it got considerable colder than common, an' I thought it wouldn't be a bad idee to get in a good supply of winter's wood; so next mornin' I went out and commenced to chop, but may I never taste another drop o' liquor as long as I live, gentlemen, if it ain't a fact that I couldn't hear the ax, but the chips was a flyin' mighty lively. I thought I had gone deaf, and it put me to thinkin'; but I didn't know how to make sure of it. But at last, thinks I, 'Old Dad, we'll get out the old rifle and fire her, an' if we don't hear her we'll never listen to any more big weather stories.' Well, I pnted the gun at a cayote, that was settin' on his haunches on the side o' the hill above me, throwin' his head just as if he were a howlin', and pulled the trigger; but nary a sound. That satisfied me, as the animal keeled over, kicked a little bit, and died. After about a month's work, there was a tremendous big pile o' wood by the cabin, and I spent another month shootin' game. All around the cabin there was white bears, cayotes, wolves, foxes, squirrels and birds. One day I took a notion to go down into the valley below the cabin, but got stuck when about half way. It 'peared just like a man tryin' to get fifty feet under water. The harder I worked the more I couldn't get down. Well, I went back to the cabin an' kep' a thinkin'—wasn't

sure then but what I might be only a dreamin'. Next mornin' there was a sheet o' frost two feet thick from where I got stuck, to the side o' the mountain across the valley. I cleared off a place and looked down through, and it was just as beautiful as could be. Just enough light from the snow and frost to make it look like a pale moonlight. After a long and tiresome winter, I was settin' thinkin' one day, when I heard Towser whine, and I was awful glad to find out I could hear again. Then an ax sounded outside, an' I jumped to the door, my heart a floppin' with gladness to think some one had come to my relief; but it was desolate outside, and not a human bein' in sight. Purty soon it sounded outside just like a hundred men in a loggin' camp, all of 'em choppin' as if they was cuttin' logs by the foot; thousands o' birds and squirrels were chirpin'; cayotes and wolves howlin', bears growlin', a regiment of soldiers a fightin', and the mournful wind was again sighin' in the tree-tops, just like it is outside now. Then a tremendous crashin' down toward the valley attracted the attention of the critter up there at the north pole, an' on lookin' down, I saw that frost tumblin' down into the valley. Then I saw what was up. All the noises made durin' the winter was immediately froze up, and was thawin' out; but why the air froze from the bottom, instead of from the top, like water, puzzles me yet, but may I never touch liquor again, gentlemen, if it weren't a fact. Catch me a winterin' again in that country? Not much, if 'Old Dad' knows hisself, an' he thinks he do."

E. W. JONES.

HYDRAULIC AND PLACER MINES.

MY first introduction to the hydraulic mines was about nine years ago, when, with open-eyed wonder, I watched the "little giants" and "monitors" tear down the auriferous banks at Smartsville and Timbuctoo. I went up by stage from Marysville, passing, in succession, the historic Long bar, Parks' bar, and others of those famous "diggings" of the Yuba, once the scene of restless industry and life, and now a waste of willows, sand and "slickings." After picking my way cautiously down the bank, to the bottom of the washed-out claim, a descent of fully three hundred feet, and toiling laboriously over the rough bed-rock, strewn thickly with bowlders, large and small, I at last arrived where the monitors were at work, whose roar, like the dashing of a cataract, had guided my steps long before they came in view over the rough surface of the tortuous channel. A huge iron pipe wound its black, serpentine length along the bed-rock and up the bank, disappearing from view over the brink. To the ends of branches of this main pipe, the monitors were attached, and from their nozzles, the water, with a pressure, from the top of the bank, of fully three hundred feet, rushed with a velocity scarcely credible. I gazed in amazement at the havoc created by the little stream when it struck the bank at a distance of not less than two hundred feet, making the dirt and bowlders fly into the air, and causing the bank to crumble away and disappear. I have been in many hydraulic mines since then, have seen ditches seventy miles long,

and bed-rock tunnels for flumes eight thousand feet in length, and have seen a dozen "little giants" working at one time at midnight, when the darkness was dispelled by the glare of many electric lights; but never have I experienced such a sensation of wonder and astonishment as came over me when I first saw the mighty power of a little water confined in those long, snaky pipes, at Smartsville. Since then, I have seen mining in many forms, but they have come to me only as so many added experiences; not, as in this case, as a sudden revelation, an introduction to facts and ideas of which I was before naturally, but lamentably, ignorant.

To fully understand the theory and methods of placer mining, a brief review of the steps by which its present development was reached, will be necessary. Though following, in the abstract, certain fixed principles, the methods of mining are as devious as the eccentricities of nature in the selection of treasure vaults for repositories of the precious metals. Not only is the method dictated by the natural conditions, as to whether the gold is contained in quartz, gravel, cement, or sand, but the local conditions and topography of the country, as well. If quartz, the ledge may be so situated that it can be worked by a tunnel from the side of a hill, or it may require the sinking of a shaft from the top. It may be situated so that water may be easily drawn off by gravity, or it may need expensive pumping apparatus to keep the mine from becoming flooded. These indicate but a few of the common diver-

gences in the first principles of but one branch of mining, that where gold is found in its primitive condition, so far, at least, as it appears in any appreciable quantity. There is, however, a secondary condition in which gold is found, and in this state, it is extracted by some of the simplest, as well as some of the most costly and extensive, systems of mining. This is its condition when the quartz has been disintegrated by the action of the elements during ages past, and the gold has been carried by the streams, and deposited all along their courses, from their birth-place in the mountains to their final resting-place in the sea. This was the form in which the metal was first discovered in California, and this is the class of mining indicated by the typical gold hunter of art, with his shovel, pick, pan and rocker. Into these two divisions, the industry is divided—quartz mining and placer mining—and each is subdivided, as before suggested, into many classes, owing to the conditions existing where the work is done. The proper definition of placer mining, is the working of shallow deposits in the beds, or along the margins, of streams, the word being of Spanish origin. The term has, however, come to signify, in general, the mining for gold as found in any form except quartz.

The theory of the deposition of gold in the beds of streams, is a simple one. During countless years the work of disintegration of quartz ledges has been going on, and the detritus thus produced has been carried down by the streams and deposited on the flats and bars along their courses. Naturally, the coarser particles were deposited first, and the lighter and finer ones later on; and thus the miners found it when they first began operations, the gold being fine and "floury" in the valley, and gradually becoming coarser as they ascended into the mountains, until it was found in

scales, little chunks the size of beans, large nuggets, and pieces of quartz with gold still fixed in its original position. It is, in fact, this "float quartz" which supplies the strongest evidence of the origin of the placers. The fact that the gold increased in size and quantity as they ascended the stream, was the strongest inducement possible to lead the miners into the very heart of the mountains in search of the "source of gold," and prepared their minds for the credence of Stoddard's Gold lake myth and the story of Greenwood's golden valley. They were on the *qui vive* for the marvelous, and were prepared to believe in, and search diligently for, some favored storehouse of nature, where the yellow metal could be scooped up by the shovelful.

The first mining in California was done with wooden bowls, the time-honored *batea* of the Mexicans. These were used in the mines near the mission of San Fernando, forty-five miles from Los Angeles, where mining was carried on, in a most crude and unprogressive way, for a number of years before Marshall's discovery at Coloma electrified the world. The first operations at Coloma were of the simplest kind. The "pan" was introduced by an old Georgia miner, and became the universal implement. It is still used in all branches of gold mining, either as an implement for washing, or as a receptacle for gold, amalgam or rich dirt, though, as an implement for general use, it had to retire the first season, in favor of the rocker. It is made of stiff sheet iron, with a flat bottom about one foot across, and with sides six inches high, slanting outward at an angle of forty-five degrees. Sheet iron is preferable to tin, as it is stronger and does not amalgamate with mercury. The process of "panning out" is apparently simple, yet much practice is required to render one skillful in even this rudi-

mentary form of mining. The pan is partly filled with dirt, and then immersed in water. The earthy portion of the dirt is quickly dissolved by the water, assisted by a gentle agitation of the pan, forming a mud, which is carried off by the water. The light sand flows out with the thin mud, while the lumps of tough clay and stones remain. The latter collect on top of the clay, and are carefully scraped together with the fingers and thrown out, or are expelled by shaking the pan. This process continues, the pan being gradually raised in the water, and its outer edge depressed, until all the earthy matter has been dissolved and swept away by the water, leaving the gold at the bottom. It requires much experience to learn the degree of shaking necessary to cause the dirt and stones to leave the pan, without losing any of the gold. In panning out, it frequently happens that a quantity of black sand, containing fine particles of gold, is obtained, which is so heavy that it can not be separated from the gold by washing. This black sand is the *bete noir* of the placer miner, and often makes impracticable the working of deposits of unquestioned richness.

The rocker, whose busy hum has been the first sound of industry in thousands of localities on the Pacific coast, made its appearance the first season, and before the close of 1849, became the universal implement of the miners. The rocker, or cradle, bears a close resemblance to the old-fashioned box cradle, resting on rockers, hence the two names by which it is known. The cradle box is generally about forty inches long, twenty inches wide, and four inches high, and stands with the upper end elevated about two feet higher than the other, so that the dirt and water will run off readily. A hopper, or riddle box stands on one end of the cradle box. This is twenty inches square and four inches high,

and has a sheet iron bottom, perforated with holes half an inch in diameter. The riddle is not fastened to the cradle, but can be removed at will. Under the riddle is an apron of cloth, or wood, fastened to the sides of the cradle and sloping down toward the upper end. Two cleats, called "riffles," about an inch wide and an inch high, are nailed across the bottom of the cradle, one in the middle and the other at the lower end. The miner shovels the riddle box full of dirt, and then sits down beside the machine. With one hand he rocks the cradle, and with the other dips water, in a ladle, from a pool or receptacle at his side, and gently pours it into the hopper. The water and agitation of the cradle gradually dissolve the dirt, which is carried down through the riffles, falling upon the apron, which carries it to the head of the cradle box, whence it runs down and out, leaving the gold, black sand and gravel behind the riffle bars. Before the close of 1849, an improvement upon this machine was introduced into some of the mines. It was somewhat similar in appearance and principle, and was popularly known as the "long tom." The cradle and the long tom have kept their place with the pan, as being better adapted to certain conditions of mining than their more extensive successors.

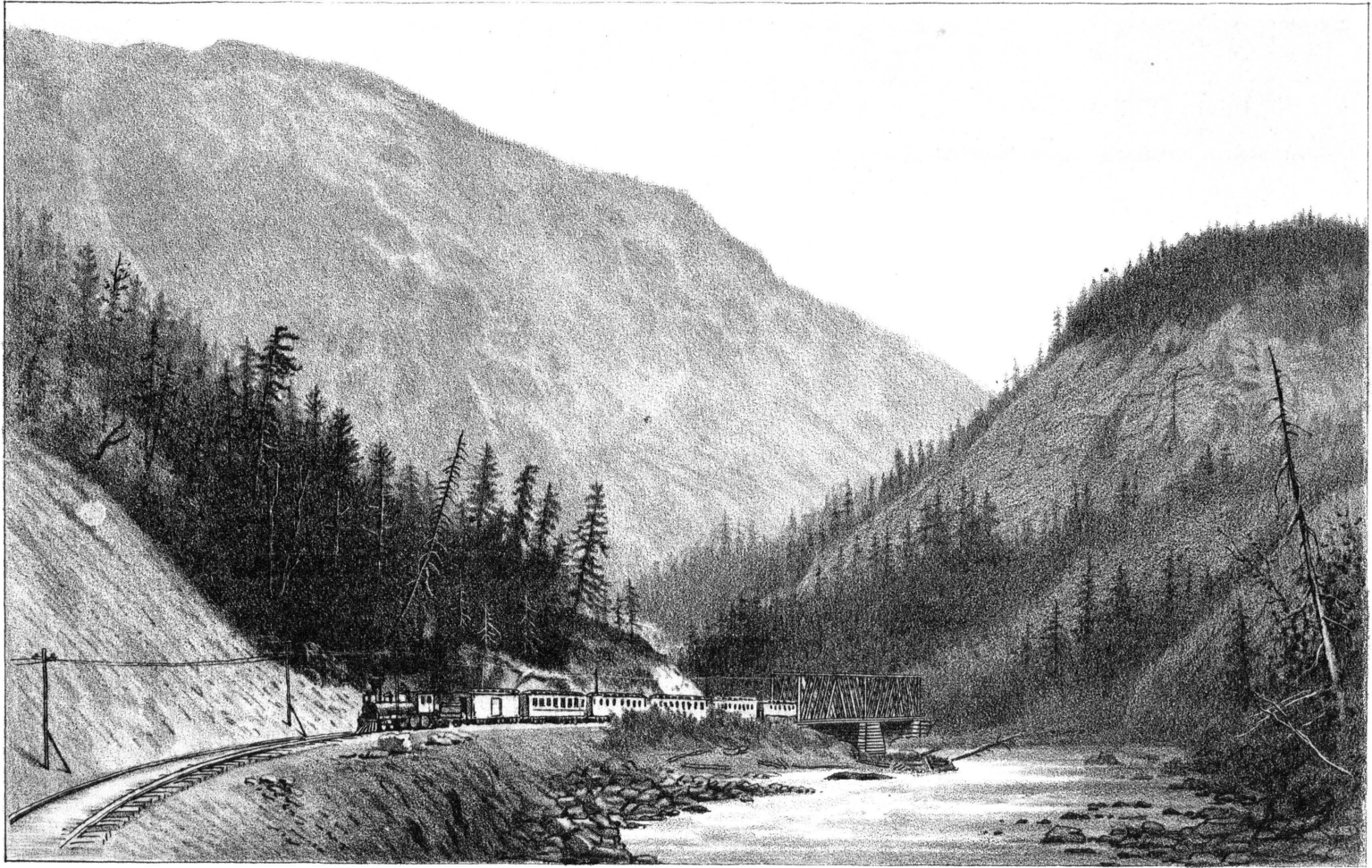
In 1850, sluice boxes were introduced, being the germ from which the long flumes and bed-rock tunnels of the present day have been developed. The sluice box is a long wooden trough, or series of troughs, set at a sufficient decline to cause water in them to run with a strong current. Across the bottom, at regular intervals, are nailed riffles, for catching the gold, and usually, quicksilver is placed back of the riffles, especially if the gold be fine dust, or "flour," for the purpose of catching and amalgamating the precious metal, which might otherwise be carried off by the current. Into

the head of the sluice a body of water several inches deep is turned from a ditch, and the miners, sometimes half a dozen of them, stand at intervals on either side and rapidly shovel in the auriferous dirt, which is quickly disintegrated by the water, and carried downward, the clay, sand, gravel and stones being carried along by the current, and the gold lodging behind the riffles by the action of gravity, or the seductive influence of the quicksilver. The sluice box was, for a long time, the great washing machine, and the most important contrivance used in placer mining. It may still be seen in every placer region, as it is the most available system where the conditions are not favorable for operations on a more extensive scale. It is the favorite method of the Chinamen, who work over the "tailings" of former operations, or the poorer ground abandoned by their white predecessors. Often, when the conditions are favorable, the sluice is extended several hundred, and even several thousand, feet, and with the aid of a derrick becomes a part of the apparatus of quite extensive mining operations. Such a system as this is necessary where the water and dirt at the point of using are on a level with, or below, the surface of the surrounding land. It thus becomes necessary to elevate the upper end of the sluice, or flume, in order to give sufficient force to the current; and this also requires that both the dirt and water be elevated. Such a mine is that illustrated on page 301. Large sluices are frequently paved with stone, which makes a more durable false bottom than wood, and catches fine gold better than the wooden riffle bars. Another important advantage they possess is the difficulty of "cleaning up," as the operation of removing the gold and amalgam after a "run," is called. This operates as a partial protection from the raids of midnight thieves, who have often found a rich prey in the more easily-cleaned wooden riffles. A watchman, with a trusty rifle, is also a good protection, and one which has been more or less resorted to since the sluice system first came into general use. The work of cleaning up a stone-bottom sluice is tedious and difficult, as well as the labor of again laying the false bottom, but the expense of wear and tear on the wooden riffles of a large flume, where a strong current carries down rocks of considerable size, is very great, equal in very large and long sluices to from ten to thirty dollars per day. This operates as an offset to the extra labor on a stone bottom. A large sluice generally has a descent of from twelve to fourteen inches to the box, of twelve feet in length. Ground sluicing, where the topography was favorable, was quite extensively resorted to in former years, though but little practiced at the present time. The conditions favorable are a steep descent, plenty of water, and much dirt of a quality too poor to warrant other methods. A ditch is cut, through which a large stream of water is passed. The banks are prized off so that the dirt falls into the stream and is carried away, being dissolved in its course and depositing its fine golden burden as it moves along. This is a cheap and expeditious way of working down a steep bank, and was the first method by which the hills, now rapidly crumbling before the power of the hydraulic giant, were worked to any extent.

None of the mining methods, as we see them to-day, were the product of one man's invention, but have been gradually evolved from the requirements and experiences of miners in every gold field on the Pacific coast. The highest form of development reached is the hydraulic system, which, with the necessary appliances, handled by half a dozen men, does the work of hundreds of miners by



HYDRAULIC MINING IN THE NORTHWEST.



BRITISH COLUMBIA—THE CANADIAN PACIFIC THROUGH KICKING HORSE PASS.

the simpler and less costly methods. Though this method is employed in placer ground, such as has been spoken of as being the secondary condition of gold, as found by miners, it is chiefly used in the "blue cement" leads, the channels of extinct rivers, about whose nature and probable formation a few words are required, to render the system easily understood, and its magnitude appreciated.

When the river bars and flats were worked out, the miners, in some instances, found that portions of the adjacent hills contained rich auriferous deposits, and began working them by ground and box sluicing. As they progressed, they developed well-defined channels, like the bed of an ancient river, the portion of alluvium near the bed-rock having a bluish tint and being so firmly packed together that it received the name of "blue cement." All through the mines in California, and in later years in Oregon and other portions of the Northwest, these blue cement leads were discovered, and have been extensively worked. At first, there was no satisfactory theory of the cause of this peculiarity advanced. The miners had found rich, and apparently exhaustless, diggings, and with that they were satisfied. These blue cement leads were discovered in many places where the present streams and canyons had cut across the ancient channels, often at right angles, and exposed a short section to the gaze of the tireless prospector. As new discoveries were made, and work progressed, it began to be observed that claims bore about the same relation to each other, so far as relative location is concerned, as did those along the courses of the present streams. It was also observed, as the workings exposed the bed-rock for long distances, that the lead had well-defined boundaries of "rim rock" on either side, and its course ran tortuously along in the usual man-

ner of a water course. The conclusion was gradually forced upon them that these were the channels of extinct rivers, which, with their tributary streams and ravines, once formed the drainage system of the country. No doubt that system resembled the present one in some respects. Its rivers were large, and flowed, in some places, in deep, narrow channels, with high and precipitous banks of rock, the grade descending steeply and the current running swiftly. In others the stream was broad and sluggish, sometimes expanding into little lakes. The exact course of these pre-glacial rivers—for they undoubtedly preceded the glacial epoch—is largely a matter of theory and speculation. The various channels have been opened in hundreds of places, but in most instances, have not been sufficiently laid bare to determine which are connected with others, and which are separate and distinct. The most extensive operations have been carried on in the counties of Sierra, Nevada and Placer, in California. A map of that region has been prepared, on which is marked, in blue, every cement lead that has been located. These are so numerous that it only requires a few strokes of the pen, made in the general direction indicated, to connect them, and thus complete an outline of a great river and several of its most important tributaries. This main stream apparently ran almost due south, parallel with the great Sacramento, and almost at right angles to the streams which now drain the mountains. It would, at the first glance, appear almost impossible that a large river should have crossed the canyons, hills and ravines, and, instead of flowing out of the mountains as quickly as possible, continue its course for more than a hundred miles directly through them, parallel to the summit ridge, and at an altitude about midway between the highest peaks and the adjacent valley; but

it must be remembered that the present topographical contour, the hills, canyons and ravines, have been formed since that great river retired from active business. The marvel is not that the ancient river flowed as it did, but that such a great change could be made in the surface of the country, and yet leave the channel of that pre-glacial stream so complete and well defined.

Geologists who have made a study of this subject, express the opinion that the main valleys were excavated by erosion, at a time subsequent to the tertiary period. This was probably the epoch in which the auriferous gravel, found in these ancient channels, was produced, by the degradation of the quartz veins and metamorphic schists, from the joint action of water and glaciers. The detritus, formed in this manner, was carried down by floods, and gradually filled, to overflowing, the channels of the streams with immense deposits of gravel. This process we now see being repeated in the present water courses of the same region, in which the floods are annually depositing great quantities of detritus, the debris of the hills which have been disintegrated and washed away by the powerful hydraulic machines of the miners. The technical name for this refuse is "tailings," but the indignant ranchers of the valley have dubbed it "slickin's," and the numerous actions they have maintained in court, to restrain the miners from permitting their tailings to escape into the streams, and thus bury, beneath their sterile mass the rich alluvium of the valley, are known as the "slickin's cases." The channels of the streams were completely filled by this gold-laden gravel, causing the water to seek new courses, resulting in the present system of drainage. Volcanic activity succeeded this flood of gravel, and great volumes of lava flowed down upon the hills, forming the great sheets of volcanic ma-

terial which now cover so much of the country.

Modern erosion, working upon this material, has carved out the present surface of the country, with its system of drainage. The water courses are all much lower than the previous ones, and wherever a stream cuts one of those ancient channels, the bottom of the old one is found far up on the side of the banks between which the present flows. This is one of the difficulties encountered in mining those ancient gravel deposits, as they lie far above the present level of flowing water, necessitating the bringing of water, in expensive ditches and flumes, from some point higher up in the mountains. From the masses of detritus which choked those old rivers, have, in part, been moulded the present hills and ridges. In many places the superimposed lava has been washed away, exposing the gravel to view. This, too, has suffered from erosion, until what was once a compact body of gravel of somewhat uniform depth, is now an uneven mass, forming ranges of hills hundreds of feet high, and separated by deep canyons and ravines. Where this process of denudation has been less marked, the lava still lies in great masses, covering the gravel channel, in some places, to a depth of several hundred feet. Many such places are being mined by drifting, or tunneling, a system known as "drift mining."

The material deposited in these ancient channels, is generally composed of rounded and water-worn masses of slate, quartz, granite, and all the rocks of the surrounding country, varying in size, from fine sand and pebbles to bowlders of many tons weight, accompanied by beds of extremely tenacious clay. In this conglomerate, lignite, or fossil wood, is frequently found, being little changed from its original condition, but blackened to the color of coal, and flattened

by great pressure. I picked up several beautiful specimens in the mines at Little York and You Bet, in Nevada county, California. One log, fifteen feet long and eighteen inches in diameter, similar, in appearance, to the tough and crooked manzanita, which now grows in thickets in that region, was shown to me, completely fossilized. Occasionally, a mass of this drift-wood is encountered, where it had evidently accumulated in an eddy and become imbedded in fine sand, making almost a continuous bed of lignite.

As the detritus which filled up these ancient channels was partly eroded from quartz ledges, the entire mass is auriferous. The upper portion, known as "top gravel," contains less gold than that nearer the bed-rock. It is generally of a yellow or reddish brown tint, due to the oxidation of iron. The richest deposits lie within a few feet of the bed-rock, and though following the general course of the stream, lie in streaks, whose courses vary with the capricious changes of the current in the channels where they were deposited, sometimes on one side of the channel, and sometimes on the other. It varies exceedingly in richness, according to the nature of the current, as regards velocity, eddies, obstructions, etc., exhibiting the same peculiarities found to exist along the streams of our modern drainage system. The bottom gravel is generally a very compact conglomerate, closely cemented together, and possessing a blue or gray tint, due to the more complete oxidation of the iron it contains. This is the famous "blue cement," of which so much has been said. It is often so compact that the force of blasting powder is required to break it up. Water will not disintegrate it, and in many mines, quartz mills are employed to crush it to powder. A few months' exposure to the atmosphere produces disintegration, as the iron py-

rites, which holds it together, becomes decomposed. Great masses of it are, in some localities, left exposed to the elements for a year, to secure the benefits of disintegration. Near Little York, where the most stubborn of this cement is found, there were, at one time, sixteen of these mills, having one hundred and thirty-six stamps. The majority of them have been abandoned and have fallen to decay, and cement crushing is but little resorted to. Much of this is being worked by the disintegration process referred to, being run through the sluices once a year for several years, each time yielding good pay for the labor expended.

Now that the nature and cause of these blue cement leads has been explained, the process of mining them by hydraulic power can be easily understood. Hydraulic mining may be briefly defined as the washing down of the auriferous hills of this gravel range, by directing a powerful stream of water against the bank, the dirt and rocks being carried by the water through a deep cut, a bed-rock tunnel, or a system of flumes, or sluices—often all three combined—the gold being caught by the riffles and quick-silver, the refuse dirt and rocks, denominated "tailings," being finally discharged from the end, or tail, of the flume, into some canyon or ravine, whence the lighter portions soon find their way into the streams, and are carried down by the floods, and deposited in the form of "slickin's," along the course of the rivers, often to the great detriment of the fertile lowlands lying along the streams. I have seen wide wastes of slimy clay and useless willows covering, and rendering sterile, thousands of acres of lowlands in the Sacramento valley, which were once the most productive and valuable in the state. Meadow lands, orchards, vineyards, gardens and grain fields have succumbed to this migratory

wave of sterile clay, till land that was once valued at hundreds of thousands of dollars, is abandoned to willows, mosquitoes and cotton-tail rabbits. Rivers whose banks were once twenty feet above the water, are now twenty feet above their former banks, and are confined to their courses by huge dykes, or levees, which have cost millions of dollars in their construction. The bays of San Francisco, San Pedro and Suisun, notably the latter, have shallowed very much in the past twenty years, owing to the settling of the detritus brought down from the mines by the Sacramento river and its tributaries. This gives a faint idea of the enormous, almost incalculable, quantity of gravel, sand and clay which has been washed down from these hills and deposited in the canyons and ravines of the mountains, and along the beds and sides of the streams, even to the very entrance of the Golden Gate.

The germ of hydraulic mining was a rude contrivance, used on Buckeye hill, near Nevada City, by a miner named A. Chabot, in 1852. He conducted water from the bank into his claim, through a wooden box, strengthened with iron clamps, to withstand a pressure of sixty feet head. To the end of this, he attached about forty feet of canvas hose, directing the stream against the loose dirt after it was picked down from the bank. There was no nozzle attached to the hose, and it was a whole year before the idea occurred to anyone to direct the stream against the bank. Finally, in 1853, E. E. Matteson, working on American hill, in the same vicinity, attached a nozzle to his hose and brought the stream to bear upon the bank. The result was astonishing, and it was not long before this system was introduced into every claim in that region so situated as to have a fall for running off the tailings.

Though the principle has remained, great improvements in appliances have

been made. The canvas hose has been supplanted by huge pipes of boiler iron, fifteen to twenty inches in diameter, and the little stream from a half-inch nozzle has developed into an almost resistless torrent, issuing from an orifice seven to ten inches in diameter. These huge iron pipes conduct the water into the claims, from the hill above, sometimes from a vertical height of four hundred feet, giving a terrific pressure where the water is discharged from the end. These iron pipes are ribbed, and made of great strength, yet they often burst at the joints, and from little holes not larger than pin heads, little fountains may be seen shooting high into the air, as one walks beside them. Instead of the nozzle and hose formerly used, which could not stand the high pressure now required, machines, known as "monitors," or "little giants," are employed, similar to the one depicted in the engraving on page 311. The machine is double-jointed at the base, and may be turned from side to side, depressed or elevated, at will by the man operating it, so that the water may readily be directed at any portion of the bank desired. The force of the stream, as it issues from the orifice of this machine, impelled by the downward pressure of a column of water from two hundred to four hundred feet high, and compressed from an eighteen-inch pipe to a nine-inch orifice, is not easily described or realized. The torrent of water rushes forth with a roar, and hurls itself, in an almost solid mass, against the bank, which crumbles and melts away as though it were but a heap of snow. The eye, in vain, tries to follow some speck in the rushing torrent, to obtain some idea of its velocity. Standing beside one of the largest of these machines, I picked up a flat stone of fully fifty pounds weight and carefully dropped it upon the water, just in front of the machine. It shot out, with the speed of a

bullet, a hundred feet before it fell to the ground. Even then, it did not fall through the stream, but rolled off the rounded side, as if slipping from a greasy log. Should a man seat himself astride the rushing column, it would carry him fully a hundred feet before his weight would have any effect upon it. What would become of him can only be conjectured, as no one has ever attempted the feat, but the probabilities are that he would become sadly disjointed and "bruk up." A discharge of one thousand inches of water—miner's measurement—is not unusual. This is equivalent to fifteen hundred cubic feet per minute, nearly a million cubic feet, or seven million gollons, per day of ten hours. The average quantity of dirt washed by one inch of water in twenty-four hours, has been estimated at seven cubic yards, varying with the nature of the ground being worked. At that rate, one thousand inches would excavate nearly three thousand cubic yards of earth in ten hours. How the water which performs these gigantic labors is obtained, will be described in a subsequent article, entitled "Mining Ditches and Water Rights."

One of the most expensive and essential features of hydraulic mining, as mines are ordinarily situated, is a bed-rock tunnel, to permit the debris to escape. Occasionally, a mine is so situated that the tailings can be run through a flume and open cut; but usually, the claim is enclosed by hills, which must be tunneled to give outlet with sufficient fall to cause the water to flow with force enough to carry away its burden of dirt and boulders. The tunnel is started from some convenient ravine, at a point sufficiently below the lowest level of the body of gravel to be worked, to give ample fall from the most remote portion of the claim. Some of these tunnels are necessarily very long, and the expense

of constructing them very great. A tunnel at North Bloomfield, California, runs a distance of eight thousand feet through bed-rock, costing \$480,000.00, and requiring two years to construct. The company operating this claim own sixteen hundred acres of ground, and during a period of eight years, expended \$2,000,000.00 in preparing for work. It is this enormous outlay of capital required, which has prevented the opening of hundreds of claims of undeniable richness. Sluice boxes are laid in the tunnels, generally paved with stone, and are prepared for catching the gold as it passes through with the dirt, water and rocks, the same as has been described. Often, long flumes extend beyond the exit of the tunnel, giving a longer stretch of sluice for the tailings to pass through. There is a system of side sluices, called "under currents," by which the bottom inch of water and dirt is drawn off from the end of the flume, and passed through a series of special sluices, the more thoroughly to sift from it the precious charge it holds. In some places, tail sluices are resorted to, being a series of sluice boxes laid in the bottom of a ravine or creek, into which tailings are discharged from a mine. Water is turned upon these tailings and they are run through the sluices, thus extracting from them another contribution of gold. I have seen one of these tail sluices five thousand feet in length. As it is generally supposed that about one third of the gold escapes in the tailings, the chances for profit in this comparatively inexpensive contrivance are very great, as the more sluggish current in these sluices permits the riffles and quick-silver to catch the fine gold, which, aided by the stronger current, ran the gauntlet of traps set for it in the tunnel and flume.

In places where the conditions are not favorable for hydraulic mining, such as when the gravel range is covered with a

field of lava, as before described, where the top gravel is not rich enough to pay the expense of working, mines are opened by drifting, sometimes by running a tunnel on the channel from the side of the hill, and sometimes by sinking a shaft upon the lead, from the bottom of which tunnels and drifts are run. In this way the lower, or rich, stratum is removed, and upon being brought to the surface, is worked by being run through a system of sluices. Drift mining is resorted to in a great many localities. One of the most extensive mines of this character has a shaft four hundred and sixty feet deep, from which run two tunnels and nine lateral drifts.

The company has two engines, one for hoisting the dirt to the surface, and one for pumping water out of the claim and forcing air down to the men at work. One hundred men are employed about the mine. Great care is taken, in this class of mining, to scrape the bed-rock and crevices perfectly clean, as there the richest particles are found. In a hydraulic mine, this object is accomplished by "piping the bed-rock," as the local dialect has it, which is simply bringing the hydraulic machine to bear upon the bed-rock until it is as clean and bare as the cleanest kitchen floor ever scoured by a housewife.

H. L. WELLS.

BY LOVELY CHATTAROY.*

When sunny Summer-time was young,
In all its bless'd employ,
I rode along the pleasant banks
Of lovely Chattaroy.

The sweet birds piped their gleeful notes,
From woodlands' leafy bowers;
The purling river laughed and sang,
Between its banks of flowers;
The bright sky wore a golden smile,
Unvexed by cloud's alloy,
When forth I rode, in joyous mood,
By lovely Chattaroy.

Far down the mountain's fastness came
The eagle's piercing scream,
And sheen and shade a patchwork lay
Upon that gliding stream;
The south wind came with gentle sigh,
Like some fair maiden coy,
And kissed the fragrant flow'rs that grew
By lovely Chattaroy.

I dreamed of all that time would bring
To that dear stream so fair,
Of moil and toil and roaring trains,
And smoke-polluted air,

Of factories' clash and mill-wheels' fall,
That sylvan peace destroy,
And prayed a respite yet might come
To lovely Chattaroy.

The day had waned, the sun's last kiss
On that rare landscape fell;
Still on I rode, beside the stream
I long shall love full well.
Far down a vista greenly fair,
A bare-foot girl and boy
Rehearsed again love's tender tale,
By lovely Chattaroy.

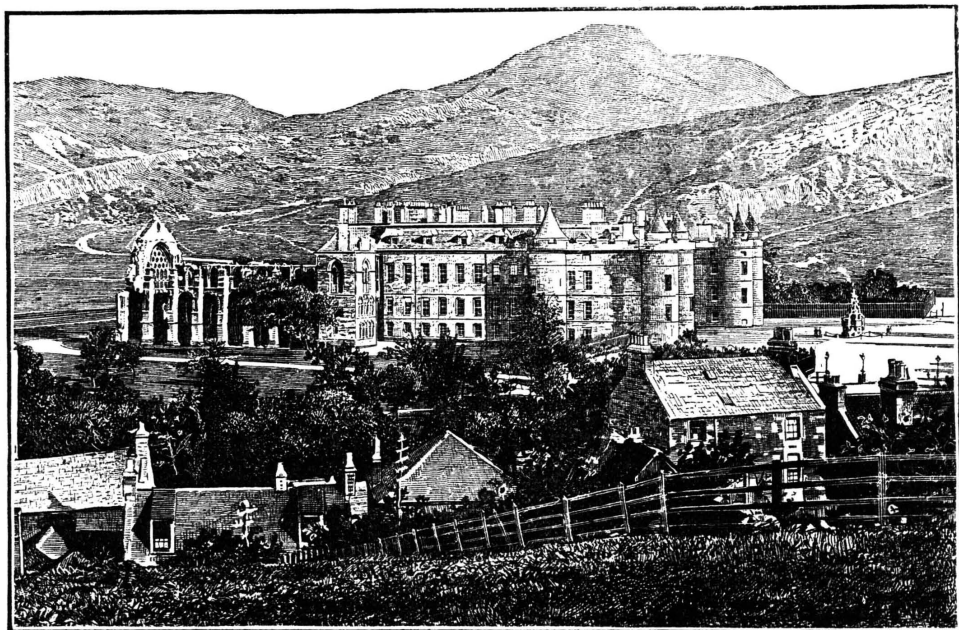
When other days shall come and go,
When other swains shall tell
That same sweet tale that Adam told,
E're Eve, our mother, fell,
Still green in memory's deathless urn,
Will live that girl and boy,
That sheen and shade, that eagle's scream,
By lovely Chattaroy.

With each recurring summer-time,
In dreams, I still enjoy
The ghost of that immortal day
By lovely Chattaroy.

—ETOILE.

* Chattaroy is a corruption of the beautiful Indian name *Chattarawaha*. This, for some incomprehensible reason, has been further corrupted into "Big Sandy with a Twig Fork." Not satisfied, the people are busily engaged in denuding its beautiful shores.

MARY QUEEN OF SCOTS AND ROBERT BURNS.



HOLYROOD PALACE, HOME OF MARY QUEEN OF SCOTS.

Now blooms the lily by the bank,
The primrose down the brae,
The hawthorn's budding in the glen,
And milk-white is the lea ;
The meanest hind in fair Scotland
May rove their sweets among ;
But I, the queen of a' Scotland,
Maun lie in prison strong.

AS in Paris and at Versailles we continually-ascending scale, when, later, had followed Marie Antoinette we followed her career in Scotland, her through all the changes of her native land; as in Linlithgon castle, the eventful life and tragic death, so, at the abode of her infancy, she stood before Fontainebleau, was the image of that no us in her artless childhood; as in the less lovely and unfortunate Mary Stuart ever present with us, when in the historic castle of Edinboro, we grieved in anticipation of her coming fate, while the promise of her young maiden life she looking upon that room in which her son shone as dauphiness of France. Our and heir, James VI., of Scotland, and intensity of interest was, however, on a James I., of England, was born, and

thought of that son's unfeeling indifference in manhood, to the doom of the mother. In Holyrood palace and chapel, the home and court of her youthful widowhood, we were not disposed to canvass the character of the unhappy queen, or weigh her virtues and her errors too nicely in the balance, for "the genius of the place forbids it." At Sterling castle, as we paced its ramparts, overlooking the field of Bannockburn, and were told of her sentineled round over the same walk, we contrasted the scenes of her happy childhood within its walls with the slow, sad hours of her captivity; and as our boatman rowed us across Lochleven, a mile from Kinross, to that lonely island and impregnable castle, from which, in the same way as we approached it, she had made her escape after eleven months of lasting imprisonment, again to Linlithgon, only to be reimprisoned and beheaded at Fotheringay, to the lasting reproach of Elizabeth, of England, we lived, for the time, in the past, oblivious of the present, members, in imagination, of that faithful band of Maries who followed her to that last captivity, the only relief from which was the headsman's axe.

In visiting Holyrood palace, a literary writer well says: "Here we must look upon her only as that suffering, interesting woman, whose personal charms and tragic death have drawn eloquence from the pens of countless historians, and whose beautiful face has called forth eulogiums innumerable from Europe's greatest poets. Here Mary first reposed after her arrival from the gay land of France, which she so loved and so regretted. Here, in the royal chapel of the abbey, she was married to Lord Darnley; here Riggio was murdered, almost at her feet; here was the scene of the fatal nuptials with Bothwell, his murderer; here she laid down her troubled head on the eventful night before

she was committed to the castle of Lochleven; in these halls, at many a royal entertainment, she enchanted all that beheld her, by the loveliness of her person and the winning grace of her manner; here was she attended in her private apartments by her four Maries, devoted and faithful till death; and here, too, born in trying times, she had to endure those memorable and distressing interviews with the fiery and uncompromising leaders of the Scottish reformation, led by John Knox." Such cruelty and coarseness fill us with indignation, but as Carlyle says, in his *Heroes and Hero Worship*, "It was, unfortunately, not possible to be polite with the queen of Scotland, unless one proved untrue to the nation and the cause of Scotland." "Who are you," said the hapless queen, not without sharpness, to Knox, "that presume to school the nobles and sovereigns of this realm?" "Madam, a subject, born within the same," answered Knox, and "Better that women weep," said Morton, "than that bearded men be forced to weep." Alas for Mary, that the land of her birth "had been made a hunting field for the intriguing, ambitious Guises." —

His bonnet stood ance fu' fair on his brow,
His auld ane look'd better than mony ane's new;
But now he lets 't wear ony way it will hing,
And casts himsell dowie upon the corn-bing.

O, were we young as we ance hae been,
We sud hae been galloping down on yon green,
And linking it ower the lily-white lea!
And werena my heart light, I wad dee.

—*Lady Grizzle Baillie's Balad.*

Burns' songs have been compared to warblings, not of the voice only, but of the whole mind, and reckoned by competent critics as by far the best that Britain has yet produced. It is not the tenderness alone with which he sings that so moves us, but his indisputable sincerity, and the fidelity with which he depicts scenes drawn from his own sight

and experience—scenes that kindle noble emotions and produce definite resolves. "Literature will take care of itself," answered Mr. Pitt, when applied to for some help for Burns. "Yes," adds Mr. Southey, "it will take care of itself, and of you, too, if you do not look to it."

Immediately after dinner, on our arrival at Ayr, the immortal land of Burns, we were driven about two miles south from our hotel to Burns' cottage, along

In the ben is an original painting of the poet, taken when he was twenty years old, which long since hung over the entrance door. Underneath it is this inscription—

ROBERT BURNS,

The Ayrshire poet, was born under this roof,
the 25th Jan. A. D. 1759—Died A.
D., 1796, aged 37½ years.

Here, also, is the spinning wheel of Highland Mrry. In the public refreshment room adjoining, are many inter-



COTTAGE WHERE ROBERT BURNS WAS BORN.

the very track of Tam o'Shanter, past the "Mickle Stane," still projecting from a cottager's garden; by "the thorn aboon the well," where "Mingo's mither hanged hersel," and on to the banks where "before him Doon pours all his floods." The cottage stands by the roadside, about a quarter of a mile from Kirk Alloway, and the "Brig o' Doon." It is in very much the same condition it was when Burns, as a child, occupied it. The same old stone floor, fire place, eight-day clock and small round stand.

esting reminiscences of Burns, but none which pleased me more than the original manuscript of "Tam o' Shanter," and song "Craigieburn Wood," commencing

Sweet fa's the eve on Cragie-burn,
And blithe awakes the 'morrow;
But a' the pride o' spring's return,
Can yield me nocht but sorrow.

The country about Kirk Alloway and the cottage looks very much as it must have looked in Burns' time, with the exception of the new church. The low, thatched, whitewashed stone cottages are quite as

primitive. The house consists of two rooms, "the but and the ben" (bane) *ie* a kitchen and spence, or keeping room, with a building now attached, used as a public house or restaurant, containing many curios connected with the life of the poet. The walls in the "best room" of the cottage are written over with names, but not in so extraordinary and profuse a manner as those of Shakespeare's, at Stratford-on-Avon. One table, however, is so thoroughly cut over with initials, top, sides and legs, as to leave scarce space for another.

The poet was born in what is now the kitchen, in a recess bed, or bunk, set into the wall, very usual in Scottish houses, and pointed out to visitors by the present occupants. We were received with favor, as we find Americans universally are abroad, our hostess remarking that she was always glad to see any of our countrywomen, who express so much interest, and who are always her best customers. Propitiated by this diplomatic flattery, we felt bound, of course, for the honor of our country, to increase our fee. As we left the house, our excitement increased, for we knew that

Kirk Alloway was drawing nigh,
Where ghaists and howlets nightly cry.

We reached it through the kirk yard, where the headstone of Burns' father is the first to meet the eye, and near it is the grave of "Souter Johnny." The inscription on the former was written by Burns, and merits recording here for its filial tenderness.

O, ye! whose cheek the tear of pity stains,
Draw near with pious rev'rence and attend.
Here lies the loving husband's dear remains,
The teacher, father and the generous friend;
The pitying heart that felt for human woe;
The dauntless heart that feared no human
pride;
The friend of man, to vice alone a foe,
For e'en his failings leaned to virtue's side.

One almost questions why Burns, with his ready and fertile imagination, and poetic facility, should have culled from Goldsmith in the concluding line of this epitaph, apt as the quotation is. Our self-appointed guide, who conducted us through the church yard, and beguiled me to loiter with his strong Scotch accent, spoke of a new church recently built in the neighborhood, and of the request that had been made for the old Kirk Alloway bell. With a wan smile, partially irradiating his rugged features, he exultingly exclaimed: "But they'll never tak it down, leddy, never; they'll gang a lang bittie roun afore they'll get anither like it!"

We climbed, by means of an iron grating, to the window of the church, from which we supposed Tam, on his "grey mare, Meg," might have taken his view of the "unsoncie" dancing party, and looked in on the other side at

The winnock bunke in the east,
Where sat Auld Nick in shape of beast.

From there we passed to "the very key-stane of the brig," and so infused were we with the spirit of that neck and heels race of Tam with the witches, as he "skelpit on through dub and mire," that we ourselves

Whiles, glowered round wi' prudent cares,
Lest bogles catch us unawares—"

Now do thy speedy utmost, Meg,
And win the key-stane of the brig;
There at them thou thy tail may toss;
A running stream they dare na cross.
But ere the key-stane she could make
The fient a tail she had to shake—
Ae spring brought off her master, hale,
But left behind her ain grey tail.

On retracing our steps we looked with deep interest, in Burns' monument, upon the bible and testament given by the poet to his Highland Mary, at their last parting at Montgomery castle, and also at the pair of drinking glasses presented by Burns to his favorite, Clarinda. Of

Clarinda, and her association with these glasses, Howitt says: "Clarinda lived to a great age as a Mrs. Maclehose, and died but a few years ago. Mrs. Howitt and myself were once introduced to her by our kind friend, Mr. Robert Chambers, at her house, near the Calton hill, Edinboro, and a characteristic scene took place. The old lady, evidently charmed with our admiration of Burns, and warmed up by talking of past days, drink out of Burns' glasses, which stood ready on the table, gave a look as if sacrilege were going to be committed, took up the glasses without a word, replaced them in the cupboard, locking them up, and brought us three ordinary wine glasses to take our wine out of. It was in vain for Mrs. Maclehose to remonstrate, the old and self-willed servant went away without deigning a reply, with the key in her pocket." While in



"BUT LEFT BEHIND HER AIN GREY TAIL."

declared that we should drink out of the pair of glasses which Burns had presented to her in the days of their acquaintance, and with which he sent the verses beginning

Clarinda, mistress of my soul—

She brought these sacred relics out of the cupboard, and rang for the servant to bring in wine. An aged woman appeared, who, on hearing that we were to

Ayr we called upon the only surviving relative of Burns in the town, Miss Riggs, a niece, who has died within a few months. We could not see her as she was then very old and ill in bed, but her attendant, "warmed," possibly, toward us, by seeing our enthusiasm for all associations with the beloved poet, absented herself for a few moments, and returned with the regrets of Miss Riggs, but presenting from her a card with a

few verses, which I still hold among my treasured possessions.

We spent a few days at Ayr, and then taking carriage and driver well acquainted with the country, we visited all the various residences of Burns, between Ayr and Mauchline, as Wm. Howitt had done before us in 1845, and which he so pleasantly relates in his *Haunts and Homes of British Poets*, that I shall be occasionally led to draw from his added sources of information. Passing between the "Twa Brigs," the old and the new, and skirting "the banks and braes o' bonnie Doon," we left the old mill to the right, "Where Willie brew'd a peck o' maut," and to the southeast the farm of Mt. Oliphant, which had belonged to Burns' father, and where he had himself lived from his sixth to his twelfth year. We did not alight here, as we were told there was no other thing of especial interest connected with it; but from there the interest deepens, and we reach Lochlea, near Tarbolton, where his father died after a life of poverty and struggle, and where Burns lived till he was twenty-four. As a residence it possesses few, if any, picturesque features, but offers a claim to our notice, as here he wrote "John Barleycorn," "Corn Riggs are Bonnie," and "Winter—a Dirge." Just below Tarbolton lies Montgomery castle, beautifully situated amid woods and groves, on the banks of the Faile. We drove up in front of the house and asked permission to visit the tree called "Mary's Thorn Tree," the scene of the parting between the lovers, and were civilly allowed to proceed, although told nothing but the roots remained. The tree had been greatly cut away by visitors, and had finally fallen from old age. We stood by the spot, now enclosed, and thought of that "parting which was fu' tender." The poem of *Highland Mary*, exquisite as it is, has a new meaning, a more melting sadness, as one recalls it

"'neath the gay, green birk" and "the hawthorn's blossoms" of the beautiful place.

Ye banks and braes and streams around
The castle o' Montgomery,
Green be your woods and fair your flowers,
Your waters never drumlie;
There Simmer first unfauld your robes,
And there the langest tarry,
For there I took the last farewell
O' my sweet Highland Mary.

Here, near the house, Burns was accustomed to meet Mary Campbell, a dairy-maid of the place. Here he fell in love with her, and here he finally took leave of her. She was going to the Western Highlands to see her friends before she married Robert Burns, but she died on the way back, and they never met again.

Ayr, gurgling kissed the pebbled shore,
O'erhung with wild woods, thick'ning, green,
The fragrant birch, and hawthorn hoar,
Twin'd am'rous round the raptur'd scene.

Burns' last residence in Ayrshire was at Mossiel, close to the village of Mauchline. We were received here in a most friendly manner, by the young farmer occupant, who, with a sturdy independence worthy of Burns himself, refused to accept any remuneration. He showed us the manuscript verses of "The Braes o' Ballochmyle," or that "Lass o' Ballochmyle," as he called it, and as it perhaps originally stood, and to our great delight, read the lines to us in the native accent. A rare treat! Burns' words in his own handwriting, listened to in his own home, in the language he so loved, and the closing lines found an echo in our hearts—a refrain which still keeps singing on—

But here, alas! for me nae mair
Shall birdie charm, or floweret smile;
Fareweel the bonnie banks of Ayr,
Fareweel, fareweel, sweet Ballochmyle.

The young man offered us every attention, gathering flowers for us from the garden, which yet, although pressed

and dried, still preserve their colors, and finally led us into the two fields, from one of which the poet turned up the field mouse, "Wee, sleekit, cow'rin, tim'rous beastie," and in the other, composed the charming song, "To a Mountain Daisy,"

Wee, modest, crimson-tipped flower.

At Mossgiel, "The Cotter's Saturday Night" was also written. The house is much as it was in Burns' life-time, with "a but and ben," with the buildings behind forming two wings, just as he afterward built his house at Ellisland. At Mauchline, many of the inhabitants, seeing our enthusiasm and admiration for their beloved farmer-poet, ran out of their cottages to meet and welcome us, though we had no great name to serve as an introduction, and accosted us at the corners of the streets, ready and eager to volunteer any information. One old woman shuffled on before us to point out a haunt of the poet's, which had this inscription over the door, and which she repeated with much delight:

This is the house, tho' built anew,
Where Burns came weary frae the plough,
To hae a crack wi' Johnny Doo,
On nights ateen;
And whiles to taste his mountain dew,
Wi' Bonnie Jean.

Behind this house, she pointed out that of Jean Armour's father, with the window of her room in it. We were told not to fail to see the house where the "Jolly Beggars" met, now a posting establishment, nor the kirk-yard, the scene of "The Holy Fair." Another pleasant, sensible young woman led us unceremoniously through the lower part of a shop, to a room above, in which, as she said, "the young couple took up housen," and where was given us a bit of the identical bedstead belonging to them, which still stands in its customary recess, evidently cherished by the old Scotch woman occupant as a money-

making relic. The young woman, while introducing us to different localities, repeated, with much taste of expression, snatches from his poems, and finally directed a little barefoot lassie to conduct us down a lane to a window of the former law office of Justice Hamilton, a warm friend and neighbor of Burns', in which room he and Jean Armour were married.

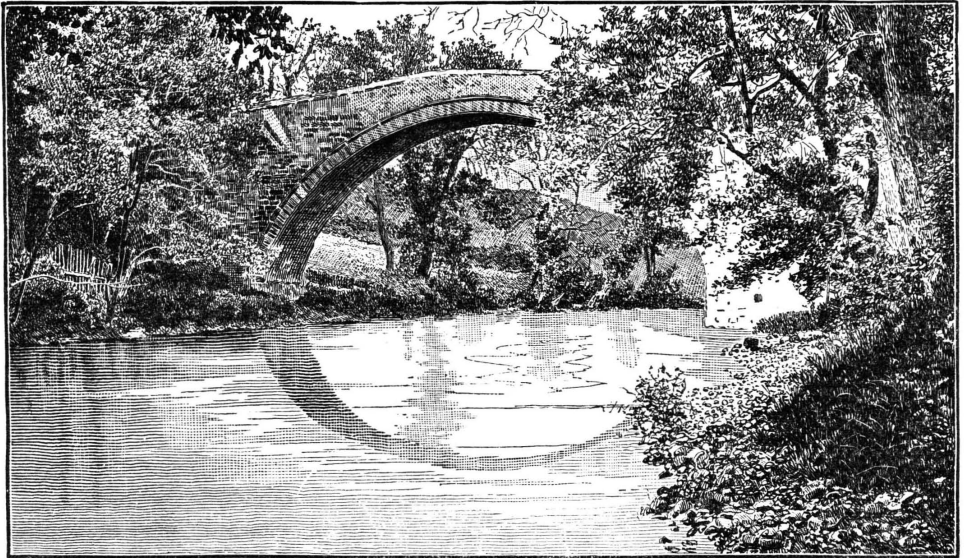
At Mauchline, dismissing our carriage and communicative driver, we took train for Dumfries, intending to pass the night there, in order to drive to Ellisland next morning, some seven or eight miles distant, the home of his more prosperous days. The river Nith courses along a portion of the farm, and the house is commonplace enough, but it was their own, and acquired a dignity from the life of honest industry upon which Burns entered there, with a proper care for "those moving things ca'ad wife and weans," renouncing the allurements of his Edinboro life, with its fame and pleasure, or, perhaps, disgusted and disappointed that it had renounced him. It is related that the home was taken possession of with the accustomed rites. Burns and wife, from a temporary home of his, half a mile away, walked arm-in-arm to the new one, preceded by a peasant girl carrying the family bible and a bowl of salt. Here they were happy for a year or so, but unfortunately the farm did not pay, and obliged to sell it, Burns committed the lamentable error of removing, as exciseman, to Dumfries. Why was no helping hand then extended to save him, in acknowledgement of his mental gifts, from this perversion of his inclinations and degradation of his faculties? A Burns! The most gifted soul of the eighteenth century! "to chronicle small beer!" or as Carlyle, in his vigorous way, puts it, "Alas, that this Ayrshire peasant, a piece of the right Saxon stuff,

strong as the Hasyrock rooted in the depths of the world; rock, yet with wells of living softness in it; that this wild, impetuous whirlwind of passion and faculty, with such heavenly melody dwelling in the heart of it, should exhibit itself in the capture of smuggling schooners in the Solway Frith, and in keeping silence over so much, where no good speech, but only inarticulate rage, was possible; that to him! his official superiors should say and write, 'You are to work, not think. Of your thinking

Thou lingering star, with less'ning ray,
Thou lov'st to greet the early morn,
Again thou usher'st in the day
My Mary from my soul was torn.

That sacred hour, can I forget,
Can I forget the hallowed grove,
Where by the winding Ayr we met,
To live one day of parting love!

On the farm at Ellisland, down the lane from the house, over which we reverently trod, along the banks of the Nith, and which has so often been trodden by hosts of admiring visitors, with a sod



THE BRIG O' DOON, WHERE TAM O' SHANTER ESCAPED THE WITCHES.

faculty, the greatest in the land, we have no need; you are to gauge beer; for that only you are wanted!' ”

On the window of his bed room at Ellisland is the quotation from Pope, “An honest man is the noblest work of God.” Here we were shown the barn yard, where, on the third anniversary of Mary Campbell's death, he remained all night in an agony of grief, striding up and down, till his feelings found vent in that pathetic ode, “To Mary, in Heaven:”

dyke for a desk, he composed and committed to paper the poem of “Tam o' Shanter,” written in one day; “Since Bruce fought Bannockburn, the best day's work done in Scotland,” says Alexander Smith. The family gave us an account of it, substantially the same as Howitt narrates upon his visit to the locality. We were told that when Carlyle visited the farm only a few years before us, he would place his hand on certain spots and exclaim with much feeling,

“Perhaps Burns’ hand has many a time touched this very place.” Mr. Howitt also declares that when Professor Wilson (Christopher North) was there, “He rolled on the bank, saying, ‘It is worth while trying to catch any remains of genius and humor Burns may have left here.’” We did not roll, but we felt inclined to kneel in grateful memory of the author of “The Cotter’s Saturday Night.” Howitt continues: “It was one of Burns’ delights to range along these steep banks, and it was along them, between the house and the fence, at the bottom of the field down the river, that he paced to and fro as he composed “Tam o’ Shanter.” Mrs. Burns relates that observing Robert walking with long, swinging strides, and apparently muttering as he went, she let him alone for some time. At length she took the children with her and went forth to meet him. He seemed not to observe her, but continued his walk. “On this,” said she, “I stepped aside with the bairns among the broom, and past us he came, his brow flushed and his eyes shining. He was reciting the lines commencing ‘Now Tam, a’ Tam, had thae been queans,’ etc.” “Agonized with an ungovernable access of joy,” graphically adds another writer. Three miles from Ellisland, on our return from Dumfries, by a slight detour we alighted at the ruins of the Abbey of Lincluden, a favorite resort of Burns for composing, and possessing a witchery with its clumps of magnificent beech, fir and alder, and its high mound covered with larches, overlooking the Nith, which he, of all men, could least resist, as the following lines testify—

Ye holy walls that still sublime
Resist the crumbling touch of time,
How strongly still your form displays
The piety of ancient days.
E’en now, as lost in thought profound,
I view the solemn scene around,

And pensive gaze with wistful eyes,
The past returns, the present flies,
And hark! What more than mortal sound
Of music breathes the pile around?
’Tis the soft chanted choral song,
Whose tone the echoing aisles prolong,
Till thence returned, they softly stray
O’er Cluden’s wave with fond delay;
Now on the rising gale swell high,
And now in fainting murmurs die;
The boatmen on Nith’s gentle stream,
That glistens in the pale moon’s beams,
Suspend their dashing oars to hear
The holy anthem loud and clear—
Roused by the sound, I start and see
The ruin’d, sad reality.

The inspiration of the place and the exactitude of the description, must plead my excuse for the length of the quotation. Would that I could leave Burns amid scenes so soothing and so congenial, so devoid of “carking care,” and that his iron destiny need not have carried him further, but I must hasten on to the melancholy end.

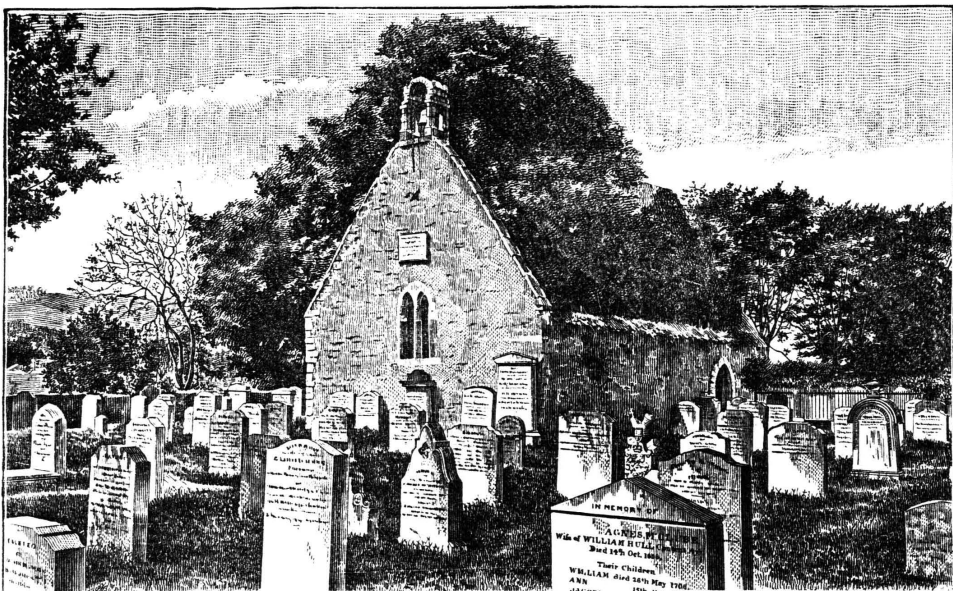
At Dumfries, our first visit was paid to the house in which he died, at the early age of thirty-seven, and in which his wife survived him for thirty-eight years. We were conducted to a room up stairs, in which the poet breathed his last, and our attention was directed to a portrait over the mantel, which the obliging, intelligent school master, who now occupies the house, told us was considered a most excellent likeness. Our steps next turned, as was fitting, to the corner of the church-yard where he was first interred, and then to the mausoleum, whither the remains were transferred. It is, in form, like a Grecian temple, and within, the genius Coila, finding her favorite son at the plow, is in the act of throwing her mantle over him. Here repose, also, his wife and three sons. I greatly prefer, as more simple and life-like, the marble statue of him in one of the city squares, which represents him standing with one foot on his dog, with his cap and pipe beside

him, and a bunch of wild daisies in his hand. The pedestal is inscribed, on three sides, with selections from his poems, and the front records that "the monument was erected by his grateful fellow citizens." I never looked at these many costly structures without thinking of the long and bitter struggle with adversity, and the discouragement from lack of appreciation and sympathy, of the one whose loss they deplore; and wonder, often, while reading those songs

preserved, in what is yet called Burns' corner, by the fireside, his chair, railed in from profane touch or desecration. On the window of the bed-room of the inn, written by Burns, in the familiar handwriting, are these lines of the song:

Gin a body meet a body
Comin' through the grain,
Gin a body kiss a body,
The thing's a body's ain.

And yet another, for almost every place in which he lived, or to which he



AULD ALLOWAY'S HAUNTED KIRK.

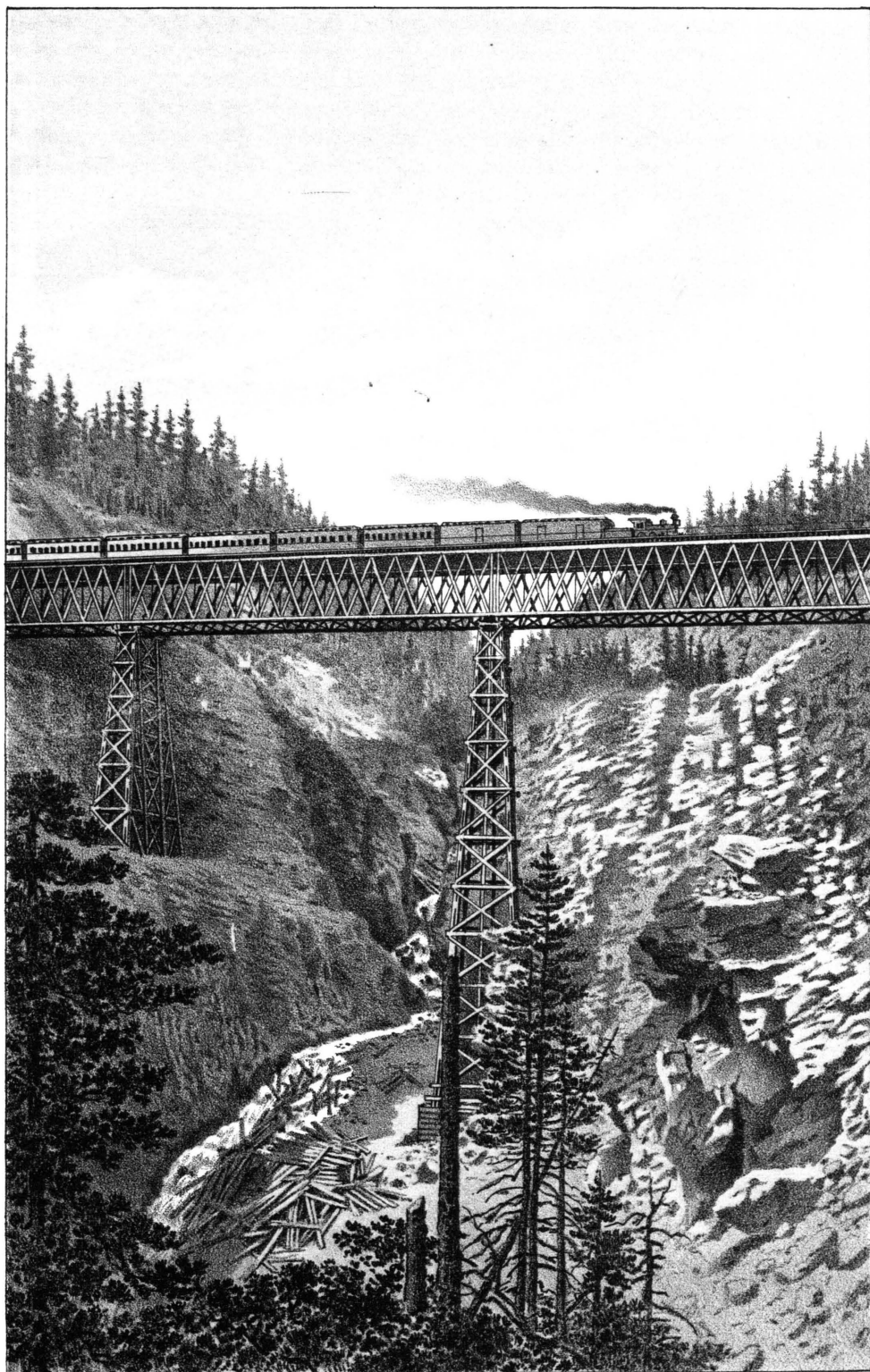
that gush from the lips, as the notes of the meadow-lark from the stillness of the prairie, whether, had "the gratitude" recorded above been less tardy in its manifestation, the errors of that short life might not have been, in part, amended, or, possibly, not committed. Whether, could the poet himself have been consulted, he might not have preferred to exchange an excess of posthumous marble for a sufficiency of present bread.

Up a narrow, dirty alley, we passed to the Globe tavern of the city, where is

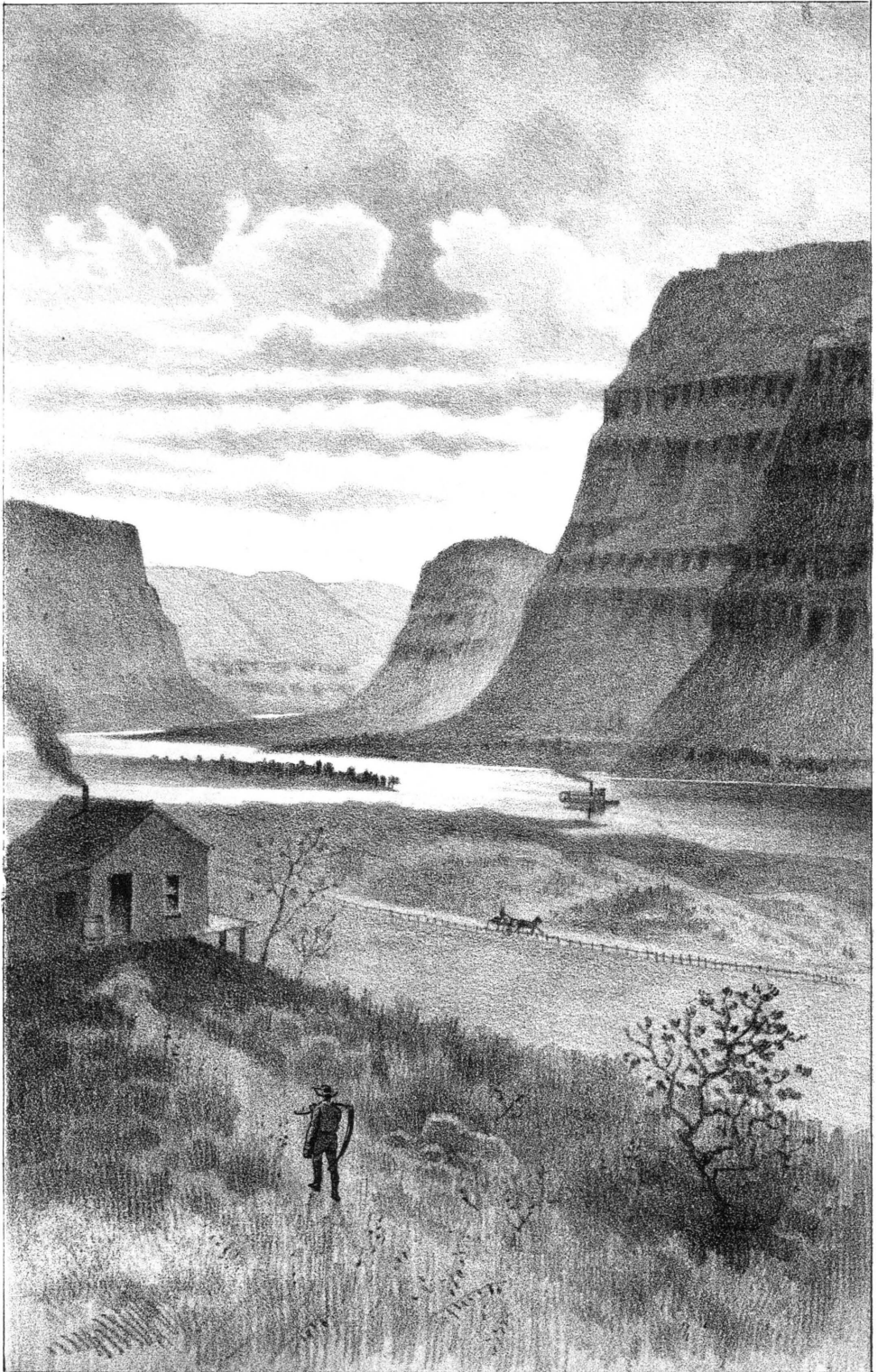
visited, bears evidence of this fancy of his for writing on the window.

Oh lovely Polly Stuart!
Oh charming Polly Stuart!
There's no a Flower that blooms in May
That's half so fair as thou art.

One of his best short poems, with the genuine ring to it, leads me to narrate the occasion of its having been improvised, or adapted, to "point a moral," which may not be generally known. On one occasion, being invited to dine at a nobleman's house in Edinboro, he



BRITISH COLUMBIA—STONEY CREEK TRESTLE. HEIGHT 296 FEET.



WASHINGTON—THE SNAKE RIVER AT ILIA.

went, and to his astonishment, found that he was not to dine with the guests, but with the butler. After dinner, he was sent for to the dining-room, and a chair being set for him near the bottom of the table, he was desired, by his host, at the head of the table, to sing a song. Restraining his indignation, he sang:

Is there, for honest poverty,
Who hangs his head and a' that?
The coward slave, we pass him by
And dare be poor for a' that;
For a' that and a' that,
A man's a man for a' that.

You see yon birkie ca'ed a lord,
(Pointing to the nobleman)
Who struts and a' that;
Though hundreds worship at his word,
He's but a coof for a' that;
For a' that and a' that,
A man's a man for a' that.

As the last word issued from his lips, he rose, and not deigning the company an adieu, marched out of the room and the house.

Howitt closes his narrative of his visit to the haunts and homes of Burns, in these touching words: "He no longer walks on one side of the market place of Dumfries, solitary and despised, while the great and gay crowd flutter on the other; but as the daily coach rolls on its way, the coachman, pointing with his whip says softly, 'That is the farm of Ellisland;' and every man and woman, every trade traveler and servant maid, says, 'Where?' and all rise up and there is a deep silence."

It was my good fortune to be present in London in March, 1885, when there was unveiled, in the poet's corner at Westminster abbey, a monumental bust in memory of Robert Burns, in presence of a representative gathering of Scotchmen, subscribed for by the people from all parts of the world. There were twenty thousand contributors, whose subscriptions were strictly limited to one shilling each, and the Prince of Wales

headed the list within the prescribed limit. All the Scottish members of parliament, also, sent in their shillings. At the conclusion of the Dean of Westminster's address, the bust, from the studio of Sir John Steel, a veteran member of the Scottish Royal Academy, was fixed on the stone screen, immediately to the right of the statue of Shakespeare, and but a short distance from that of Thomson, Campbell and Southey. Mr. Wil-son, of Glasgow, chairman of the committee, said it was a red-letter day for Scotland and Scotchmen, and one of which the poet himself had some dim prevision, when he penned the lines put into the mouth of "Gossip:"

He'll hae misfortunes great and sma',
But aye a heart aboon them a',
He'll be a credit to us a',
We'll a' be proud o' Robin.

It is a great compliment to Scotland, that out of the few remaining inches of space in the poet's corner, room should be found for this bust. No less so to America, that the bust of Longfellow, upon which I came very unexpectedly one day, with a thrill of pride and pleasure, should also have been recently placed there, between the bust of Dryden and the tomb of Chaucer. It bears the following inscription:

LONGFELLOW.

This bust was placed amongst the memorials of the poets of England, by the English admirers of an American poet.

On one of our visits to Westminster abbey, the enclosure to the monument of the late Dean Stanley had just been visited by the queen, the Prince of Wales and Princess Beatrice, who left, as testimonials of their admiration of his worth, very handsome wreaths and crosses of lovely natural flowers, with their cards attached. The Dean's own tribute to Burns may suitably conclude this article. He had the courage to speak of the poet as "the prodigal son of the Scot-

THE PINE CREEK MINES.

THE engravings on pages 347 and 348 depict a feature of mining life in the mountains, such as those whose knowledge of those regions is confined to summer excursions can scarcely realize. For several months at a time the cabins, hoisting works and mill buildings are buried beneath a mass of snow, and only by much labor are the entrances kept clear, and communication from one to the other maintained. The mountains are covered with snow from ten to twenty feet in depth on a level, and much more than that where the fleecy substance has been blown into huge drifts by the wind. In traveling from place to place the long snow shoe is brought into service, the use and necessity of which were graphically described in the March WEST SHORE. The subjects illustrated are the works of the Whitman mine, in the new Pine creek district, in Union county, Oregon. This district occupies an eastern spur of the Blue mountains, and has been prominently before the public for a year past. Considerable development was made last season, but winter, to a great extent, put an end to work, especially that of preliminary prospecting, as the snow prevented all surface operations; but the preparations being made point to a season of great activity the coming summer. Many claims have been sold or bonded to companies possessing sufficient capital to work them, and as the richness of the district has been demonstrated, much progress will be made. The country formation is granite, overlapped by metamorphic slates, and cut by a network of dykes of porphyry, trapp, trachyte and diorite, with a few streaks of dolerite. The ores are mostly of the concentrating class, carrying free gold, and on account of their complex and varied nature can be successfully treated only by roasting and amalgamation, or by amalgamation and concentration. The most extensive developments have been made at the Whitman mine, whose works are just visible beneath the snow in the engravings. A year ago the Oregon Gold Mining Company was organized in Louisville, Ky., and purchased a number of "prospect holes" in this new district, the first being the Whitman and Alta locations. Since January, 1886, the work of development has been pushed, and has been continued through the winter under the adverse circumstances depicted by the artist. Three thousand feet of shafts, inclines, tunnels, drifts and cross cuts, with the usual quantity of work in the

stopes, are the result of the operations to render them marketable. The superintendent is a miner of fifteen years' experience in Colorado, and to his energy and knowledge the vigorous and successful work accomplished is due. A number of properties have been purchased, or bonded, by Colorado parties, and several investments have been made in that region by business men of Portland. A season of great activity in the Pine creek district is expected, and this region will no doubt follow closely in the steps of the now famous Cœur d'Alene, which has two years the start in the work of development.

THE SNAKE RIVER BLUFFS.

ONE peculiar feature of the topography of Eastern Washington is the fact that the water courses have cut deep channels in the hills, and flow through gorges at a distance of five hundred to two thousand feet below the general level of the country. Standing on the top of the bluffs, one can look for many miles in every direction, the vision unobstructed by forests until the horizon is marked on all sides by mountain ranges, some of them but thirty, and others more than a hundred, miles distant. The surface presents a clear stretch of undulating hills, rising gradually to the foothills of the mountains. Not a river or creek can be seen, but here and there the eye catches a faintly-outlined dark streak in the landscape, which indicates the position of some channel far below the surface. The action of the water in wearing away such passages is plainly marked on the sides of the bluffs. The deepest of these gorges is that of Snake river, whose waters flow fully two thousand feet below the level of the farms whose products it conveys to market. Along its course, on a level with the water, are numerous bars or tracts of alluvial land, ranging from one to fifty acres in extent, which are noted for the quantity and quality of the fruit they produce. Peaches, apricots, nectarines and other semi-tropical fruits are raised there in abundance, being protected by the bluffs from the rigors of winter. On these bars are located warehouses for the storage and shipment of grain, which is conveyed by steamer to the railroad terminus further down the stream. An engraving of one of these characteristic spots is presented on page 330. It is a well known point on the south side of the stream, in Garfield county, known to the postal authorities as Ilia, and to the natives as Hemingway's Landing. The problem of getting grain from

the uplands down the steep bluffs to the river was a difficult one to solve. Only in a few places was a wagon road practicable, and there the grades were so steep that a full load could not be taken. The practical solution of the difficulty was made by Major Sewall Truax, who invented a grain chute, through which the wheat is rapidly passed from the top to the bottom uninjured. By an ingenious contrivance the grain is checked every few yards, and chaff and dust made to escape through chimneys, or vents. By this means the farmer has simply to deliver his grain at the top of the bluff, and in a few minutes it is safely stored away in the warehouse bins, cleaned and ready to be sacked for shipment. This peculiarity of topography has been a se-

rious obstacle in the way of railroad construction, since it compels the engineer to select the surface route with many cuts and bridges, or to follow the river bottoms, and thus be confined to the routes of nature, regardless of the location of the productive areas. The latter course has been adopted, because of the lower cost of construction. This gives the traveler but a limited view and a totally inadequate idea of the nature and agricultural possibilities of that region. It is only when he leaves the train, climbs out of the river gorges, and from the top of the bluffs surveys the miles of growing grain and hills green with grass, that he obtains for the first time a correct impression of the agricultural wealth of the Inland Empire.

ROCKY MOUNTAIN SCENERY.

WHEN the French explorers and missionaries first saw the great divide of the continent, more than two centuries ago, they called it the "Shining mountains," which appellation, upon a nearer view and a more intimate acquaintance, they changed to the "Stony mountains." From this we derive the present title by legitimate inheritance, and surely, no better name could be found to express the prevailing characteristic of the chief mountain range, the great back-bone, of the North American continent. The engravings on pages 291 and 302 present two distinct aspects, one being taken in the heart of the mountains, and the other showing a ridge, or spur, at a distance of about twenty miles. The first is a section of Silver Bow canyon, on the line of the Utah & Northern railroad, about

midway between the great mining city of Butte, and Anaconda, where the immense smelting works of the Anaconda Company are located. The canyon is about seven miles long, and is of the rugged, rocky, precipitous nature shown in the sketch. Through it flows Silver Bow river, with a rapid current and rocky bed. The other view shows a high, snow-covered ridge, as seen from a point near Perma, a little station on the line of the Northern Pacific, near the line of the Flathead Indian reservation. The large stream, whose bank the road closely follows, is the celebrated Clarke's Fork of the Columbia, which, under the various and changing titles of the Deer Lodge, Hell Gate, Missoula, Clarke's Fork and Pend d' Oreille, flows down from the main divide of the Rocky mountains, across Western Montana and

Northern Idaho, and unites with the few miles from Missoula. Another Rocky Columbia south of the international line, mountain scene, somewhat different in character, is that on page 282. This is still another view of this great mountain a scene on Boise river, in Idaho, a number of miles above Boise City. This is a scene in Kicking Horse range. This is a scene in Kicking Horse range. This is a scene in Kicking Horse pass, on the line of the Canadian Pacific railway, many miles farther north, a region where the engineering difficulties encountered were many and great. The engraving of the celebrated Stony creek trestle, given on page 329, also presents a striking example of the difficulty and expense of railroad construction in the western mountains. The trestle is a substantial structure, two hundred and ninety-six feet high in the center. It is the highest viaduct of the kind in the world, being seventy feet higher than the famous trestle at Marent gulch, on the line of the Northern Pacific, a

mountain scene, somewhat different in character, is that on page 282. This is a scene on Boise river, in Idaho, a number of miles above Boise City. This is the location of the Buffalo quartz mills, and is a place of considerable note in Idaho mining circles. These various sketches, covering a wide area, convey a good idea of the character of the scenery which passes before the eye of the traveler who crosses the continent by any of the northern routes. From the time he leaves the plains of Wyoming and Dakota, till he arrives on the shores of the Pacific, he sees one continuous panorama of rugged mountains, timber-clad ranges, green valleys, beautiful rivers, and giant peaks crowned with everlasting snow.

BEAR CREEK AND TABLE ROCK.

A CHARACTERISTIC landscape of the Rogue river valley is that of "Bear Creek and Table Rock," on page 292. The streams of Southern Oregon teem with gamy trout, and the angler and sportsman find in that region ample employment for both rod and gun. Bear creek is a tributary of Rogue river, running through the valley of that name, and the name is well known in the annals of Indian warfare on the Pacific coast. Table rock, which occupies such a prominent position in the background, was a land mark for centuries among the natives, and is of special historical note as the place where Gen. Joseph Lane held that memorable council with the hostile Rogue river Indians, which terminated with the Table rock treaty of 1853. Some severe fighting had taken place between the Indians and volunteers, the latter under the command of Gen. Lane, of Mexican war fame, who had retired to private life after occupying the gubernatorial chair of Oregon, and who had been wounded in the arm in the battle which ended the hostilities and paved the way for the "peace talk." Judge M. P. Deady, who was present at that memorable council, has recorded his recollections of it in the following language—

The scene of this famous "peace talk" between Joseph Lane and Indian Joseph—two men who had so lately met in mortal combat—was worthy of the pen of Sir Walter Scott, and the pencil of Salvator Ross. It was on a narrow bench of a long, gently-sloping hill lying over against the noted bluff called Table rock. The ground was thinly covered with majestic old pines and rugged oaks, with here and there

a clump of green oak bushes. About half a mile above the bright mountain stream that threaded the narrow valley below, sat the two chiefs in council. Lane was in fatigue dress, the arm which was wounded at Buena Vista in a sling from a fresh bullet wound received at Battle creek. Indian Joseph, tall, grave and self-possessed, wore a long, black robe over his ordinary dress. By his side sat Mary, his faithful companion and favorite child, then a comparatively handsome young woman, unstained with the vices of civilization. Around these on the grass sat Captain A. J. Smith—now General Smith, of St. Louis—who had just arrived from Port Orford with his company of the First Dragoons; Captain Alvord, then engaged in the construction of a military road through the Umpqua canyon, and since paymaster of the U. S. A.; Colonel Bill Martin, of Umpqua, Colonel John E. Ross, of Jacksonville, and a few others. A short distance above us on the hillside were some hundreds of dusky warriors in fighting gear, reclining quietly on the ground. The day was beautiful. To the east of us rose Table rock, and at its base stood Smith's dragoons, waiting anxiously with hand on horse the issue of the attempt to make peace without their aid. After a proposition was discussed and settled between the two chiefs, the Indian would rise up and communicate the matter to a

huge warrior who reclined at the foot of a tree quite near us. Then the latter rose up and communicated the matter to the host above him, and they belabored it back and forth with many voices. Then the warrior communicated the thought of the multitude on this subject back to the chief; and so the discussion went on until an understanding was finally reached. Then we separated, the Indians going back to their mountain retreat, and the whites to their camp.

The Indians were allotted a reservation at Table rock, and Captain Smith established there a military post, called Fort Lane, which, for three years, was one of the most important on the Pacific coast. At the end of that time, the Indians of that region having again been conquered after a protracted and bloody struggle, the reservation and fort were abandoned, and the Indians removed to another locality. Since that time the war whoop has never sounded in Rogue river valley, and Bear creek and Table rock have worn the peaceful aspect presented in the engraving.



Northwestern News and Information.

KING OF THE WEST MINE.—A company has been incorporated in Salt Lake City, to work the King of the West and Fawn claims, in Little Smoky district, Idaho. The incorporators are well known mining and business men of Salt Lake City, Franklin and Hailey, Idaho.

ELECTRIC LIGHT AT BOISE.—The Capital Electric Light, Motor and Gas Co. has been incorporated at Boise City, for the purpose of lighting the capital city of Idaho by electricity. Power to run the dynamo will be furnished by water from one of the numerous ditches that ramify the Boise country.

THE COLVILLE SMELTER.—The Mutual Mining and Smelting Company has machinery on the way to Spokane Falls for the erection of a smelter at Colville. The general superintendent is G. G. Vivian, a mining engineer and metallurgist of seventeen years' experience. An enterprise of this kind will be of great benefit to the mining industry of Colville, and bring the rich ores of that district more prominently before the public.

ALASKA PACKING CO.—A company has been organized in Astoria for canning salmon on a large scale in Alaska. Machinery and fittings for an establishment with a capacity of thirty thousand cases have been shipped, accompanied by thirty-six white men and seventy Chinese. The cost of the establishment will be about \$100,000.00, but the success of the enterprise is assured by that of others in that region operating on a smaller scale.

ARTESIAN WELLS IN UTAH.—The town of Provo, Utah, has nearly a hundred artesian wells. They line the public streets, and are to be seen in many front yards, their flowing water meeting the gaze on every side. The wells are rapidly sunk, ranging from fifty to a hundred feet per day. Flowing water is usually struck at a depth of about two hundred feet, and an ordinary well of this depth costs a little less than \$100.00. A firm engaged in the business has contracts ahead for a large number of these wells.

SAW MILL AT BRIDAL VEIL.—A saw mill, with a daily capacity of seventy thousand feet, is being erected two miles back of Bridal Veil falls. There is a large body of fine timber lying a short distance back from the Columbia, which can be easily milled. The lumber will be floated down to the river in a flume. The soil of that region is excellent, and will make good farms when cleared, or good grazing ground when only partially cleared.

GRANITE MOUNTAIN DIVIDENDS.—Two years ago the Granite Mountain mine paid its first dividend, of ten cents per share, since which time it has paid \$2,100,000.00. Of late, regular monthly dividends of twenty-five cents have been paid, but at a recent meeting of the directors, held in St. Louis, where the bulk of the stock is owned, it was decided to make the monthly dividend fifty cents in future, as the work on the mine warranted such action.

MACHINE SHOPS FOR BAKER CITY.—First class foundry and machine shops will soon be in operation in Baker City. Arrangements have been made with M. A. Dolby, of Hamburg, Iowa, to ship his plant from that place. In view of the great impetus given to mining in that region, the success of such an enterprise can not be doubted. It will be a great convenience to miners to have machine shops so conveniently located, thus avoiding the expense and delay of sending a long distance for castings.

SALT LAKE TO ROSEBURG.—Citizens of Roseburg, Oregon, have incorporated the Oregon Southern Pacific Coast & Utah Railway Co., for the purpose of constructing a railroad from Salt Lake City, across Utah, Idaho and Oregon, to the Umpqua river, thence down that river and its branches, to Roseburg, and on toward the coast, till it joins the line of the proposed road from Drain to the ocean. Capital stock is fixed at \$100,000.00, just about the cost of a complete survey of the route.

THE CAMAS GOLD BELT.—The gold belt district of the Wood river region, Idaho, is making fast strides in development. A railroad from

the mines to Hailey will soon be constructed. The Idaho Gold Belt Mining & Milling Company, with a capital stock of \$2,500,000.00, has been incorporated in New York, for the purpose of buying, operating and exploring mines in that district. The influence of this company will soon be felt, seconding the active work in progress by other companies.

THE WICKES TUNNEL.—On the line of the Montana Central, from Helena to Butte, will be a tunnel near Wickes, six thousand two hundred feet in length, which, according to the contract recently let, must be completed by the 15th of May, 1888. Work in the tunnel will be prosecuted on the European system of driving the tunnel with bottom headings, instead of working along the top, as is customary in this country. This system is said to be more expeditious, and less expensive, than the other.

RAILROAD TO BOISE CITY.—The Oregon Short Line has made a proposition to the citizens of Boise, to the effect that if they will release the company from its obligation to construct a branch from Caldwell to Boise, it will reconvey the right of way on that proposed line to the original owners, and will at once build a line to that city from Nampa. The proposition has been accepted by a majority of the original subscribers to the right of way fund, and work on the new route will probably be commenced within thirty days.

WALLA WALLA AND PUGET SOUND.—The movement at Walla Walla to secure connection with the Northern Pacific has advanced to such a stage that an organization has been effected. The Farmers' Union, of Walla Walla, Columbia and Umatilla counties, held a convention at Walla Walla and deputed nine prominent citizens of Walla Walla, Waitsburg, Dayton and Milton, to incorporate as directors of the Walla Walla & Puget Sound Railroad Co. Articles of incorporation, fixing the capital stock at \$2,000,000.00, have been filed, and J. F. Boyer has been elected president.

SEATTLE, LAKE SHORE & EASTERN.—Bids have been received for the grading of thirty miles more of the Seattle, Lake Shore & Eastern railroad, and the contract will soon be let. This will take the line to the head of Squak lake. The immediate point of destination is the Andrews coal mine, in Squak valley. It is the object of the company to reach the mine as quickly as possible, and bring the coal to Smith's

cove for shipment, where large coal bunkers will be erected. Mining at that point will be commenced as soon as the road reaches it. The rails are *en route* by sea, and will soon reach Seattle.

HOTEL AT VANCOUVER, B. C.—Vancouver, the terminus of the Canadian Pacific, will soon have a hotel in keeping with its important position. A handsome brick structure, one hundred and twenty by one hundred and twenty-eight feet in size, and five stories high, will soon be completed and opened to the traveling public. It occupies a commanding site, and from its broad balconies is presented a landscape of great beauty. The eye takes in Burrard inlet on the north, English bay and the Gulf of Georgia on the west, and the beautiful, snow-crowned Mount Baker on the south. Tourists will be in no haste to leave Vancouver, with such accommodations and beautiful surroundings open to them.

ARBOR DAY.—The last legislature of Montana passed an act appointing the third Tuesday in May, of each year, as Arbor day, empowering the governor to issue a proclamation calling upon all citizens to set apart that day for the planting of trees to beautify their homes, streets, public highways and cemeteries. The law provides for the exemption from taxation, to the amount of \$100.00 per acre for eight years, of all land planted in fruit trees, not more than thirty-three feet apart, and six years for land planted in forest trees, not more than nine feet apart. There are other privileges and exemptions to encourage the cultivation of trees. This is an action all states and territories having treeless areas should imitate.

THE DRUM LUMMON.—According to the official reports of the manager and superintendent of the now celebrated Drum Lummon mine, situated near Helena, Montana, there have been paid, during the past six months, dividends to the amount of \$615,000.00, and during the two and one-half years of the present management, the total of \$1,200,000.00. The total output for 1886 was \$1,712,910.00, and for 1885, \$894,210.00. The working expenses for 1886 were \$521,534.00, the surplus being consumed in the payment of dividends, the making of necessary improvements and the payment of old debts. Forty-two thousand tons of ore were crushed, averaging \$41.05 per ton. The report shows a property of great richness, and of such magnitude as to insure large dividends for many years to come. Work for the month of January con-

sisted of nearly six thousand tons, yielding \$180,000.00, or a monthly average two-thirds greater than that of last year.

ARTESIAN WELLS.—The failure of Mr. W. S. Ladd to secure flowing water on his farm near Portland, after sinking a well to a great depth, has caused many to doubt the practicability of that method of obtaining a large supply of water in this region. It is probable, however, that the unfavorable conditions met with there are only local. The war department has ordered a well to be bored at Vancouver, for the supply of the garrison at that point. The limit of depth is fixed at three hundred feet, but if water is not found at that depth, orders will probably be given to go deeper. An experimental well is being bored at Colfax, W. T., and the success or failure of these two efforts will do much to settle the question of artesian wells in this region.

DOUGLAS ISLAND MINES.—An extraordinary mining development is now in progress in Alaska, and in addition to the present mill in operation on Douglas island, Mr. Treadwell's company will this summer erect another two hundred-stamp mill. There is now in course of erection, a one hundred and sixty-stamp mill, by a Boston company, and two other mills, of one hundred and one hundred and twenty-stamp capacity, are projected. The work on all of those mills will be commenced immediately. An Eastern company has purchased several undeveloped quartz locations on Burner's bay, fifty miles north of Douglas island, for about \$60,000.00 or \$70,000.00, and at that place considerable development is also likely to take place during the summer.

BIG CREEK MINING DISTRICT.—Last year both gold and silver ledges were discovered near Big creek, twenty-two miles north of Baker City, Oregon, and a number of claims were taken up and prospected, until winter put an end to operations. The Annie has had the most work done upon it, in the form of a shaft forty feet deep, with an incline some distance farther. About thirty tons of ore have been taken out, and will be shipped to Denver for reduction. Assays of ore sent to that place last fall showed two hundred and thirty-three ounces of silver, fifty cents in gold, and twenty-five per cent. lead to the ton. The Nellie, the most promising gold lead, assays \$60.00 gold and \$17.00 silver per ton, and has a ledge three and one-half feet in width. The silver ledges are on the hills

surrounding Big creek valley, and the gold ledges farther down the sides and nearer the creek. These will be thoroughly prospected this season.

PAPER MILLS.—The LaCamas Paper Co. has secured in the East complete machinery of the newest pattern for the mill to be erected on the site of the one recently burned. The new building will be a fire-proof structure of brick and corrugated iron. Work will be pushed vigorously, as the new freight tariff renders the manufacture of paper in this region a much more profitable business than formerly. Mr. Chas. P. Thor, a paper manufacturer who has interests in the Remington mills, at Watertown, N. Y., and the Lick mills, at Agnes, Cal., has been investigating the water power at Oregon City, with a view to building a large mill at that point. He has expressed an intention of erecting works that will cover three acres of ground. Water power is offered him free for a period of ten years.

ALASKA TRAVEL.—All the indications point to a large tourist travel to Alaska the coming summer, and preparations are being made to accommodate it. Three steamers, the *Idaho*, the *Ancon*, and the *Olympian*, will be on the route of the Pacific Coast Steamship Company, giving a steamer nearly every week. The *Olympian*, a splendid side-wheel excursion boat, will be especially desirable for tourists. It will carry only light freight and mails, and will make the round trip in about twelve days. Parties desiring to connect with this steamer on Puget sound, must leave Portland April 17, May 1, 15 and 29, June 12 and 26, July 10 and 24, August 7 and 21, September 18 and October 2. To connect with the *Idaho* or *Ancon*, parties will leave Portland April 22, May 6 and 20, June 3 and 17, July 1, 15 and 29, August 12 and 26, September 9 and 23.

CALIFORNIA & OREGON R. R.—Construction work on the California & Oregon railroad is being pushed with great vigor. The graders are at work in the Siskiyou mountains, north of Klamath river, and in a short time the gap between the end of the track and Ashland will be reduced to fifty miles. This will make fifty miles of the most comfortable and agreeable staging to be found on the Pacific coast, and in the summer travel overland will be large. No more beautiful scenery can be found on the coast than that of the Siskiyou mountains and Klamath river, with the hoary crown of Mt. Shasta

looming up to the southward, across the plains of Shasta valley. This will, no doubt, become a popular route of travel, and the many delightful summer resorts along the line will not, in future, want for patronage. The sale of the Oregon & California road to the Southern Pacific has been consummated, and formal transfer will be made about the first of May.

UTAH & NORTHERN R. R.—The statement has frequently been made that the gauge of the Utah & Northern would be changed to standard width. The superintendent has recently made the statement that this work is now in progress, and will be completed from Pocatello north by the first of August. From Pocatello to Ogden no change will be made at present. Freight from Butte to Ogden, and from Ogden to Butte, will be transferred at Pocatello. This will be effected by changing the cars from narrow to broad gauge trucks, which is much more rapid than transferring the bulk. This will not cause a great deal of trouble as the amount of this business will not be very large, the main share being salt from below destined for Butte. The bulk of the freight to and from Butte and other Montana points on the line of the Utah & Northern reaches it by the Oregon Short Line at Pocatello in standard gauge cars, so that the change being made is a practical necessity.

INDIAN RESERVATIONS.—The Indian commission has been doing good work in this region. They have induced the Indians occupying the region about the mouth of Spokane river, embracing an area of three thousand square miles, or two million acres, in Northeastern Washington, to relinquish all their rights, and take up land on the Cœur d' Alene, Colville and Flathead reservations. The consideration is \$95,000.00, to be paid during a period of ten years, \$5,000.00 of it to go to such as settle upon and improve lands. Patents will be issued to such as take up lands. The Indians will probably locate at Cœur d' Alene. With the occupants of the latter reservation, an agreement has been made to permit the Spokanes to settle upon it. They relinquish all claim to land outside the limits of the present reservation, and the latter is confirmed to them forever. It contains nearly five million acres, only a comparatively small portion of which is suitable for cultivation, although it possesses much fine timber. The sum of \$150,000.00 is paid as a consideration, which shall be expended by the Secretary of the Interior and the Indian commissioner, in the erection and maintenance of a grist mill and saw

mill, and the purchase of necessary agricultural implements, \$30,000.00 being expended the first year, and \$8,000.00 each year thereafter for fifteen years. By these practical methods, our cumbersome reservations are gradually being reduced, and a beginning made in advancing the condition of the Indians toward a point of self-support.

VANCOUVER TO HONG KONG.—The Canadian Pacific has completed its arrangements for a regular line of trans-Pacific steamers, having purchased three first-class iron vessels, which have been plying on the Atlantic, on the Cunard line. For the present, a vessel will leave Vancouver and Hong Kong once in four weeks, but in a short time, this will be reduced to once in three weeks. The trip is scheduled for twenty-nine days, including a stay of three or four days at Yokohama, which will be none too long for the pleasure of travelers. The time table for the first three months is as follows:

	Leave Hong Kong Sunday,	Arrive at Vancouver Sunday,	Leave Vancouver Monday,	Arrive at Hong Kong Thursday,
Parthia.....	May 1	May 29	June 8	July 7
Abyssinia.....	May 29	June 26	July 6	Aug. 4
Batavia.....	June 26	July 24	Aug. 3	Sep. 1
Parthia.....	July 24	Aug. 21	Aug. 31	Sep. 29

SEATTLE TO SNOQUALMIE.—It is reported that the Columbia & Puget Sound Railroad Co. will lay a third rail on their Cedar river line, and from a point on the line, build a standard gauge road into Snoqualmie valley, to the iron and coal mines. This will be done to participate in the benefits of the great business to be opened up there as soon as the Seattle, Lake Shore & Eastern completes its line to Snoqualmie valley. The Oregon Improvement Company, which owns the stock of the C. & P. S. R. R., has maintained a party of engineers in the field all winter, and it is confidently asserted that before another winter sets in, Seattle will have two lines of standard gauge road to the coal and iron regions of Snoqualmie. Peter Kirk, the English iron manufacturer, who recently entered into an agreement with the S. L. S. & E. R. R., to mine and ship coal and iron from Snoqualmie, has purchased, for \$28,000.00, a sec-

tion of coal land between Green and Cedar rivers, a few miles northeast of Franklin. This is one of the few deposits of good coking coal found along Puget sound.

THE FLATHEAD COUNTRY.—David Morgan, who, about a month ago, left for a visit to the Flathead country, returned recently. He states that on starting from here with pack animals, he had to return and make the trip by rail. After leaving the railroad, it took eighteen days to get into the Flathead country. At times he was compelled to go ahead and break trail, so as to enable the horses and mules to walk, the snow being so deep; but on reaching the valley, he found the grass growing, and plowing on that portion of the reservation already filled. Much of the land is already settled upon, and numbers of people are continually going in. He said in one day, returning on the trail, he counted eighteen Butte parties going in for the purpose of locating land. He is much pleased with the country, and can not praise it too much as a farming country. He adds that mineral abounds in mountains adjacent to the valley, of all descriptions. Among the rest, is some gold quartz, as also silver, copper and lead. Coal abounds in abundance, and in sufficient quantities to supply the whole of Montana for all time. He says that the people expect a railroad in the country very soon, at least considerable talk is going on there concerning it. Those now arriving have not much choice of location left, as all the land adjoining the lake has been taken up, and most of that where living water runs. Cattle are said to have wintered well there.—*Butte Miner*.

ONE YEAR OF LEGITIMATE MINING.—The Ella mine, owned by the Boulder Mining & Reduction Company, near Wickes, Montana, is rapidly developing into a first-class property. This mine was discovered about a year ago, and already has a shaft down two hundred and fifteen feet, with levels at one and two hundred feet, exploring the vein about two hundred and forty feet along its course, opening up an ore chute, or chimney, about two hundred feet along the vein. The vein, or fissure, is about four feet wide all the way, carrying a uniform body of ore, two feet wide the entire depth. The average value of the ore, as taken from the levels, is about thirty-five per cent. lead and thirty-five to thirty-seven ounces silver, and some gold. There is also a wing about eighty feet east of the shaft, connecting with the east level, making a total development of about five hun-

dred and sixty feet, showing the same regular ore body. Measuring the ore chimney at various points where opened by the shafts and levels referred to, shows a surprising regularity of the ore, both as to quality and quantity. The amount of ore in sight will exceed eight thousand tons, exclusive of what has been taken from the workings, of an average value of \$60.00 to \$75.00 per ton, which gives an immense aggregate, and after deducting one-third for the cost of mining, reducing and marketing, still leaves a handsome margin for profit. The Baltimore is another mine in the vicinity that has been quite extensively developed, producing, mainly, rich milling ores.—*Helena Herald*.

COKING COAL IN MONTANA.—Last fall Mr. H. Millard, the owner of extensive coal mines on Belt creek, entered into a contract with the Hudson Mining Co., of Neihart, to experiment with the coal mined by him, and if it was found that the coal would coke, he was to be awarded a contract for a large amount. On the strength of this, Mr. Millard set himself to work constructing two large coke ovens, and proceeded with the work. At first he took the coal from the bank as it came, and did not meet with full success; then he experimented with the various strata, and finally came upon the coal he wanted, the bottom stratum, of some twenty-two inches in thickness. The ovens were then reconstructed, after an improved method, and the result was a complete success. The Hudson Mining Company is back of Mr. Millard in this matter, and the work of coking coal at Belt will be prosecuted with vigor this summer. The first coking has been tested and pronounced a success. Parties who are conversant with these matters, who have handled it in the East, say that the samples are first-class coke. The result of this experiment will be to start up a new industry in Northern Montana, and it will have a tendency to induce capitalists to construct railroads to Belt, if for no other reason than to take out the coal and coke. The great smelting works of Anaconda, Butte and other districts must have coke, and now it is shipped from the East at great expense. The successful burning of this product, within the limits of the territory, will keep the money at home, which is annually sent to the East. The town of Belt will yet be an important point.—*Benton River Press*.

BOISE CITY WATER POWER.—The Boise river can furnish power for a hundred mills. It is furnishing power for a number of important industries now established, and can supply hun-

dreds of others. The sources of the river, as is well known, are scattered all through the snow-clad mountains, and for eight months each year it is swollen to a continuous flood. During the remaining four months the volume of water is much reduced, but even then it is great enough, and has proven itself great enough, to run the industries now established, with a margin of untold promise besides. The peculiarity which contributes so largely to making Boise City a very desirable location for manufactories, is the rapid fall of the river, it averaging not less than eight feet to the mile. It admits of what probably would be unparalleled in the history of manufacturing, namely, that within any given five miles, five manufactories could be operated with the same water. The supply of water, in the light of actual experience, and the fact that the conditions admit of the repeated use of the same water, is practically inexhaustible. The cost of excavating ditches, and of water wheels, is nothing, compared with the initial cost of engines and boilers, and the subsequent expense of maintaining a supply of coal, even in districts where the supply of coal is unlimited. Or water can be secured from the ditches already excavated, at a small expense in comparison with that of coal. A woolen manufactory here would not only be in the midst of an unlimited supply of material, but also, in the center of a market extending hundreds of miles toward all points of the compass. A quartz mill and smelter, a tannery, paper mill, and many other industries, once established, would enjoy many special advantages. There will be no trouble about shipping the products to market. There will be a railroad here before any of the manufactories mentioned could be erected.—*Boise Statesman*.

BRITISH COLUMBIA IMMIGRATION.—Every indication points to a large immigration to British Columbia during the present year. The completion of the Canadian Pacific railway, and the ease and facility with which this province and coast can now be reached, has brought British Columbia into great favor with intending emigrants in England. The fame of our climate has likewise had much to do with creating so favorable an impression in the minds of hundreds who are leaving the congested centers of population in England, to make for themselves a home in this, to them, remote portion of Her Majesty's dominion. Always on the alert to take advantage of every opportunity that presents itself, the management of the Canadian Pacific railway on this coast has decided upon

a plan that commends itself to the new comers. Realizing the inadequacy of the accommodation made for the reception of immigrants, both in this city and on the mainland, that company has decided upon erecting a large and commodious home at Vancouver, for the reception and housing of immigrants and their families, until such times as they can provide homes for themselves and secure either land whereon to settle, or employment. Every regard will be paid to the comfort and health of those coming to the province of the midnight sun, and making it their home and country, by adoption, for the future. Guides will be provided for land hunters on the island, as well as on the mainland. Incoming trains will be boarded in the mountains by special agents, whose duties shall consist entirely of giving passengers *en route* every possible information about the country. This, indeed, will be an acceptable move, and tend, still further, to popularize the Canadian national route. It has been demonstrated, that on arriving on this coast and not finding things generally so agreeable, or of the rose color so vividly painted by emigration agents abroad, the new comer becomes dissatisfied and hies himself across the sound, in hope that a better condition of things will be found.—*Victoria Times*.

PUGET SOUND TO GRAY'S HARBOR.—Mr. John Campbell, of Port Blakely, was in Seattle Monday, to see Mr. Simpson and notify him that the company would be ready for him to commence work on the extension of the Puget Sound & Gray's Harbor road by the end of the present week. Mr. Campbell refused to talk with the reporter, relative to the intention of the company, but a gentleman equally as well posted on their intentions said: "I have it from the very best source, that before snow flies, the waters of Puget sound will be connected with those of Gray's harbor by bands of steel. It is only thirty miles from the present terminus of the road to deep water on Gray's harbor, and the route is by no means a difficult one to build a road through; in fact, a great portion of the way, it would be very easy work. This road will penetrate one of the finest timber belts in the United States, besides affording the wonderfully productive Chehalis valley an outlet on Puget sound, and a market for its products. There is no question about the road paying, and it would be the means of opening up and developing a vast region of country now almost unexplored. The people of Gray's harbor and the Lower Chehalis are now dependent upon Port-

land for a trading point, but with the Puget Sound & Gray's Harbor road completed, Seattle will enter into trade relations with those people at once. A steamer will be placed on the route between Seattle and Kamilche, the sound terminus of the road, to make a round trip each day. There is also talk of putting a fast steamer or two on the route between Gray's harbor and San Francisco, in which case, passengers for the Bay City will save a day's time by taking that route. The company has ample funds on hand to complete that road this summer, and I have not the slightest doubt but what they will, as I received such a statement from a person well up in the councils of the company. The road will pass through the towns of Elma and Montesano."—*Post-Intelligencer*.

SEVEN DEVILS COPPER DISTRICT.—The Seven Devils district is situated in the northwest portion of Washington county, Idaho, and about one hundred miles from Weiser City. It is northeast from Baker City, less than ninety miles in distance. The nearest and best route from Baker is by way of Sparta, Pine valley, across the Brownlee ferry at Snake river, thence down the river fifteen miles to Salt creek, at Glover's old cattle ranch, thence up Salt creek by good pack trail to Bear creek crossing, a distance of sixteen miles, there connecting with a wagon road from Weiser City. From the crossing at Bear creek to the mines it is about ten miles. The entire route is well watered, and grass is in abundance. The altitude of the camp is between five and six thousand feet.

The discovery of copper mineral in this section dates back as far as the years 1863-4, when the old O. S. N. Co. dispatched Engineer Levi Allen to examine the waters of Snake river, with the view of ascertaining the practicability of its navigation. In this undertaking the explorers were necessarily compelled, at different times, to ascend the rugged mountains lining the river's shores, and naturally drifted, more or less, into the inland country. It was at one of these times that Allen and his crowd discovered mineral abounding, and after more or less prospecting, unearthed a body of ore, which they named the Peacock mine. Little attention was paid to this discovery until a few years since, when Allen and some companions went back to the camp and commenced further researches, with wonderful success, until now the camp has attracted other miners and many capitalists, who have caused large development work to be done. The principal mines of the camp are the Peacock, White Monument, Hel-

ena, Alaska, Blue Jacket and Decorah. All the mines of the camp make a good showing, for the amount of development work done on them. During the past winter, about thirty miners have been pushing work in the camp, and it is certain a new impetus will be given to it this spring and summer, by reason of many wealthy parties securing control of the principal properties there last year. The greatest drawback to the camp at present is the matter of transportation, but there is a strong probability of this being remedied, should the Union Pacific conclude to build a railroad up the Weiser river, and upon which proposed route the company has a corps of engineers now surveying, under the charge of Engineer T. A. Clark. This road is the one proposed to tap the Northern Idaho country.—*Baker City Democrat*.

THE YUKON MINES.—The present starting point for the Yukon country is Juneau. From here, the route is by steamer to Chilkoot, the station on the west side of the Coast range, and the beginning of the portage. The latter is about thirty-five miles in length, by trail, and passable, at present, only for human beings, although animals can approach to within two miles of the top of the range on this side, and within one on the opposite. This little three miles of the whole route is the great stumbling block of the new El Dorado. It is the means of the miners now being charged the extortionate price of \$13.00 per hundred pounds, and upward, for the transportation of all articles necessary for the trip, which is done on the backs of the natives. If some man would only grasp the situation in its true light, he would forthwith blast out that little three miles, and establish a pack train there for the transportation of the large amount of merchandise that will necessarily have to be taken in during the coming summer and those to follow. At the foot of the mountain, on the opposite side, is Lake Lebarge. Here, boats and rafts are constructed, then away they sail, over a continuation of lakes, until the head of Lewis river is reached; then down Lewis, which is a large stream, until it empties into the Yukon. From Lake Lebarge, throughout the whole lower, or Yukon, country, traveling from point to point is done in boats, that whole section being cut up by rivers and lakes. These run ample water for the navigation of moderate sized boats, and in many instances, enough to float large steamers, and the latter can run up the Yukon, and then up Lewis river, to within one hundred and fifty miles of tide water, at Chilkoot. In regard to the mineral

resources of the country, our informant stated he had seen as high as \$3.00 to the pan taken out; miners had made \$175.00 per day, although the mode of washing was the old-time rocker and sluice box. One bar on Stewart river yielded about \$15,000.00 to its owners the first year, and last fall, before shutting down, better pay than they had ever before struck was found. On this bar, a streak of fine gold, about the thickness of a knife blade, was found running continuously, about six inches below the surface, and was about as pretty a sight as an enthusiastic miner could gaze upon. He is an old San Juan miner, having been in most of the mining camps of Colorado, and also other states and territories; but says, never before has he seen as much gold scattered throughout, as there is in the Yukon country. It is found in all the bars on the large rivers, and along all the small streams putting down from the Rocky mountain range. Placer mining can be commenced about May 1st, and carried on until October 1st, the winters being very cold. A new field had been discovered on Seventy Mile creek, and when the news thereof reached Port Nelson, on Stewart river, it caused a big excitement, and the miners left there and went to the new diggings. A few specimens of very rich gold quartz were also brought out by himself and companion, from a new discovery, but were left with the abandoned mail. The Indian was badly frozen, and he will be brought to Juneau shortly, to have one of his toes amputated. If the weather moderates, in all probability the mail will be found, and brought down on the next trip made by the *Yukon*. If it should reveal a big strike there, Juneau will become nearly depopulated, and thousands from other sections will pour into the country. It will mean another Cassiar, only on a more extensive scale, and where men can take out fortunes in a short time. If the placer mines are there, quartz must furnish the supply of gold; and with it scattered so thickly in the gravel, the mother veins can not be otherwise than very rich.—*Juneau Free Press*.

Thoughts and Facts for Women.

It is essential that every woman who is a home keeper have time set apart, regularly, for systematic thought. The ever returning daily routine of trifles to be attended to, each one of which is quite as significant, in its place, as though it was much greater, wears the strength and powers of the home keeper, till, if she have not a determined will to reach out and up, she is soon satisfied with a very limited mental horizon. We seek cosmetics, tonics and other beautifiers and health restorers, until our purses grow thin, and then often produce nothing better than a dejected "O, dear! I am growing old, and my health seems completely broken." Help is allowed when we are no longer, possibly, able to compass the work ourselves. What a mistake is this that women are making! Are they never told that they are composed of a three-fold nature, to slight any one of which injures the whole? Upon how many tombstones might be written, "Starved! Slow process starvation, voluntarily done." If Princess Like Like be a heathen in starving her body to save her people, as she supposed, what can we say of such as starve the mind for a cherished whim? Who has not known of girls graduating from their college course with high honors, and bearing upon their cheeks the bloom of health, who, upon assuming the responsibilities of home in a few years, withered and faded as a blossom that is gone? At such a time, we lament the fact that girls will seek a college education, and lay the blame at the college doors, bewailing the errors of female education. Where is wisdom hid, and in what place may understanding be found? Can we not see that as the blossom fades and dies when it ceases to grow, so does a human being, whether man or woman? It is a matter of experimental fact, gleaned from such schools as Oberlin and Vassar, that it is not the education of the girl, in a great majority of cases, but the non-education, the non-progression, of the woman, which injures the health. And another fact remains undeniable, that many women are restored to health by taking up a course of study and regularly pursuing it. Cheerfulness and content come through an evenly-exercised being. This can not be had

without systematic thought, thought which exercises and strengthens the mind and gives it a rich pleasure in existence, which is as far above the physical pleasure coming from bodily exercise, as the mind is above the body. The planning of house work does not give this mental exercise, but true home work does. To be an intellectual companion for life, to be a thoroughly capable teacher for those entrusted to her care, requires of the home keeper mental health and strength. And the woman who would be truly unselfish and painstaking in this direction, will not neglect mental food any less willingly than bodily food; and the time to take it must be set apart the same as the time which is set apart for the regular meals of the day.

How much to be admired is that nobility of character which is betrayed by ladies of rank and wealth, in devoting their time and energies to philanthropic and useful purposes. In the "new profession," philanthropy, they are especially fitted to be successful; for rank and wealth give them both influence with others, and the where-with-all to use effectively all personal powers which may be possessed. Carmen Sylvia, the queen of Roumania, has been in the habit of giving literary lectures to a few young ladies in her own palace, the daughters of officials in the household and members of the highest aristocracy. The work proved so useful and congenial, that she was willing to enlarge it, by giving the same course to girls of the high school in Bucharest. But to do this, it was necessary for her to pass an examination and receive a professor's diploma, from the Minister of Instruction. This she willingly agreed to, and is now a regularly certificated teacher, beginning her course with the new year. Surely, this is a practical age, and to overcome the cruelty which condemns kings and queens to do nothing useful, is a hopeful result.

Something of the proportions of the culinary department of Vassar college, may be known from the bill of fare, as taken from the Steward's report. Six hundred eggs are consumed daily; two tubs of butter are necessary to treat the girls to griddle cakes; seventy-five shad are required for dinner on Friday; fifty pounds of butter and three hundred and fifty quarts of milk are the daily quota; fifty-five quarts of ice cream give each student only a modest slice. These are but examples, which convey a partial idea of the immensity of the daily work which is necessary to spread the tables for these college girls. Only wholesome, nutritious food

is put upon the table, and as would naturally be expected, many a petted child, who has been fed at her pleasure, upon sweetmeats and other non-nourishing viands, finds it hard to accustom herself to the new regimen. Yet, much of the efficiency of the Vassar student is due to this sensible mode of dining, and it would be well could women all over our land receive a lesson from the Vassar assortment of food, and heed it.

A certain town in the East has inaugurated a new 5:00 o'clock tea. The tea is for ladies only, and its prime object is for conversation upon some subject which was chosen at the last meeting, two weeks previously. The conversation at one meeting, from the time they sit down to the table, until they depart, at 8:00 o'clock, must all be upon this one subject. The subjects vary widely, but are mostly concerning questions of the day. President Cleveland's Cabinet, the Irish Question, the Advancement of Cookery within our Remembrance, are samples of their chosen topics. The hostess is chairman of the meeting, so far as it needs any direction, and a sort of monitor is appointed, secretly, by the hostess, who reports, at the next meeting, any surreptitious remarks that may be sandwiched in, such as inquiry about health, help, etc. The circle consists of such a number of ladies as may be seated, at one time, around the tea table. The supper is a limited one—one kind of meat, bread and butter, pickles, cake, fruit and tea. Most of this may be prepared the day before, so that the hostess need not be fatigued. No display of dishes or flowers is encouraged, and even the most able dispense with the changing of plates for second course. This certainly is a move in the right direction. What woman, who has entertained largely, but has felt, at times, that the worry was more than the worth? Common sense in entertaining will give us a greater supply of this useful faculty in other things.

Says *Babyhood*: "Parents are too apt to be deaf to any discords in the speech of their nurslings; but to an outsider, and especially one who has never been so fortunate as to possess a little boy or girl, the loud, rough "Yes" or "No" of a child, has a rasping effect upon the nerves, which can never be removed by any prettiness or brightness belonging to the offender. Nevertheless, most parents not only neglect to teach their own children to be polite, but even affect a contempt for the well-behaved children of other people (for such are occasion-

ally to be seen), often saying that such children are 'forced,' and that they 'would not have their children repeating such phrases, like parrots.' With singular obtuseness, they fail to perceive that a polite little boy or girl is an object of pleasure and admiration to all, excepting the parents of the ill-behaved children." Children absorb politeness from those about them, just as they do correct language. If all, or nearly all, of the language uttered in the child's hearing, be incorrect, we do not expect the child to speak aright. So, if awkwardness, bluntness, and inconsiderateness, characterize the manners of seniors toward children, what can we expect in return, when it is the special inclination of childhood to learn by imitation? Some one has said that the child is a mirror, in which the parent may behold himself. Certain it is, that many parents may remember, with profit—

Please is but a little word,
And thank you is not long.

Now, as it is time for the arranging of the summer flower beds, all the artistic taste which has been acquired should be summoned and used. "A thing of beauty is a joy forever," and a well-arranged, blooming bed of flowers is certainly a thing of beauty. Of course, in planning the bed, there must be borne in mind, the size and color of the plant when matured. The tall growers should be used for the center of the bed, or for the farther edge, if it may not be surrounded; then a gradual decrease in size, until about the edge are placed such plants as mignonette, candytuft and sweet allyssum. Thought, also, should be taken in arranging the flowers in the yard as a whole. If possible, leave the front yard without flower beds unless it be very large. A perennial flower bush here and there in the grassy plat is much prettier. Flower beds should be arranged near the sitting room, and other parts of the house which are in constant use. However, the playground of the children, if there be any, must be taken into consideration, for human flowers must have a place to develop and bloom, ere we consider the plant of a few months' growth; but let them bloom together where it is possible.

HANGING BASKET.—There are many pretty devices for hanging baskets, but for economy and beauty we recommend the following: An ox muzzle of wire, which may be purchased for a few cents, if painted olive and lined with moss, is one of the best designs. First securely

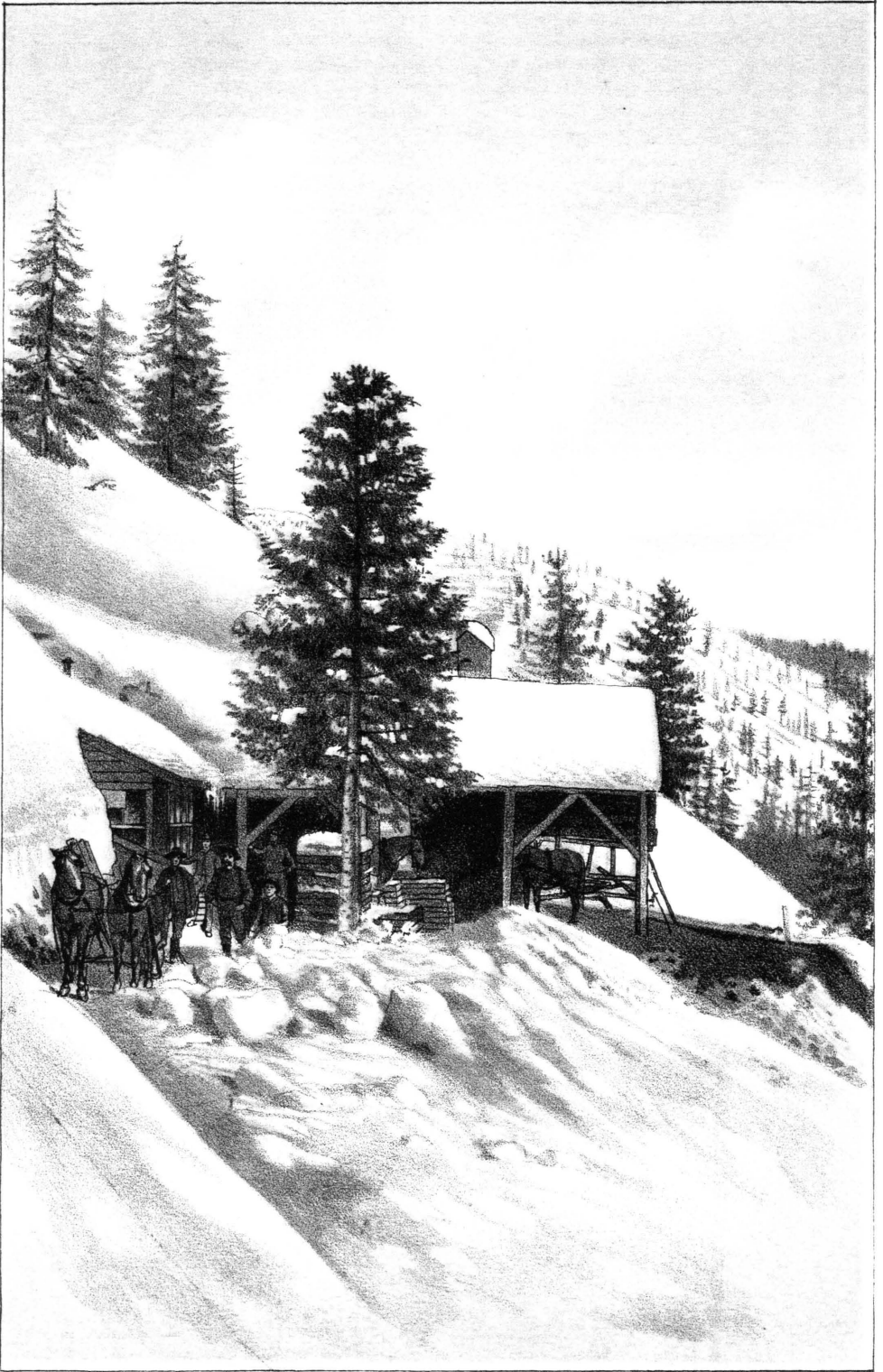
place a layer of soft moss inside the wires, lapping the pieces well that no dirt will escape; then fill with suitable soil, the pressure of the soil causing the moss to completely conceal the wires. The basket may be suspended by wire or chains—the twisted silver wire used for hanging picture frames is strong and durable, as well as inexpensive. If a root of *maurandya* vine or *thunbergia* is planted by each of the three wires by which the basket is hung, they will climb rapidly and give it the appearance of being suspended by vines. Put anything suitable in the center—a silver fern is delicate and pretty—and around the edges, roots of the *saxifrage fortunei* tricolor; make holes through the moss into the earth at the sides of the basket, and put in little bits of the *saxifrage*. Keep the basket well watered and it will be a beautiful sight. Of course this is not suitable to hang over a carpet, but in a conservatory or on a piazza in summer it is admirable.

MANTEL LAMBREQUIN.—An effective design that is very easily arranged. The dimensions are, of course, dependent upon the size of the mantel to be covered. For one of the ordinary length, the plain piece should be about twelve inches in depth, and reach from one end to the middle of the mantel. The draped piece should be about two inches shorter, and about six inches wider, so that when it is draped, the bow will be a short distance beyond the middle of the mantel. The top piece is a sash, the width of the mantel, and sufficiently long to hang over each end about two inches deeper than the corresponding front piece. In the corners of these front pieces, flowers of some pretty, contrasting color may be embroidered, or painted, and the whole finished neatly with fringe.

CURTAIN FOR SITTING ROOM.—Get enough jute of a pretty brown shade, to make lengths just reaching the floor. Then buy one piece of scarlet opera flannel, and another of peacock blue, enough to put two bands, an eighth of a yard wide, upon each curtain. These are to be placed across the top and bottom, some little distance, say a quarter of a yard, from the top and bottom. Have the scarlet an eighth of a yard wide, but cut the peacock blue half that width, and put each side of the scarlet. Fasten down the edges with a feather stitching of gold, or other bright colored embroidery silk. Of course, more expensive bands of plush may be used, or of felt, pinked on the edges and sewed down with point Russe stitches, two rows across each baist.



WINTER AT THE PINE CREEK MINES.



WINTER AT THE PINE CREEK MINES.

PUBLISHER'S ANNOUNCEMENTS.

ESTABLISHED 1875.

THE WEST SHORE.

An Illustrated Western Magazine of General Information, devoted to the development of the great West.

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L. SAMUEL, Pub., 171-173-175 Second St., Portland, Or.

Entered for transmission by mail at second class rates.

THE WEST SHORE for May will contain several contributions of special interest. Under the title of "Mining Ditches and Water Rights," will be described the method by which the immense hydraulic mines secure their supply of water, and a number of incidents illustrating the difficulty of adjusting conflicting claims to water will be related. The second of Dr. Kuykendall's valuable papers on the "Myths of the Columbia River Indians" will appear, also another of C. L. Henderson's charming letters on her tour in Scotland. That portion of Northern California, the Siskiyou, Klamath and Shasta region, through which the railroad is being constructed, will be described, and its grand scenery illustrated. In the line of fiction will appear the first half of a deeply interesting story of mining life in the Sierras, entitled "An Idyl of Devil's Gulch," by Mem Linton; also the concluding chapters of "The Autograph Stone." Other articles on various subjects, the departments of information and that devoted to women, will make a most complete and interesting number.

BOUND volumes of THE WEST SHORE for 1886 will be sent to any address upon receipt of \$3.00 for cloth and leather binding, and \$2.50 for paper and cloth binding. A few volumes of 1885 can be had for \$2.50 in paper and cloth binding, and \$2.00 for 1883 in paper covers.

RAND BROS., one of the oldest established real estate firms in British Columbia, having offices at Vancouver, New Westminster and Victoria, report general activity in real estate throughout the province. The firm being one of the most reliable, and having superior facilities for judging the state of market, are especially recommended to such of our readers as are seeking safe and profitable investments.

OWING to the amount of work involved in preparing the illustrations, the publication of the article on "British Columbia by Rail and Water" has been deferred to the June number. The article will be a comprehensive one, and will deal with the scenery, industries, natural resources and commercial conditions of the province, and will be embellished with many engravings of objects of interest which meet the traveler's gaze.

THE large holiday issue is exhausted, but there are on hand a quantity of the elegant colored engraving of Mt. Hood, which will be sent in a pasteboard tube to any address, upon the receipt of fifty cents each. All new subscribers will receive this engraving as a premium until all are gone; consequently, an early remittance is advisable. The subscription price is \$2.50, but all who subscribe before the first of July will receive the magazine one year for \$2.00.

WE have in course of preparation a large bird's-eye view of the state of Oregon, twenty-four by thirty-two inches in size, which will be printed in four colors. In this manner the mountains, valleys, streams, cities, towns, railroads, etc., etc., will be brought out distinctly, and one can, at a glance, obtain a correct idea of the topography of the state. This work is of a class never before attempted on the Pacific coast, and the engraving will be an elegant and valuable one. This will be sent free to all yearly subscribers, when completed.

WAKE UP! A live, energetic man or woman is wanted in every county, to engage in a permanent business, paying Thirty Dollars a week and all expenses. Experience or capital not required. No risk. No failure. Write at once. Full instructions and A One Dollar Sample for 10 cts., to help pay postage and advertising. H. C. ROWELL & CO., Rutland, Vt.

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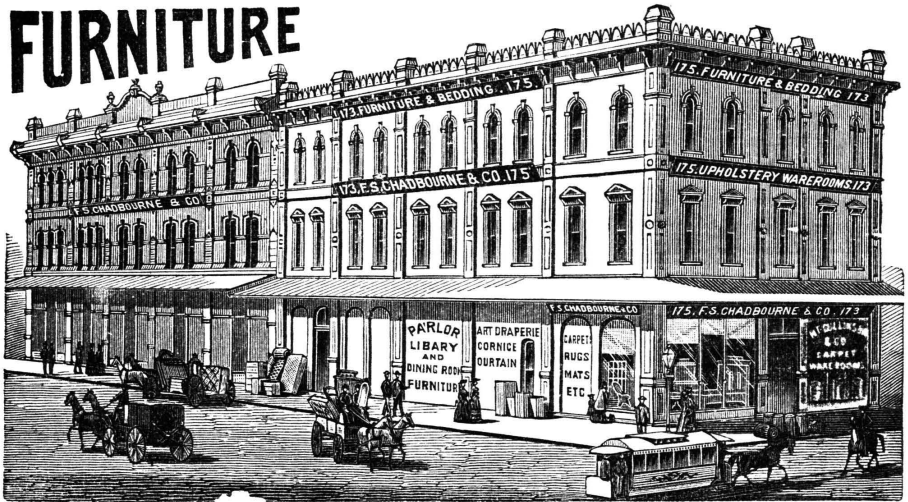
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A BEAUTIFUL WOMAN
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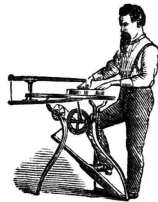
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Josephine, Klamath, Lake, Morrow, Tillamook,		\$ 2.00
Baker and Clatsop,		2.50
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Douglas, Lane, and Yamhill,		5.00
Linn,		6.00
Marion,		7.00
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TACOMA!

Western Terminus of the Northern Pacific Railroad, at the
Head of Navigation on Puget Sound.

Population, 1875.....	300
Population, 1880.....	760
Population, 1886.....	8,000
Assessed Value of Property, 1875..... No city assessment	
Assessed Value of Property, 1880.....	\$517,227.00
Assessed Value of Property, 1886.....	\$2,912,535.00
Miles of Sidewalks, 1875.....	0
Miles of Sidewalks, 1880.....	1
Miles of Sidewalks, 1886.....	20
Miles of Streets Graded, 1875.....	0
Miles of Streets Graded, 1880.....	0
Miles of Streets Graded, 1886.....	25
Public School Buildings, 1875.....	1
Public School Buildings, 1880.....	2
Public School Buildings, 1886.....	7

No City Indebtedness, Therefore Taxes are Light.

School Attendance, 1875.....	60
School Attendance, 1880.....	125
School Attendance, 1886.....	1321
Newspapers, 1875.....	1
Newspapers, 1880.....	1
Newspapers, 1886.....	5
Private School Buildings, 1875.....	0
Private School Buildings, 1880.....	0
Private School Buildings, 1886.....	3
Church Buildings, 1875.....	0
Church Buildings, 1880.....	3
Church Buildings, 1886.....	18
Brick Buildings, 1875.....	1
Brick Buildings, 1880.....	2
Brick Buildings, 1886.....	31

Water Works, Built 1884, Cost \$300,000.00.

Eleven miles of mains, supplied by aqueduct ten miles long.

Tons of Coal Shipped, 1875.....	0
Tons of Coal Shipped, 1882.....	56,300
Tons of Coal Shipped in 1886.....	231,250
Hotels, 1875.....	3
Hotels, 1880.....	6
Hotels, 1886.....	14
Hop Shipments, 1875, bales.....	4,000
Hop Shipments, 1880, bales.....	7,000
Hop Shipments, 1886, bales.....	17,000
Miles of Railroad Tributary, 1875.....	105
Miles of Railroad Tributary, 1880.....	136
Miles of Railroad Tributary, 1886.....	2,169

Gas and Electric Light Works, Built '84, 2 Miles of Mains.

Regular Steamers, 1875.....	3
Regular Steamers, 1880.....	6
Regular Steamers, 1886.....	27
Besides ocean sailing vessels.	
Manufactories, 1875.....	1
Manufactories, 1880.....	3
Manufactories, 1886.....	28
Banks, 1875.....	0
Banks, 1880.....	0
Banks (all national), 1886.....	3

Money Spent in Building Improvements, 1886, \$763,500.00	
Expended in Street Improvements, 1886.....	57,541.00
Mean Annual Temperature.....	50 deg.
Average Annual Rainfall, inches.....	40

The Only Steam Flouring Mill on Puget Sound.

Capacity, one hundred barrels per day; to be increased to two hundred barrels per day.
Street car franchise just passed by city council, to company that will have four miles of road in operation in city limits within fourteen months.
Two free reading rooms. The only city north of San Francisco whose chamber of commerce owns its own building. Cost \$25,000.00.
Three daily newspapers. Board of trade just organized. Best possible location for perfect sewerage.
The lowest death rate of any portion of the United States.

The terminus now of over two thousand miles of railroad. Inside of five years will probably be the terminus of seven thousand five hundred miles of railroad.

Eight Hundred Miles Nearer Japan than San Francisco.

Oriental trade already established. Consignments of tea from Yokohama have reached New York via Tacoma and the Northern Pacific railroad six days quicker than by San Francisco and the Central Pacific.
The natural supply depot for Eastern Washington, Oregon and Idaho,
The port from which will be shipped the bulk of the wheat crop of the Columbia river basin, the surplus for which, in 1886, was ten million bushels, and for 1887 is reliably estimated to be twelve million bushels.

The only coke works north of San Francisco are located near Tacoma, and owned by Tacoma capitalists.

Located in the heart of a region abounding in coal, iron, lime, wood, water, lead and copper—all materials convenient and accessible—and therefore

The Best Point on the Coast for Manufacturing Purposes.

Shipping facilities perfect—by rail, over the Northern Pacific and Canadian Pacific, to the East, or by Puget sound, open three hundred and sixty-five days of the year without reef or rock, to the Pacific ocean, and thus to the world.

Sites for factories on the water front furnished to those who agree to establish industries proportionate in value to the realty donated.

Real estate is cheaper here than in cities without half the prospects that Tacoma enjoys.

Judicious investments made in Tacoma now will pay as well as investments made in Denver, Minneapolis or Chicago when those cities were no larger than this city is now.

Maps of Washington territory and the city of Tacoma, with full, illustrated, descriptive and statistical information of Western Washington, can be obtained by new-comers who apply at my office.

Eastern people visiting Tacoma are requested to call at my office and see specimens of grains and grasses produced on our valley and upland soils. Call on or write to

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Real Estate and Loan Broker, TACOMA, W. T.
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General Engravers on Wood, Stone and Metal, and Manufacturers of Fine Stationery for Merchants, Banks and Manufacturers. Only House in the Northwest having facilities for doing Colored Catalogue Covers and Labels of every description.

Our color work is equal to the best Eastern, and at prices equally as low. This is the Largest and only Complete Establishment of the kind west of Chicago. Send for samples and estimates.

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For a better or more pleasant remedy for the cure of Consumption, Coughs, Asthma, Whooping Cough, Bronchial Troubles and Cramp than **SANTA ABIE**, the **ABIE-TINE** and **MOUNTAIN BALM COUGH CURE**. Not a secret compound. A complete mixture without the addition of any powders. Pleasant to the taste.



CAT-R-CURE,

THE ONLY GUARANTEED CURE.

FOR CATARRH, COLD IN THE HEAD, HAY FEVER, Rose Cold, Catarrhal Deafness and Sore Eyes. Restores the senses of taste and smell, removes bad taste and unpleasant breath, resulting from Catarrh. Easy and pleasant to use. Follow directions and a cure is warranted by all druggists. Send for circular to **ABIE-TINE MEDICAL CO., Oroville, Cal.** Six months' treatment, for \$1; sent by mail for \$1.10. For sale by all Druggists.

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Accommodations Unsurpassed for Comfort and Safety. Fares and freights via Yaquina and the Oregon Development Co's Steamships, Much Less than by any other route between all

points in the Willamette Valley and San Francisco.

DAILY PASSENGER TRAINS,

[Except Sundays]

Leave Yaquina... 6.20 a.m.	Leave Albany... 12.40 p.m.
Arrive Corvallis... 10.38 "	Arrive Corvallis... 1.22 "
Arrive Albany... 11.20 "	Arrive Yaquina... 5.45 "

Oregon & California trains connect at Albany and Corvallis.

Fares—Between Corvallis and San Francisco, Rail and cabin, \$14.00; Rail and Steerage, \$9.88. Between Albany and San Francisco, Rail and Cabin, \$14.45; Rail and Steerage, \$10.33. C. C. HOAG, U.S. Agent, Corvallis, Or.

W.M. HOAG, Gen. Manager. Act. G. F. & P. Art., Corvallis, Or.

Oregon Development Co.

First Class Steamship Line between Yaquina and San Francisco, connecting at Yaquina with trains of Oregon Pacific Railroad.

SAILING DATES:

FROM YAQUINA.	FROM SAN FRANCISCO.
Will'te Valley..Mon. Apr. 4	Yaquina City..Sat. Apr. 2
Yaquina City..Fri. " 8	Will'te Valley..Sat. " 9
Will'te Valley..Thu. " 14	Yaquina City..Wed. " 13
Yaquina City..Wed. " 20	Will'te Valley..Wed. " 20
Will'te Valley..Mon. " 25	Yaquina City..Wed. " 27
Yaquina City..Tues. May 3	Will'te Valley..Wed. May 4
Will'te Valley.. " 8	Yaquina City.. " 11
Yaquina City.. " 14	Will'te Valley.. " 17

The company reserves the right to change steamers or sailing dates.

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To Mr. W. W. Wisdom
 The "Robertine" is excellent. It is
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