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OREGON-INDIAN TRAINING SCHOOL.CHEMAWA.

THE WEST SHORE.

THIRTEENTH YEAR.

JANUARY, 1887.

NUMBER 1.

THE INDIAN SCHOOL AT CHEMAWA.



FOR nearly a century the government of the United States has pursued a policy in regard to the aboriginal inhabitants of this country so unphilosophical in principle and so unjust in practice that this period has been very aptly characterized, by a gifted writer, as "a century of dishonor." While it has considered them as mentally unable to take care of themselves and unfitted for citizenship, the government has, on the other hand, dealt with them as responsible business men, and has not scrupled to take advantage of that very ignorance which it recognizes as a reason for according them special governmental tutelage. The official position in this respect is an anomalous one, and has resulted in the expenditure of much treasure and the loss of many precious lives.

As a fundamental principle the government has recognized the tribal ownership of lands, and, in pursuance of this, has negotiated with the various tribes, from time to time, for the acquisition of their titles. Commissioners representing the government have made treaties with numerous tribes, by which the Indian title to the lands over which those tribes have roamed for generations has been "extinguished," with the exception, usually, of a large tract which has been reserved for their occupancy in common. In these negotiations the Indians have been outrageously cheated. Millions of acres have been purchased for a consideration so ridiculously inadequate as to amount to almost no consideration. Promises have been made that have not been, and could not be, fulfilled, and there is scarcely a tribe that does not feel it has been most egregiously cheated. The Indians have been educated to the belief that they owned the country, and, as a natural consequence, they look upon the sharp practice by which they were inveigled into parting with their birthright, as little less than robbery. This, and the reservation system, has brought them into the same frame of mind toward the government that the tramp and anarchist possess toward the world—that it "owes them a living." In this it is impossible to say they are not, in a measure, justified. It is the logical result of our policy in deal-

ing with them, and until this policy is changed we can hope for nothing better, and may certainly look for much that is worse.

The principle of tribal ownership is a wrong one, and is unique in the history of nations. The Anglo-Saxon race occupies this continent by the long-recognized right of conquest. This is as much a fact as though we had first landed on these shores with an army of invasion. We have taken the land and converted it to our own use, because we are the stronger in numbers, in intellectual power, and in all those forces which enable one race to dominate another. That we have made treaties with these people and have purchased their title for a consideration ridiculously small in comparison with the value of the land conveyed, does not lessen the force of this fact. We have displaced them because they could not help themselves, as has been time and again demonstrated by the subjugation of several powerful combinations of warlike tribes, confederated for the purpose of resisting our encroachments. Our purchase of title has been more for the purpose of throwing a sop to our consciences, in the form of a legal technicality, than for any other reason.

The title of the Indians, as a people, to the land, as a whole, we acquired by the long-recognized law by which civilized and powerful nations have, by acts of colonization, taken possession of regions in all parts of the globe, occupied by barbarians too weak to offer effective resistance. Unjust as it may seem, in the abstract, it is in accord with that great rule of progression which has guided the human family in its development through the ages—the survival of the fittest, the supplanting of lower forms of life by higher. Our government recognized this when it treated with England for the location of a bound-

dary line, when it purchased Florida of Spain, Louisiana of France and Alaska of Russia. Here it should have stopped, and considered its title, as a government, ample and without a cloud. I do not mean that the natives should have been deprived of any of their rights and possessions, as individuals, but that as a political body they had been overthrown and superseded, and as such their entire rights had been absorbed by the new government. When California, in 1846-47, was wrested from Mexico, all the title of the government of that province at once vested in the United States, and that, too, without violence to the individual rights of property owners, who were confirmed in their titles to such lands as they then legally occupied. This is the principle which should have been applied from the first in dealing with the aborigines of this country. Their rights as individuals should have been respected, and as tribes ignored; and much that has reddened the annals of our frontier would have been avoided.

There was, to be sure, a marked difference between the status of the Mexican citizens of California, and the natives of America, which served to complicate the question. This consisted of the fact that the former had a regular system of land titles, while the latter did not recognize, or, at least, practice, the principle of individual ownership of the soil. The land was a common heritage from their ancestors, over any particular portion of which no Indian assumed the right to exercise special control. Such being the case, had the government ignored the tribal title, there would have been nothing left the native save his personal property. This fact, however, makes no difference in the general principle, as stated above, that individual rights only should have been recognized and protected by our government. After many long years of war,

the slaughter of thousands of innocent men, women and children, the expenditure of millions of money, the infliction of much cruel punishment and the perpetration of many acts of monumental injustice, we now find ourselves compelled to do what should have been our policy from the beginning—deal with the Indian as an individual. We must break up the tribal organization, give the Indians land in severalty, make them responsible to the law for their conduct and dependent upon their own exertions for a living, and educate them to become intelligent, industrious and harmless citizens. As a legitimate result of our old policy, we see the Indians herded together on reservations, shiftless and improvident, scorning labor, dependent on the government for support, and unactuated by the first impulse of a desire to improve their mental and social condition. Ostensibly for their benefit, great tracts of land, millions of acres in extent, are withheld from occupation by industrious settlers. Of this land they make no practical use, and much of it never feels the tread of an Indian's foot from one year's end to another. As a hunting ground, now that game has almost disappeared, it serves but little to add to their support, and of its soil they will make little use so long as they retain the idea that the government will, and must, support them. The reservation system is devoid of a single virtue to which it can appeal for support, but on the contrary, it stands, like a granite wall, across the pathway leading to the elevation of the Indian race.

The first step to be taken is the severance of tribal relations and the weakening of tribal influences, by the assignment of specific tracts of land to each individual, and the throwing open to settlement of all lands now included within the limits of reservations, not thus apportioned to the Indians. As the tribal title has been recognized so long, it is now too late to assume that it does not exist, and the Indians must be compensated for the land thus taken. The purchase money should be applied—honestly and intelligently—to the settlement of the individuals upon their respective tracts, and the supplying of them with necessary facilities and instruction for gaining a livelihood. This also includes their protection from the rapacity of soulless men, who would, if permitted, soon become the possessors of every acre of land allotted to the Indians, leaving them with nothing whatever to depend upon. The next step is the education of the children in the common branches taught in our public schools, and their instruction in the ordinary trades and in agriculture. It is of the utmost importance to instill into the Indian mind the idea that labor is honorable, that industry is commendable, and that to be a property owner and self-supporting is to occupy a much higher position than his present one—a roving and improvident idler. To do this, time will be required, for the natural impulses, rooted and grounded in a race for generations, are not easily supplanted. Much effort has been made in this direction, but the reservation system has almost completely nullified it. It is of little use to undertake to inculcate principles of industry in the minds of the young, when they see them constantly ignored and scorned by their elders. Even when children are removed to a distance, and given instruction in such schools as those at Chemawa, Carlisle, Lawrence, and other places, the effects of their training are quickly overcome by their contact with, and almost necessary participation in, the demoralizing methods of the reservation. Precept makes but slight headway when opposed by example. The matter of education on the reservation has been very

much abused. The reservations have been apportioned among the leading religious denominations, and, as a consequence, more attention has been paid to making Methodists, Presbyterians, Baptists and Catholics out of the Indians, than in rendering them self-respecting and self-dependent citizens. Schools should be undenominational, and industrial, rather than religious, in character. There is no question about the beneficial effects upon the education of the young the breaking up of the tribal and reservation system would have. With those great breeders of laziness and dependence abolished, the leaven of industry and personal independence brought home from the schools would have an opportunity to do its work. Undoubtedly, the schools which have done the most good, are those which the government has established at various places remote from tribal and reservation influences. There the pupil has both precept and example constantly before him, and thus he makes vastly greater progress than when surrounded by all the conflicting influences of aboriginal life on the reservation. He returns to his home better educated and more thoroughly impregnated with ideas of industry and manly independence than is possible to any graduate of a reservation school. The crying shame is that he is at once subjected to those demoralizing influences, and degenerating mode of life. With these influences removed, with the Indians located on separate tracts of land, and with good industrial schools, such as is described below, the Indian question may be considered settled, so far as placing the race on the true highway of progress is concerned. The question of giving them the elective franchise and admitting them to the full privileges and responsibilities of citizenship, is one to which no definite answer is now required.

The Indian Industrial School at Chemawa, Oregon, is an institution supported entirely by the government, and, although a large sum of money has been expended, the results accomplished are so highly gratifying and have such a noticeable effect upon the tribes throughout which its influence extends, that it would be difficult to find an individual at all acquainted with them who would not say the money has been well expended. Such was not the opinion when the institution had its inception seven years ago. At that time it experienced much bitter opposition, but its work has effectually silenced the tongue of every opponent. On the twenty-fifth day of February, 1880, Capt. M. C. Wilkinson, an enthusiast on the subject, who had been detailed from the army for the purpose, established a school under the auspices of the government, at Forest Grove, in the Willamette valley, twenty-five miles from Portland. He began with fourteen boys and four girls, all from the Pualup reservation. To this number has been added from time to time, until now there is an average attendance of two hundred, representing tribes from California to Alaska and from Oregon to Montana.

For six years the school flourished and grew in size and influence, until the old structures at Forest Grove were destroyed by fire in 1885. It was then decided to place it on a better foundation and better equip it for the work it had proved itself capable of performing. A tract of land was purchased five miles north of Salem, on the shores of Lake LaBish, a favorite resort of the valley Indians in days gone by. This locality was known as "Chemawa," meaning "old home," and this name, pleasing in both sound and sentiment, was bestowed upon the collection of small, rude shake houses built and occupied while the new buildings were in progress of erection.

In November, 1885, school was opened at Chemawa, with the new superintendent, Col. John Lee, in charge. The grounds were a wilderness of forest and brush, but the boys went bravely to work upon them, clearing a site for the buildings and for a campus, as well as a field for cultivation. By the expenditure of more labor than one not familiar with such work can appreciate, they have succeeded in clearing about forty of the one hundred and seventy-one acres constituting the plat. More than this they have accomplished. By labor for others, chiefly in the hop fields, they have earned considerable money, which has been placed to the credit of the school as a whole. Out of this fund they have purchased an adjoining tract of eighty-five acres, at a cost of \$1,500, and presented it to the government in trust for the school.

The new buildings were completed in April, 1886, at a cost of \$17,500.00, and consist of a two-story school room and chapel, a two-story dormitory, dining room and kitchen, occupied by the girls, a two-story dormitory and sitting room for the boys, an office and a store room, all heated by steam. There were also constructed a well and elevated reservoir, into which water is pumped for gravity distribution throughout the various buildings and the grounds. As soon as these were ready for occupancy, the school, which had been maintained, partly in the crude structures at Chemawa and partly in some old buildings at Forest Grove, was consolidated in the new structures, and for the first time in its history was equipped for satisfactory work. In the *Indian Citizen*, a small, four-page paper, published monthly at fifty cents a year, edited and printed solely by pupils, the contrast between the old and the new surroundings is thus described:

Then we were living in old "shanties," built

by the boys. Looking at these buildings now, we are ashamed to shelter stock in them, and want a new barn. A year ago school was being taught in the building now occupied as a stable for horses. There we had no bed rooms, but were huddled together in dark, cold lofts, with the snow drifting in upon us. Now we have nice, clean bed rooms, with new furniture. A year ago we had less than \$50.00 belonging to the children. Now we have over \$1,600.00 in cash in the bank, earned by our own hands. Our land is very hard to clear. We want some fields, so we can raise wheat, oats, corn, hay and hops. We hope the government will buy us more land, but if it is too poor we will try to buy it ourselves, as we can not make an improved farm out of this wilderness for the next six or eight years. If we had the land we could earn plenty of money and become independent, just as white people are; and we speak for every Indian boy and girl at Chemawa when we say we will not always depend upon the government for our bread and butter. We will earn it ourselves, by our own hands, as soon as our education is complete.

The above extract from the *Citizen* is given, less for the purpose of showing the contrast alluded to, than with a view of drawing attention to the spirit of self-reliance and manly ambition which is observable in every line. It is a pity such principles once instilled into the minds of these youths should be subjected to the extinguishing influences of reservation life.

Plans have been drawn for a number of necessary buildings, chiefly for industrial instruction, which will be erected early in the spring. These will consist of a carpenter shop, shoe shop, blacksmith and wagon shop, laundry, hospital, bath house and stable, and will cost about \$11,000.00. At present the laundry occupies an old structure unprovided with conveniences; the sewing room and tailor shop are in contracted quarters needed for other purposes, and the other shops occupy some of the miserable shake buildings formerly used for the school, located some distance from the new buildings, and now designated as "Old Chemawa." When these new

buildings shall have been completed, the institution will present a most imposing appearance, as is shown in the large engraving on page one. The large building in the center is the school and chapel, that on the right the girls' dormitory, and that on the left the building devoted to the boys. The others are the office, store house, shops, laundry, and engine house. The Oregon & California railroad passes through the front of the grounds, Chemawa being a regular station on its line. At present mail is delivered by special arrangement from Salem, but no doubt a post office will soon be established there by the government.

It is wonderful what progress the Indian children make in the five years they are permitted to remain in the institution. It must be borne in mind, that, as a rule, they can not speak English when they first enter the school. In this way they are at a disadvantage, equivalent to at least a year's time, as compared with white pupils. Nothing but English is spoken at the institution, and conversation in Indian tongues and the ubiquitous Chinook jargon is interdicted. The pupils are given English names upon entering the school. These regulations naturally render the first few months far from pleasant, and if such violent homesickness as shall lead to desertion ensues, the children can scarcely be blamed. The result in the end, however, is good, as the children more quickly learn to speak the English tongue, and thus the sooner become reconciled to their altered mode of life and in a condition of mind fitting them for the reception of instruction, and for rapid progress in their studies and industrial pursuits. The school is divided into two grades and four classes, the pupils ranging in age between five and twenty-five years. Half of each grade is in the school room in the forenoon, and the other half in the afternoon.

The half not attending school is employed in the shops, laundry, kitchen and on the farm. There is thus a daily division of labor and study, with ample time given to all for recreation. Four teachers are employed, two for each grade.

In assigning places in the shops much is left to the inclination of the pupil, and if, after he has worked some time at a trade, it becomes evident that he is not fitted for it, he is changed to some other. Owing to the fact that only such things are manufactured as are used in the institution, there is not, as yet, an opportunity to teach every pupil a special trade. In consequence, the majority of the boys are given employment on the farm and about the grounds. Agriculture is, in the main, the most serviceable thing they can learn, and it is to be regretted that a more extensive farm is not provided for their cultivation. The pupils make all the shoes and boots worn by the two hundred children, do all the blacksmithing and iron work, all the carpenter work needed about the place—except, of course, the buildings, which are erected by contract—make all the clothing for both boys and girls, as well as the bed clothing, do all the laundry work and cooking, make all the improvements about the grounds and farms. The girls are taught laundrying, cooking, sewing and housework in rotation, being changed from one class of employment to another every six months. When they graduate they are fully competent to preside over a house of their own. As a sample of what they accomplish it will be interesting to learn that in eleven months eight girls, working half a day, equal to the daily work of four girls, made two thousand and ninety-six pieces of clothing and bedding. Some of them are capable of doing all kinds of cutting and fitting.

The Indian children of both sexes display a natural aptitude for music. The girls are given instruction on both the piano and organ, as well as in vocal music, and many of them become quite skillful performers and pleasing singers. The music furnished by them at their graduating exercises, last June, was not inferior to that given by the scholars of an average white school upon similar occasions. The boys have a band of sixteen pieces, and execute a large number of selections in a very creditable manner. Love of music is one of the most elevating influences that can be brought to bear upon the human soul, and there can be no doubt that the culture of this humanizing instinct will do much to sustain these avant-couriers of Indian civilization, in the hard struggle against the degenerating influences by which they will be environed after leaving the protecting care of their friends at Chemawa.

The management of the school is excellent, and has been reduced to a simple and most satisfactory system, by the superintendent, Col. Lee, and his wife, the matron. In the October number of the *Citizen*, the routine of duty is simply, but succinctly, stated, as follows:

The machinery of this school has been set in motion for another year. It runs just like clock works. We get up every morning at 5.00 o'clock, prepare our toilet, make our beds and clean our rooms, and at 5.30 answer the roll call. At 6.00 o'clock we go to breakfast. At 7.00 o'clock we have chapel; after chapel all go to work, on the farm, in the carpenter shop, shoe shop, blacksmith shop, harness shop, tailor shop, tin shop, laundry, sewing room, kitchen, dining room or some place else. From 9.00 o'clock until 12.00 o'clock half of us are in the school room. At 12.00 o'clock we all meet in the dining room. At 1.00 p. m., those who spent the morning in the school room go to the farm, the work shop, etc. Those who worked during the morning go to the school room. At 4.00 p. m. school is out. At 5.00 we have supper. From 5.30 to 6.00 we drill. At 7.00 we all march to the school rooms to get our lessons for the next day. At 8.40 the

retiring bell rings, all lights must go out and everything be quiet. This is repeated day after day, except on Wednesday evenings we have prayer meeting in the place of study hours. On Saturday afternoon we do not work, but we take a bath and are given clean clothes. On Sunday morning we "dress up," black our shoes and go to Sabbath school. In the afternoon, unless some of the city ministers come out to talk to us, we are allowed a half holiday, and take a walk. In the evening we have religious exercises in which all who wish are allowed to take part. The Indian boys and girls are always ready to do what they are told, and to do it the best they can. We are not well educated yet, and do not know how to work well, but in the near future we hope to become a credit to ourselves, our country and our people.

The discipline of the institution, so far as the conduct of the boys is concerned, is in the hands of D. E. Brewer, a graduate, who has unrestricted control. It would be difficult to conceive of an institution where better order is preserved than Mr. Brewer succeeds in maintaining at Chemawa. The officers and employes at Chemawa are as follows: Col. John Lee, superintendent; H. H. Booth, clerk; Laurence M. Hensel, M. D., physician; Joseph A. Sellwood, principal teacher; Mrs. E. B. Hensel, teacher; W. F. Weatherford, teacher; Miss Leona Willis, teacher and instructor in music; Mrs. Letitia M. Lee, matron; Miss Elsie Murphy, assistant matron; John Gray, carpenter; W. H. Utter, tailor; Samuel A. Walker, shoemaker; W. S. Hudson, blacksmith; Wm. L. Bright, farmer; U. G. Savage, gardner; Luther Myers, engineer and tinsmith; D. E. Brewer, disciplinarian; Mrs. E. Hudson, laundress; Mrs. Fiducia F. Howell, cook; Mrs. K. L. Brewer, assistant cook. The following Indian boys have special duties to perform: Alexander Duncan, issue clerk; Philip Jones, laundry help; Sam'l Shelton, butcher; James Maxwell, hospital steward; Henry Steve, head printer; Walter Burwell, head baker. There are also nine cadet sergeants.

There are in attendance, at the pres-

ent time, seventy girls and one hundred and eleven boys, representing twenty-nine tribes. There are twenty-nine Nez Perce Indians, from Idaho; eight Umatilla and twenty Wasco, from Eastern Oregon; twenty-six Yakima, from Eastern Washington; fifteen Puyallup and eleven Snohomish, from Western Washington; three Sitka and five Stickeen, from Alaska; five Clatsop, from near the mouth of the Columbia river; three Santiam and two Calipooia, from the Willamette valley; nine Klamath, seven Rogue river and one Modoc, from Southern Oregon; eight Piute, from Nevada, Idaho and Oregon; two Crow, from Montana, and from one to four of the widely-scattered Warm Springs, Spokane, Clallam, Skokomish, Neah Bay, Tootoo-

nia, Chehalis, Shasta Costa, Tenino, Snake and Chippeway tribes. A class of nineteen graduated last June, and a much larger one will complete the course at the end of the present school year. The influence these graduates must exert upon their friends and relatives on their return to their former homes, can not but be highly beneficial in its effect upon the relations between the two races. Were the way paved for the better working of this influence, by the dispersion of the tribal congregations and location of the various families upon separate tracts of land, then those engaged in the noble work of bringing this race into the light of civilization, would feel that their labors were not in vain.

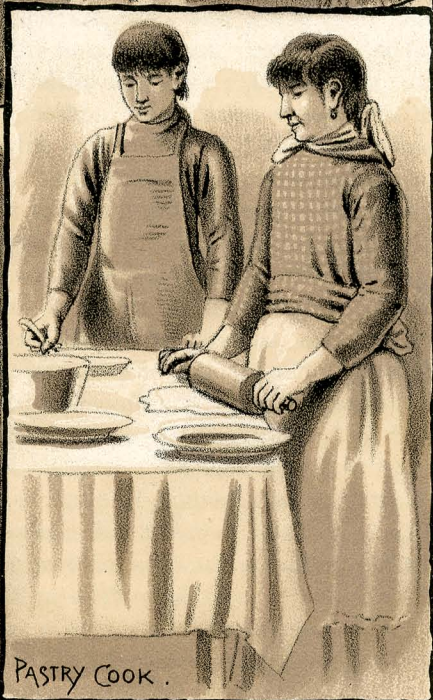
H. L. WELLS.

SMALL FARMING IN OREGON.

A CAREFUL examination of the records of the State Board of Immigration, the statements of bankers and business men throughout the state, in reply to the inquiries of a circular letter issued by the Immigration Commissioners, and the account of sales of farming properties during the past two years, are all evidence in support of the statement that the average sum of money brought to this region by heads of families, among new-comers, is not much over two thousand dollars. Additional and intimate acquaintance with this matter presents the fact, that the larger sums of money brought into the state by immigrants, during the time in question, and which have contributed so greatly in making the general average so high, were in the possession of those coming to find locations in towns or cities. It is highly probable that the average sum in the hands of those who

have come to farm, and have located by purchase or entry, is not over the sum of two thousand dollars; that is, they have that sum for investment, and, of course, a few hundred dollars for the purchase of stock, implements, etc. During the past year, about ninety per cent. of the immigration has been of this character. It has been made up of practical farmers, married, under the age of thirty-eight years, and from the Northwestern states, east of the Rockies. It is, in every way, desirable as additions to the population of the state, and most cordially welcomed. Indeed, with reference to the present condition of agriculture and manufacture in this state, it is more desirable than wealth that is to lie idle and insensible in bank vaults, or simply farmed out.

These facts are presented as partially introductory to what it is desirable to say, here, about small farming in Ore-



OREGON.—INDIAN TRAINING SCHOOL, CHEMAWA.

gon. However true it may be that the farming population is one very hard to clear of old and well settled prejudices, it is just as true that small farming, or farming on a smaller scale than heretofore, is the inevitable for this state; the logic of the march of events. A large proportion of those holding large tracts of farming lands in this state, partly obtained under the donation law, and partly the legitimate accumulation of the years since, have become convinced of the fact, and have evinced a disposition to divide up, or sell small tracts to newcomers. Of course, other things have operated to bring about this change. Those who were the recipients of the donation land, and who are still living, have grown too old to manage such an estate; and an examination will show that, largely, the children of this class of early settlers have drifted away from the farm. Again, debt has gathered over against the holding. These are some of the compelling conditions of the change. Not for an instant, does anyone entertain the thought that any other than compelling, or selfish, motives would have made it. But it has come about; the figures given here show that the small-farming class is immigrating to Oregon. And there is every reason for thinking that, on this account, our state has entered upon a permanently progressive and prosperous condition.

There are tenable arguments enough in favor of this reform in farming in this state. If we look over the common country, we find that of all agricultural people, those are the most independent in the states where the farming lands are held in the smallest tracts. In this state, it is the large land holder or grain grower, who is most crippled by debt. Such men are growing poorer year by year. Half the time, this man's crops are anticipated by a mortgage to cover a grocery bill. If he gets enough at the

end of the season to square up, he is forced to begin again for another year. The man with a small place, on which he is always raising something for the market, either that which comes to his door in the shape of a butcher, or a poultry buyer, or the wants of the dealers in town, always has money in hand with which to buy goods, to get them where they are cheapest. This man does not have to keep a long-range field glass in order to watch the progress of things at the other end of his ranch, but he has a neat, thrifty, well-cultured, paying place of twenty or thirty or fifty acres, and is out of debt and making money; slowly, it may be, but making it all the same.

The assertion that our cities and towns do not have population enough to make this small and diversified farming profitable, is the veriest nonsense. What is such a statement worth in face of the fact that, for the last two or three years, we have been sending upwards of a million dollars a year to California for fruit and dairy products. Out in this splendid valley, rich in all that pertains to agriculture, men who count their acres by the hundreds and thousands are eating California butter. It is a pretty safe proposition, that these same men are paying heavy interest bills on mortgages. And so it is an encouraging sign that the immigration now coming is in search of small farms, and that so many of our large landholders show a disposition to divide up these immense properties, for it is obvious, certainly, to any person who has traveled about the state sufficiently to note the make-shift farming, the sprawling unthrift of fields and orchards, the lack of pride in the appearance of homes, that agricultural reform is the greatest need of Oregon. Not only do we want something of that eastern system of farming, that results from a population trained and educated up to the highest standard of generous

thrift and industry, better plowing, better drainage, better stock, better poultry, better fruit, better vegetables; but, also, that which makes the dreary isolation of the country home impossible; that creates, in the young people especially, a bright, cheery, happy, inviting social and educational condition. That is the meaning of the incoming immigration, and every right-thinking man will welcome the prospect.

In spite of all this customary talk about the drawbacks, here in Oregon, to this system of farming, it is very apparent that the man who has from sixty to eighty acres of land in the farming districts of this state, and who, after the thrifty, enterprising, industrious manner of the eastern farmer, cultivates his ground, has fruits of the best, vegetables of the best, keeps poultry for eggs and food, has a little stock, some grain, bees and berries, in a word, makes every rod of soil yield him money as a purchasing power, will not only live more comfortably, but, at the end of ten years, will actually be worth more, and own a more valuable place, than does his neighbor with a thousand-acre wheat field. In the beginning, he will have required much less capital, and have run a proportionally smaller risk. In this state, the drawbacks, as compared to the incentives to agricultural reform, are nothing. There are thousands of acres of desirable land in Oregon available to the small farmer, with a sufficient variety of location. In the region lying between Ashland and the Calipooia spur, the lands are not, perhaps, as suitable for grains and grasses as they are for fruits, vegetables, nuts, and the like; but it is precisely the soil required for these things, and, at the same time, produces fair crops of cereals, and especially corn. Land in the vicinity of the railway and the towns can be bought in small, improved tracts for twenty or twenty-five dollars an acre, and

unimproved railway and private property for half that sum. In the valley of the Willamette, on either side of the river, is an immense stretch of fertile country, having superior climatic conditions, and producing bountiful crops almost throughout its extent. No irrigation is required, and, in every way, it is fitted to the demands of the small farmer. It is, indeed, a part of the state in which everything necessary to make life agreeable, can be more rapidly and more easily secured than elsewhere in our domain. Poverty will not press heavily, nor long remain a wearing companion in this region, for the simple reason that land in such blocks as the poor man needs, can be had, in the foot-hill region of this section, without a great amount of money, and for the additional reason that, with a willingness to forego, on commencing, everything not absolutely necessary, it will, the first season, produce nearly all the food a family can need, by the simple labor of a man, aided by wife or child; and there are few districts, however removed from population centers, where a poor man cannot, from time to time, earn a little money for necessities, which cannot, at first, be grown, either by labor for neighbors or by wood cutting and hauling, in clearing his own land. This will be best illustrated by giving here an actual case. In the latter part of August, 1885, a man of about thirty-six years of age, a farmer, from Ohio, accompanied by his wife and two children, the eldest a boy of thirteen years, came into the immigration rooms, and stated that he had come to locate; wanted information about a small place, that he could farm to advantage. In the course of a day or two, he made a choice of territory, and started in search of his home. He returned in October, 1886, and, after talking over his work for the past year or more, and asking for immigration literature for his friends "back

east," he promised that, when he got home, he would write out his experience. I put it into the following shape: "Had cash in hand, \$652.75; bought thirty-five acres of land, three miles from railway, for \$11 an acre; \$200 cash, balance on time; two years, at ten per cent. interest. The land was ready for cultivation, except six acres, timber and brush. I built a fair box house for \$215; team and harness cost \$260; paid \$150 down, and balance on time. Bought one cow and calf and two pigs, at a cost of \$56. After buying a little food, seed grain, garden seeds, etc., my money was almost gone. In the month of September, I worked thirteen days for a neighbor, for which he paid me \$30, half the amount in such things as I needed for my family table, a few chickens, fruit trees and a sheep. Balance of month, worked my own place, garden and fields, getting ready for the season of 1886. During the winter season, and up to April 1st, I worked eighty-six days, for which I received \$114.50. The balance of the time I was working about home. I then planted my crop, only reserving a six-acre pasture lot for my team and cow and sheep. After my own crop was in, took my team and worked for my neighbors, for which I received in all about \$25. After my own harvest, I worked away from home, and saved up about \$65 during the balance of the first year. Here is a recapitulation of that year:

Cash.....	\$652 75
Payment on Land.....	200 00
House.....	215 00
Team.....	150 00
Cow, Calf, Sheep, Pigs.....	56 00
	<hr/>
DEBTS.	\$621 00

On Land.....	\$185 00
Team.....	110 00
Interest.....	40 00
	<hr/>
	\$335 00

CONTRA.

Labor, Sept.....	\$ 30 00
" winter.....	114 50
" spring.....	25 00
" harvest.....	65 00
Crop in garden.....	9 80
Eggs.....	4 50
Butter.....	11 50
Oats, from eight acres.....	66 00
Wheat.....	93 00
	<hr/>
	\$419 30
In acct. paid debts.....	335 00
	<hr/>
Balance in hand.....	\$84 30

"During this year, I planted about one and a half acres of orchard, mixed fruits; I have small berries growing in every nook and corner, and I have increased such of my poultry and stock as my wife and boy can take care of during my absence from home."

In a close enterprise like this, care must, of course, be taken of trifles; everything being made to count. This case illustrates what can be done by an industrious, thrifty, small farmer. It can be done in a thousand places in southern, western and eastern Oregon. It is not a matter of geography. It is a matter of pluck, of grit, of self-denial on commencing. If a man lacks that—and so many new-comers do—it means their drawing back and going away from just such good results as we have presented. At the end of three or four years, when this man's orchard has commenced to bear, and his stock has increased, his poultry yard filled up, and the rate of yield of his soil increased under the influence of his methods of farming, he will, without any outside labor, during the last year of the four, from settlement, have an annual income of about \$500.00, everything all paid up, and his house and outbuildings greatly enlarged. Paying cash for what he buys at the store; giving of his substance toward the

support of schools, churches, and things of that nature; mentally alert to the best for his community in a social sense; giving time and money and presence to obligations as a citizen, he is a valuable accession to the population. His class will, ere long, become the mainstay of this state. There was nothing exceptionally good in the conditions of this man's location, or which may not be duplicated a thousand times in all portions of the state.

Another and a different case may be of interest here. A gentleman owning eighty acres in Michigan, grew tired of that climate, and, as well, desired to widen out his land holdings for the benefit of his family. He sold his farm for \$60 an acre, \$4,800.00; and his stock and personal property sold for \$860 more. After paying his debts and fare to this city, he had \$4,300. After searching a week, under the auspices of the state board, he bought an improved farm out in the valley, containing one hundred and sixty acres, together with household furniture, a team of horses, one colt, three cows, two calves, a small lot of hogs, a few sheep, some poultry, a fair supply of farming implements, for the sum of \$2,300.00, cash. His farm is within five miles of the railway, in a good neighborhood, close to school and church, and, as he says, equally well situated in all these essentials, with the one in Michigan. He is in a superior climate, has escaped rigorous winters, is no longer obliged to spend his summer seasons in gathering food for stock, against the long feeding time of the old home; has a farm much more productive than the one he sold, and has \$2,000.00 in cash. He says he will purchase adjoining land—eighty acres—with half of that sum, and put the balance where it will be gathering a little to itself, and where he can lay his

hand on it, in case of urgent need. The object this man had in view, when he pulled up stakes in Michigan, he has attained. What he has thus accomplished, others have, and can accomplish in this state.

All along the foothills of the Cascade and Coast ranges, where the future grazing ground for Oregon's cattle is to be, are immense quantities of these cheap lands, which, if properly taken hold of by small farmers, and cropped appropriately, will be as desirable as any in the country. The assured immediate extension of railroads will bring these lands into ready connection with good markets. People who know Oregon thoroughly can see that these statements are true, and that the assertion to the contrary, by men who view land only to be worth consideration where large lots lie together, or value it according to the ease with which it can be cultivated, is grossly incorrect. Once under cultivation there are no better lands in the state. It may be said here that fifty acres of land are sufficient for wise and profitable working by the small farmer. All that we see of unsettled habits, comfortless living and careless tilling of so many of our great grain farmers, are evidences in favor of the small tract, in behalf of both the man and state. Fifty acres will comfortably support a farmer's family, and at the end of two or three years give him a very handsome income. The majority of immigrants come here with just enough means to start them in life in the humble way herein described. They can not afford to take land on time. If they are content to lay the foundation on fifty acres, and lay it deep, with carefully mapped out and worked plans, it will assure them a competency long before old age overtakes them.

C.

WILLAMETTE RIVER BRIDGE AT PORTLAND.

MORE than sixteen years ago, Stephen Maybell, then a young and untutored bard of some native genius, who resided in East Portland, ventured the prediction, that, among the early achievements of the progressive spirit of enterprise, a bridge would be constructed across the Willamette river, at Portland. This theme he duly celebrated in verse, and it has passed into the permanent literature of the vaporous land of Webfoot. Once upon a time, when suddenly seized with the glow and fervor of poetic inspiration, Mr. Maybell dashed off a poem, many lines in length, in which the prediction was breathed (in fact, it was repeated at the close of each stanza) that the romantic Willamette would be spanned by a bridge, and that we should all "see it yet." The opening verse ran in soft, mellifluous numbers, as follows :

Behind the pines had sunk the sun,
And darkness hung o'er Oregon,
When on the banks o' Willamette
A youth was seen to set and set,
And set and sing unto the moon
A wild, yet sweet, pathetic tune—
"They're going to build, I feel it, yet,
A bridge across the Willamette."

What once only existed in the dreams of the young bard's imagination, and took the shape and form of impassioned song, has now become, after the lapse of years, a palpable reality. In all truth, the doggerel, which, by common courtesy, may be dignified by the appellation of "poetry," was indited in a serio-comic style, and reads much more like a satire than a sincere prediction; nevertheless, the poet has, thoughtlessly or otherwise, written himself down a genuine proph-

et. After encountering almost numberless impediments, and waging a long, expensive legal warfare, the enterprise and determination of a few men of means have overcome every obstacle, and the project of constructing a bridge is now, virtually, an accomplished fact.

As these lines are being penned, the bridge, while not completed and ready for actual public service, is rapidly approaching the finishing strokes. Four of the spans are already in position, the roadway and walks on each side of the structure have been laid, and the other parts are being pushed toward an early completion. What principally remains to be accomplished, is the putting together and placing in position of the huge draw. It is thought that ten days will be required to complete this work, after all the necessary materials have arrived. The greater part of the draw is being manufactured in the East, and when the sections reach this city it will be a comparatively small task to put the work together. The material is expected to arrive about the twentieth of February. By the first of March, or during the early part of the month, at the very latest, the Morrison street bridge will be completed and ready for travel. This is the present expectation of the company, should no unforeseen obstacle arise. It is confidently believed that the application for an injunction, now pending before the United States court, will not result in any serious interference with the operations.

Column upon column has been written on the subject of the bridge which is so soon to span the Willamette river,

since the inception of the important enterprise. It is not with the purpose of giving a history of the original organization of the bridge company, or to enter into a discussion of the merits of the long, expensive and vexatious course of litigation which has followed the inauguration of the project, that this article has been written, but principally to furnish a plain and intelligible description of the bridge itself. The incorporated name of the company is "The Willamette Iron Bridge Company." The capital stock has been fixed at \$200,000.00. The officers of the company are William Beck, president and treasurer; C. F. Swigert, secretary; William Beck, Rufus Mallory, Charles Wiberg, C. F. Swigert and John W. Brazee, board of directors.

In connection with the work of building the bridge it is not out of place to state that operations have been, and still are, under the immediate charge of Mr. H. C. Campbell, who represents the contractors. Mr. Campbell has had long experience in the construction of various important bridges in the East, and is in every respect competent to handle an undertaking of such magnitude. Active operations were commenced about the first of September, 1886.

For several months a force of men was employed in quarrying stone, in the vicinity of Oswego, and another force engaged at Fisher's landing, on the Columbia, getting out dimension stone, of which the piers have been constructed. In building the spans, work was commenced, for convenience, at the eastern end. For each span, rows of piles were driven, temporarily, on which cross timbers were laid. These constituted the false work, and were merely to support the permanent spans until they could be securely braced and "keyed up." The false work was then torn away.

The best materials obtainable—wood,

stone, iron and steel—have been used in building the bridge, and the most experienced workmen employed in putting them together. The iron cylinders for the tubular piers were manufactured in Pittsburg, and the plates put together by Messrs. Trenkmann & Wolff, of this city. All the heavy castings were made by the Willamette Iron Works. Iron for the long spans was made in San Francisco. The entire structure was designed by the Pacific Bridge Company, of Portland, and is a splendid specimen of bridge architecture. The structure is what is known as the "Pratt Truss Bridge." It rests on seven piers, three of which are built of stone, the others being immense iron tubes, filled with stone and cement. Pier No. 1 stands one hundred and sixty feet east of the Morrison street wharf. The foundation consists of piles, strong timbers, stones and cribbage. Ninety-four large, sound, red fir piles were driven firmly into the bed of the river, and capped with square timbers twelve by fourteen inches, and cross-capped with timbers ten by twelve inches. Around these piles a strong cribwork of timber was built, the lower sides resting on the bed of the river, the space between the crib and piling being filled with stone. The tops of these piles have been sawed off at a point two and one-half feet below the lowest water mark, so that none of the timbers used in the foundation will ever be above the water line, or exposed to atmospheric influence. Repeated experiments have demonstrated that timber thus submerged will remain sound for an indefinite period. The dimensions of the wood work of this pier are, length, forty-four feet and four inches; width, thirteen feet. The masonry resting on this is thirty-two feet in length by nine feet in width, at the base, and rises to the floor of the bridge, thirty-five feet two and one-half inches above the lowest stage of water

in the river, at the foot of Stark street. This altitude brings the bridge seven feet above the highest point reached by the river of which there is any record. This pier is the rest for the west arm of the draw.

Pier No. 2 is the one on which will rest the entire weight of the draw. It has a foundation similar to the one described above, though larger, as greater strength is required. It is octagonal in shape, the outer portions being built of cut stone and the interior filled with concrete. The latter material is as hard as the stone itself and will last as long. This pier is twenty-four feet in diameter, and rises twenty-five feet from the foundation. Pier No. 3 has been constructed, in every essential respect, similar to No. 1, and the dimensions are the same. The foundation of pier No. 4 is similar to that of the first. From it rise two large iron tubular piers, each six feet in diameter, and filled with concrete. Both tubes are securely anchored to the foundation by a cluster of piles, which extend upward into the concrete some five or six feet. Heavy framework fills the space between the tubes. Piers Nos. 5 and 6 are duplicates of No. 4. Measuring from the extreme low stage of the river, the piers stand in the following depths of water: No. 1, sixty feet; No. 2, fifty-five feet; No. 3, forty feet; No. 4, thirteen feet; No. 5, between five and six feet; No. 6, five feet.

On the west end, the approach of the bridge is one hundred and sixty feet in length, reaching from the east line of Front street to the pier situated at the wharf line. The first span is one hundred and sixty feet in length, and consists of eight panels and the supporting timbers, which are twenty-six feet high. The full length of the draw span is three hundred and eight feet. This span is twenty-six feet high at each end and forty feet in the center. The huge struc-

ture consists of twenty-six panels, and is of the style known as the "Warren Girder." At the lowest stage of water, the exact distance between the masonry on each side of the center pier is one hundred and thirty-eight feet; at the highest recorded stage the distance is one hundred and thirty-five feet. On the large octagonal pier will be placed the turn-table, and on this the draw will be accurately balanced. The turn-table consists of thirty-two cast iron wheels, each fifteen inches in diameter. These wheels are cone-shaped and travel between two tracks — above and below. The draw can make a complete revolution, either to the right or left, and has been so geared that it can be operated by either steam or hand. The three spans east of the draw are each two hundred and sixty feet in length, and each consists of twelve panels. The ends are thirty-six feet high, and the centers forty-three feet. The roadway, is twenty feet in the clear, flanked on each side by a walk five feet wide for pedestrians. There will be ample room for laying two tracks for a street railway, without interfering with the travel of other vehicles. The floor beams, joists and flooring of the bridge are of wood, fastened securely together by a complicated system of iron bolts, rods and supports. On the east side the approach is two hundred and thirty-five feet long, extending from the last span to a junction with Water street, East Portland. The total length of the bridge, including approaches, is one thousand, six hundred and fifty feet. Without a doubt, it is the longest and most imposing structure of the kind west of the Rocky mountains. All the piers are well protected from the current and masses of driftwood. The pivotal pier is well shielded by the draw rest, and on the up-stream sides of the tubular piers clusters of "dolphin" piles are driven. The draw rest consists of a

wooden structure, built of piles, extending at right angles with the swing when it is closed. It is as long as the swing and as wide as the bridge. At the north and south ends it narrows to a sharp point. The piles are driven firmly into the bed of the river, but fastened somewhat loosely at the tops to allow them to give when a vessel comes in contact with them. Along each side of the rest heavy timbers will be fastened horizontally which will serve as fenders. While perfectly safe and permanent, the entire draw rest will be sufficiently yielding to break the force of any boats accidentally steered against it. With the protection afforded by the draw rest and the lines of swinging piles there is no more danger in passing through the draw than in steaming alongside a wharf.

Of the many and great public advantages which will, undoubtedly, accrue from the completion of this bridge, it seems scarcely necessary to write. It will afford the residents of East Portland and the extensive farming, gardening and dairying region beyond, an easy and convenient means of reaching this city. However commodious may be the boats, and however complete may be the appointments, a bridge is always vastly superior to any reasonable system or number of ferries. The inadequacy of ferry boats has been clearly demonstrated in the past. A bridge avoids all serious obstacles which interfere with the continuous operation of a ferry, and furnishes an almost uninterrupted passage to vehicles and pedestrians.

Portland will reap a rich, and constantly augmenting, harvest, in the increase of travel and trade, which will flow hitherward, following the natural gravitation of business. East Portland will be brought into closer relationship with the metropolis, and consequently, real estate and improvements in that city will become greatly enhanced in

value. Many persons engaged in business in Portland, will, no doubt, now become residents of our sister city. From any point of view—apart from the consideration that the structure must, necessarily, be more or less an obstruction to navigation—it must be seen that the construction of the bridge is highly beneficial to the natural growth and welfare of Multnomah county. It is the purpose of the company to lay a double street car track across the bridge, if satisfactory arrangements can be effected. Such an improvement would no doubt add a decided impetus to the material development of East Portland and the county. In this way a system of street railways could be introduced into that city, and operated in direct connection with the several lines in Portland, furnishing a rapid and convenient method of reaching localities too remote to be gained by walking, and would lead to the building of many suburban residences. It would also, probably, cause the purchase, laying out and beautifying of public grounds and parks, which would become popular places of resort on holidays.

From time to time during the past fifteen years, the question of consolidating the two municipalities has been agitated. By merging the municipal government of East Portland into that of this city, it is thought, by many tax payers, that greater public economy would be secured, and the proposition has met with considerable favor among property owners. The completion of the bridge will most certainly bring the two cities nearer together by strong ties of mutual interest, and who can tell but that it will act as a very important factor in solving the question of consolidation? Surely, if the project were a feasible one before the completion of the structure, it is much more so now.

J. M. BALTIMORE.



OREGON.—INDIAN TRAINING SCHOOL, CHEMAWA.

PULPITS AND PULPITEERS.

THERE has been a great deal said and written, of late, on the subject of preachers and preaching. The most of it has come from the laity; and it is a good source, for, as a class, those who sit in the pews are quite capable of imparting not only new, but valuable, information respecting the pulpit and the pulpiter. Almost everyone will admit that, with the marked change which has come over quite all of the different features of our social life, there has been a shifting of the pew and pulpit relations. Influences, visible enough, have told powerfully on the position which the pulpit heretofore enjoyed. It must be admitted that the minister no longer occupies the intellectual vantage ground he did a quarter of a century ago. A diffusion of education among the laity has divested the clergy of the great bulk of the former prestige, and the minister no longer enjoys an immunity from literary criticism. Again, we have a perfect flood of cheap, and, at the same time, valuable, literature entering and becoming a part of the home, and the freest discussion of the most sacred truths is carried on in periodicals of the highest character and widest circulation. But, for years, there has been an ever-widening intellectual difference between the minister and the pew holder. The laity are able now, as they were not in the past, not only to give a reason for the faith that is in them, but to require a reason for the faith that is taught them. Indeed, so immense has been the progress of scripture exegesis, as well as general knowledge, and so thorough has been the scrutiny of the Bible, that a silent revolution has been effected in the minds of the masses throughout the English-speaking world. Hence is it, that the same style of literal preaching, common enough twenty or twenty-five years ago, is no longer possible, unless both minister and congregation are quite behind the age. To put the matter squarely and honestly, the day has come when it is an earnest feeling of all christian people, that the moral sense, awakened by a closer, more human application of the gospel, is the interpreter of the scriptures. But, besides this diffusion of knowledge, which has given us moderns a new, and, undoubtedly, a better, understanding of the scriptures, both in their historical and religious sense, there has been a transition of thought, in relation to religion itself, going on in the minds of the people of every rank in the civilized world. If the pre-scientific times were the ages of faith, this of to-day is unquestionably the age of inquiry. All, young and old, are athirst for truth, and for that personal consciousness which carries conviction. What was true when spoken grandly by the prophets, and by the evangelists of old, is not less true to-day; but the people are asking that evidence of it be given with the assertion. People do not want the mere conventional statement, set forth in tawdry rhetoric. They demand that the pulpiter shall be qualified to go back of this conventional view of these religious subjects, to where he shall be able to find, for his hearers, the real spiritual meaning. In this day, creeds amount to very little. In their place, people want a common-sense, prac-

pulpit. These great men of the pulpit are not pulpiteers without a long course of labor and study at the foundation, after they have the consciousness of being called to the work. No more are they, than are doctors, and lawyers, and mechanics, made in that way. Possibly, without much study or training, a man calling himself a doctor, might administer soothing syrup, or perhaps paragogic, and without great danger, and a man, without any preparatory study for the ministry, might dose the people with the *Opii Tinct Camp* of the gospel, and not do them further harm than rendering them unduly sleepy; but let him undertake to make up a prescription from any of the complex ingredients of theology, and the patient will be ready for the coroner.

Perhaps the weakest reply attempted by our opponents, is that it would not do to have a smart, talented, cultured man in every pulpit. That sort of argument was used not long since by a Rev. D. D. in Oregon. As this gentleman is called upon in his church capacity, to preach to congregations throughout the country, small and large, in the city, in town and out in the backwoods, I wonder how, as a "smart," "educated," "talented" man, a D. D., he manages to escape the full force of his logic and protect the people of these different congregations. Make an application of that sort of argument in our schools, our newspaper offices, or our business houses, and the silliness of it is made very apparent. One of the most gifted and scholarly men in this country was Mr. Bryant, editor of the *New York Post*, and he did more to educate and train the minds of the great under-masses of men in his city, than anyone else, or any other element of education. Rev. Jas. Brooks, of St. Louis, and Rev. Dr. Palmer, of New Orleans, two of the eminent pulpiteers of the Presbyterian church of

this country, are noted for their ability to teach and train and educate in spiritual things, those who have no educational attainments. They have no trouble about preaching down to the level of the common mind. It is hardly worth while to give this feature any further attention. The idea that we must have a set of ordinary-minded ministers for ordinary-minded congregations, is silly.

When we think of the vast apparatus of the pulpit in this country, of the thousands of sermons preached every Sunday, of the immense resources in weekly operation for bringing the most important truths home to the minds and hearts of the people, and then note the apparent feebleness and indefiniteness, the moral and practical results, and how slowly the popular feeling is moved and elevated and christianized, we cannot escape the conviction that the pulpit and pulpiteer must be at fault. It is not a matter of surprise that this is attracting attention, or that it is a common picture, which represents scores of weary listeners in our churches, decorously submitting to the sermon, as becomes conventionality, and expressing a sigh of relief when it is ended. It is not a caricature; it is a real picture, and mournful enough when we think of the great subjects and ends which have brought preacher and congregation face to face. We find, and with sadness, that what, in its own nature, is so vitally interesting, what ought to be intensely and practically exciting, is listless, flat and unprofitable. There can be but one conclusion; defectiveness in the mode of preaching, leaving the speaker without power and the audience without benefit, a prosaical and platitudinal discussion of subjects, which, if treated in a sincere, inspiring way, would make the hearts of the hearers glow again.

It will not do to say that the value and importance of divine truth are independ-

ent of the character for success of the preacher, or that there are no sermons, however feeble and unimpressive in utterance, that are not calculated to do good, if only we would receive the good. To a certain extent, this last proposition may be true, but it is not true far enough to cover the defect in ministry. Nor can it be said that the great topic of christian instruction is less calculated than other topics to move the minds and feelings of man; for it is undeniable that there are none which can be made to tell more powerfully. In spite of man's natural insensibility to the truth, and the coldness of his common love for it, this truth, when rightly and earnestly presented, finds sources of interest, and stirs springs of emotion in him, which nothing else can possibly do. There is in it an attraction for his intellect, his imagination, and his heart, which the loftiest range of mere forensic or political oratory does not reach. However indifferent men may be to spiritual doctrine or spiritual duty, it does not account for the prevailing unimpressiveness of the average sermon. If this were true, then it would not be true that, with the very same materials to work upon, another kind of application of the same truths, by preaching, has proved immensely successful. There is a right and effective method of preaching, as of everything else. Where it is continuously dull and ineffective, one is warranted in saying that it is because of a chronic and insufferable weakness in the style, the manner and the general character of the minister.

Without attempting to explain fully what is wrong in the prevailing character of preaching, or suggesting the best means of improvement, it may be said that in this day of general intelligence, the power and influence of the preacher must, in ordinary cases, be proportionate to the elevation at which he stands above his hearers, in intellectual capacity and spiritual force and discernment. Such elevation is obviously very difficult. In a large number of pulpits in this country, the minister not only does not stand above the hearers, but does not even stand on a level with them as to most subjects of ordinary culture, while in regard to his special subject, he is wholly unequal to the task of bringing them anything of a fresh and informing character. Such a temper as this in the pulpit has a natural tendency to be dull, to do its weekly work with a listless formality, and the stereotyped impressions are positively repulsive and wearing to most people. There is nothing of warmth or light, or anything approaching a living root of interest in such sermons. A sermon that is destitute of any real elements of interest, which does not impress or hit an audience, can be of no practical benefit. After it is over, those who have given a languid, limping attention, may endeavor to recall something that was said, but in vain. Nothing was said worth recalling. Far worse is the man whose effort is to arouse the feeling of alarm. He does not understand that there is a great difference between stern and strong speaking, and that style of preaching which runs along on a high pitch of shrieking denunciations; what theatrical critics call ranting. It is to be doubted whether such a style as this can be made the instrument of any great religious awakening. Certainly this manner of preaching can never be a general means of moral elevation and acceptance. But even that is better and more appealing than the sensational style; generally, a very small mental and physical equipment, and a theme, that as completely hides the man, as it overwhelms his intellectual grasp, when he comes to meet it in the pulpit, instead of the newspaper. The whole object of this preacher, generally a loud-voiced

young man, is to draw a crowd, and cater to popularity. This sort of preacher manifests a tendency to pass into one, and that a very narrow type of dogmatic expression, and to indulge in intemperate and exaggerated, if not, indeed, coarse, language, strongly repulsive to many minds. And it is well to say here, that this feeling of repulsiveness does not come from any natural opposition to the gospel on the part of those who are too proud to receive it, but from people now in the churches. No man has any business in the pulpit, who, by intemperate or weak exaggerations, or vain repetitions, creates offense against the truth. This is not only far from the highest kind of preaching, but that which is certain to dishonor the cause for which preaching is done. It is not educative, it is not limited in its influence for evil, and it is wholly unwarranted, both by principle and fact. Men who preach in this way, are destitute of all the higher spiritual sensibilities, and imagine that the only truth is represented in the dogmatic crudities of a certain kind of theology. It is simply repulsive earnestness, and never comes near real, practical life, nor deepens the real love of the truth in the hearer.

The successful preacher is the persuasive preacher. And the persuasive preacher is the one having special adaptation, by study and natural ability, for the work of convincing the reason and intelligence of the hearer, of his need of gospel christianity. It is not mere loudness, either of voice or manner, that is persuasive, but it is the spirit of life; it is the hearty human feeling; it is the broad, manly earnestness; it is the fire, of divine conviction; it is the command of language that comes through long and patient study; it is the effect of oratory gained partly by study; it is by the study of the material within self as a guide to what will effect others; it is the knowl-

edge of human nature; it is the study of human events; it is the knowledge of what is going on about us; it is the making of all these subservient to the work in hand. Not long ago, a man from Iowa supplied a pulpit in this city, and before he had talked five minutes, said no one ought to spend more than ten or fifteen minutes reading the daily newspaper. The fact that this man, as a preacher, was as dry as a covered bridge; that he was dreary, commonplace and utterly uninteresting; and that he was looking for a pulpit, was not at all surprising. There is much more in what we call sidewalk wisdom than these old fossils imagine, and if they do not want to be laid up to season, they will have to make more pulpit use of the secular in the gospel and the Sermon on the Mount. I am not talking of picking up these things in a hap-hazard way, but of getting the practical and useful out of them by the accepted process of education and discipline and culture. In opposition to this, the Iowa man had a one-sided training, the training of the mere technical in education, and at the expense of an awakening of all the common sympathies and affections and interests of human nature. That is the narrow and conventional and partisan, which only enfeebles the mind. There cannot well be a more imperfect preparation for the great duties of the pulpit. Realizing that he has plunged into the duties of this office without an intelligent acquaintance with them, he resorts to the makeshifts of mannerism, affectation, sensationalism, literary strut. This is true in everything else. A man unfitted for a calling into which he goes, is certain to catch at all kinds of professional crutches and props. It is the common refuge and result of incapacity.

Take the man referred to, as an example. What we have stated of him furnishes a key to his character. He has

evidently gone into the pulpit with little professional culture, with less of that awakened energy of mind and feeling, and still less of a free and hearty experience of real, practical life, that higher spirit of sympathy. Certainly he has had little of what we call a wide and varied intercourse with his fellow creatures. His knowledge of human nature is limited. A man may sit housed up in his study and work hard upon the subject of human nature, and in the end know nothing of it. As a general thing, preachers live too much alone or in society of each other, and do not mingle with the common, ordinary world of business stress and strain, where human nature may be found unadulterated. If I had a son, and was fitting him for the ministry, I would give him a couple of years in actual business, in and out of doors, and as many more in a newspaper office as a reporter. I would do this that he might study individual character. A man can only do this successfully in the street, shop, store, bank, concert hall, lecture hall, political gathering, manufacturing establishment, physician's office, police court, docks, everywhere, open to the reporter of a first-class newspaper. Here is where men are in earnest about the battle of life; here is the eloquence of real life action and life passion. The talk in all this vast arena of business never gets into books or the tapestry-hung study of the pastor. If it does, its freshness is gone, and it no longer illustrates principles of thought and speech; it is no longer eloquent with life.

Perhaps our man may have what in the technical is known as knowledge of life, but it is only in that sense. He exhibits a lack of it in the deep and broad sense in which the words have their right meaning, knowledge of the common every day joys and sorrows of the human heart; the realities of an affectional nature; pas-

sion and interest; the loves and hopes and trials which make up the common lot. Take this knowledge and baptize it with the spirit of the Master, and all that is good, and you have a live, earnest, sympathetic, eloquent, sinewy man in the pulpit. Without it, you have either a dry stick or a sensational strut. Among other things, the best advice to young men preparing themselves for any course of life, has been for them to study men first, and then books. It is this that makes preaching an art of life, and takes it out of the domain of abstract science, into which dull preachers thrust it. Experience is the chief end of man, and it is through experience that men are to be convinced. A preacher without a study of men in the midst of their business haunts and their perplexities, is a learned ignoramus. A man has the dry rot on him who undertakes to preach about human nature as he has learned it from books. People want freshness as a characteristic of the sermon. They rightfully complain of sermons that are repetitions of the same commonplace. If the pulpiter is to be interesting, and in that way persuasive, he must be able to take even the most familiar topics of the gospel, every aspect of which may have been worn smooth by constant controversy, and invest them with a newness and feeling. If he can do this, he will make the hearer feel himself in personal contact with this new idea, this world of thought and feeling opened up to him. The gospel never grows old, but is just as applicable to the man of to-day as to the personal followers of the Man of Nazareth, but it must be presented to him as it was of old, by those wholly and thoroughly fitted for the work. The man who goes into the pulpit as a "soft place," a place where he can keep his hands white, and be clothed in purple and fine linen, or with the idea that it is novelty and not a fresh, cultured, earn-

est and candid presentation of the old truths of the gospel, need not be surprised that he fails, either to hold and interest an audience, or keep up the esteem and respect of christian people. He is likely to attribute his failure to every cause but just this, yet that does not alter the fact. The men who, as pulpiteers, have been most successful, studied the race more than they did anything else. They were students at college and underwent training for scholastic attainments, but the larger equipment was gained out in the world, where people thought and acted as prompted by nature. They went about picking up bits of information from all classes and conditions of people—humanity culture such as a man must have. He must understand that words in the pulpit are of no earthly use except as they express fact or thought or prove truth or incite to effort. He must be able to realize that the value of service or sermon is

exactly his ability to confirm members in their best purposes and activities, and to allure others into the church and service of the Master. His literary activity ought to be constant, his scholarship ought to be kept bright and keen and fine by contact with the best authors, and his sympathies warm and fresh by an elbow touch with all that makes up the daily experiences of common humanity. A man like this will bring to the pulpit a tact, common sense and divining judgment, scholarship and culture, which will give the church peace within itself, more enterprise in all its parts and agencies, make it more acceptable and thoroughly effective as a force and power for the spiritual instruction and moral advancement of the world, placing it where it will meet the complex needs and requirements of our modern social life equally as it did those of a simpler state of society.

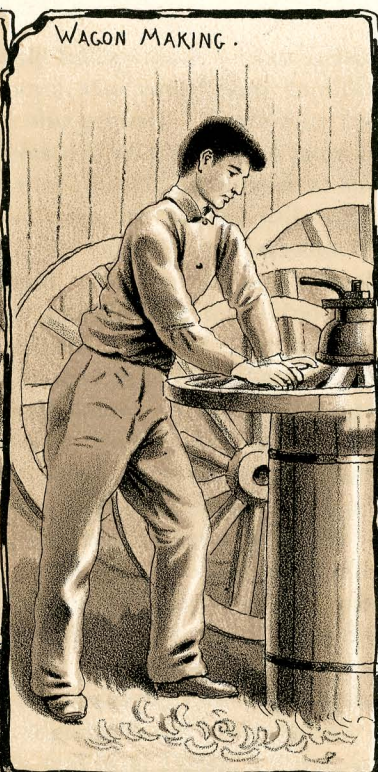
C. B. CARLISLE.

BATTLE OF THE LAMBS AND GOATS.

THERE was to be a Sunday school at Goose ridge. It had been announced Friday afternoon, just before school was dismissed, and the children hurried home to communicate the important bit of news. In every home in the district the personal appearance of the Sunday school agent was carefully described, and the language he used in the announcement was repeated with divers variations. Much wonder was manifested over the stock of "libraries" carried by the agent, and many were the wild guesses as to their contents; for the Goose ridge folks were not well read in the literature of the day, much less in that of the regulation Sunday school.

Goose ridge was a misnomer. It was a combination church and school house,

situated in a little valley, through which a sluggish stream slowly wound its way, and not a goose was to be found within its confines. A dozen years before the building had been located on a ridge adjoining Abe Brackett's place. A local preacher had named it Mt. Carmel, or Mt. Comfort, everybody had forgotten just what, but it was something more refined or more scriptural than the present name. Abe Brackett's geese strolled over the ridge every day, and at the first service two of these interesting bipeds had wandered in, and by their ill-timed "honks" seriously disturbed Elder Samuel's opening prayer. That had settled the name of the church. The old house was burned during the war, and when a new site was selected down in the valley,



OREGON.- INDIAN TRAINING SCHOOL, CHEMAWA.

the old name clung to it, although Abe Brackett and his geese had long since departed.

Twenty years ago there were many localities in Southern Missouri where no Sunday schools had been organized, and a most inviting field was here offered for missionary work, which the enterprising dealers in "moral tales" and song books were not slow to recognize. And so it happened that when John Peters, Sunday school missionary, and agent for various publications auxiliary to the work, came into the district, he found an unbroken field. The juvenile ridgers sometimes attended the occasional services conducted by some local preacher, or circuit rider, or, better than all, a revivalist; but oftener the rising generation around Goose ridge spent Sunday in a grand rabbit hunt, a game of ball, or some similar amusement, and there were not a few of the elders who were opposed to Sunday schools.

On the opening day, all prejudices were buried long enough to gratify the curiosity of saint and sinner alike. Parson Meacham was to preach a sermon at 11:00 o'clock, and Sunday school was announced two hours earlier. Now, the good parson, on the occasions of his monthly visits, had been accustomed to waiting nearly an hour after the appointed time before commencing services. This was because his congregation, early in the day, literally observed the scriptural injunction to rest on the Sabbath. This morning the minister went to the ridge long before his usual time, in order to assist Brother Peters in the work of organization.

When the minister stepped up the aisle, between the rows of backless seats, with his usual deliberate tread, he was much surprised at the size and personnel of the congregation. There was Brother Hise, who always came late, up in the "amen corner," with three of his

boys a little further back. Tom Wilson and his boys, who never came to meeting, were also present. There were also many others out who had been more or less irregular in their attendance at service. The preacher smiled with satisfaction at the curiosity the missionary had aroused. Brother Peters himself was rather surprised at the outpouring of the ridgers, and felt that the day would be profitable in both the spiritual and financial sense. After all, the missionary was a good man, and, if the loaves and fishes were not very numerous, he was happy when he could advance the spiritual interest of the community. After the opening song and prayer, followed a short address from Brother Peters, supplemented by a few remarks from the parson. Then began the work of arranging classes. Parson Meacham organized the brethren into a bible class, and Mrs. Doran, a recent arrival, took charge of a class among the ladies. Brother Peters succeeded in getting four of the boys into the infant class, though they were rather large for infants. There were Ben Hise, fully twelve years old, and his brother, Pete, two years younger, and Johnny Sanders and Bill Proctor, who were about eleven each. Mr. Peters read and explained bible stories in a manner that riveted the attention and challenged the admiration of the class. They were in particular impressed by one of those numerous passages wherein the christian is likened unto a sheep. He explained that good little boys, who attended Sunday school and tried to do right, were little lambs, while the boys who spent Sunday in hunting and fishing and other ways of Sabbath breaking, would, in the last day, surely be placed on the left hand with the goats, and told to depart into everlasting fire.

Ben looked down at his blue suit of homespun jeans, then over to his brother

Pete. He then glanced to the back part of the house, where the three Wilson boys were seated. He smiled a Phari-saical smile, as he thought of himself as a sample lamb, and the Wilsons as sample goats—for had he not seen all of those boys out rabbit hunting only last Sunday?

After the usual song and prayer a recess followed before the sermon. The four infants walked out of the house, well pleased with their new experience. Ben led the way to a fallen tree, some distance away, where Joe Wilson and his brothers, Bob and Red, were seated. Ben stuck his hands in his pockets, assumed an air of impotence, and scornfully exclaimed:

"Joe, you're a goat!"

"Yes, an' so is Bob an' Red!" chimed in Pete.

"You're another!" exclaimed Red, indignantly; for, while he had not heard the Sunday school lesson, he was convinced that the new epithet was not intended as a compliment, and the occasion demanded a crushing retort.

"No we hain't," said Johnny, "we're little lambs—we are—hain't we, Bill?"

"Now, lookey here," said Joe, who had grown very red in the face, "we hain't goats no more'n you fellers, an' I

can lick anybody that says we are;" and the insulted ridger shook his fist under Ben's nose.

"You are one, an' I can prove it!" cried Ben, drawing his coat and exposing his new yarn suspenders.

Then followed the usual dares and counter-dares, which ended in an open attack on the part of the lamb. Joe was a little larger than his assailant, and soon had him at a decided disadvantage. Pete then came to the rescue, and this precipitated a general conflict, in which both lambs and goats indiscriminately pulled hair, gouged and kicked.

How the battle would have ended, no one will ever know, for Brother Peters and Parson Meacham had viewed the conflict from afar, and hastened to separate and reprove the pugnacious young ridgers. There were one or two bloody noses, and one or two home-spun suits had been badly torn, but no other material damage was done.

Both lambs and goats have long since been gathered into the fold of the church. Brother Peters is still in the Sunday school work, and when his labors call him into a new field, or to a missionary experience meeting, he is sure to tell the story of the battle of the lambs and goats.

ANDREW B. APPLEBY.

LIME, AND HOW IT IS PRODUCED.

AMONG the many industries of the Pacific Northwest, the manufacture of lime is by no means the least. In a region undergoing such rapid development, where such a vast number of new buildings are in process of erection, the source from which comes the enormous quantity of building materials used, cannot but possess a degree of interest for every one. It is a matter of common knowledge where our lumber comes from, and that nearly every town of size has on its outskirts one or more brick yards, where, from the widely diffused beds of clay, are made those rectangular blocks, which, when cemented together by mortar, constitute the walls of ninety-nine one-hundredths of the business blocks of America; but the source from which come the thousands of barrels of lime used in cement, plaster and finish, is something of which few would

undertake to speak with certainty. Nor has one not connected with the business of making, using or handling lime, any idea of the enormous quantity of that material annually consumed. There was used in Portland and vicinity, in 1884, nearly twenty-nine thousand barrels of lime; the following year the consumption increased five thousand barrels; and during the year just closed, it required forty thousand to supply the market.

Of late years, the great source of our lime supply has been the San Juan group of islands, in Puget sound, that small portion of our national domain which once nearly involved us in a war with Great Britain. A number of companies are extensively engaged in the production of lime on the islands, where the many favorable circumstances conspire to reduce the cost of production and shipment to a minimum. The beds of limestone are very large, and some of them are so situated that ships may be loaded direct from the ledges, without the use of other machinery than derricks. Fuel is as cheap as it possibly could be, and the facilities for shipment to the sound ports, this city, or San Francisco are of the best. Until recently, the San Juan lime has had almost a monopoly of the home market, and has sold at \$1.75 per barrel. Under competition, which has sprung up during the past year, the price has been forced down to \$1.25 per barrel, the difference representing a great saving in the cost of erecting buildings.

The new factor in the lime industry is the Portland Lime and Cement Company, of which S. R. Irwin is manager, and which will soon be incorporated with a capital stock of \$25,000.00. The works of this company are located in East Portland, near the terminus of the Jefferson street ferry. The works, as shown on page 87, occupy a most advantageous site, embracing several acres of land. On one

side passes the track of the Oregon & California railroad, and on the other flows the Willamette river, thus providing most excellent conveniences for the reception of material and the shipment of the product. The works began operation on the first of May, 1886, and have turned out fifteen thousand barrels of lime, nearly all of which has been consumed in the home market. The works have a capacity of one hundred and fifty barrels, containing two hundred and twenty pounds each, per day, equivalent to a total of forty-seven thousand barrels per year, which is sufficient to supply the present entire demand of this market. Previous to the unfortunate destruction by fire of the large paper mill at La Camas, W. T., an average of ten barrels of this lime was used daily in that institution.

To one not familiar with this industry, these works present a peculiar appearance. The two large, black, cylindrical structures shown in the engraving, are the stacks of the lime kiln. They are of an improved pattern, and quite new in the lime manufacture of this region. Their peculiar feature is that the lime burning, which takes place within them, is continuous. The charging of the kiln at the top, effected by means of a self-dumping car, drawn by machinery up the inclined railway, takes place by equal steps with the drawing out of the finished product at the base of the kiln. The operation, perhaps the most simple known in applied chemistry, will be made intelligible by a few words of explanation.

Lime, the material which forms the basis of all mortars and cement, is the oxide of the metal known as calcium. Combined with carbonic acid, it forms limestone, and by heating this substance the acid is driven off, leaving the oxide of calcium, which forms, if the limestone be pure, the white, brittle and flaky

body known as quick lime. When in this condition its properties are rather remarkable. It unites with water so powerfully as to cause it to boil, and it takes up carbonic acid from the air with avidity. It will also unite, but very slowly, with silica, sand or quartz. These properties conspire to make quick lime one of the most useful substances, for, in consequence, it becomes possible to make mortars and cements, which are indispensable in the arts. Quick lime is the oxide of calcium; slaked lime is quick lime combined with water, forming, in chemical language, a hydrate. Slaked lime, spread as a mortar upon the walls of a dwelling, or in the interstices of brick work, loses its surplus water, retaining a definite quantity, and absorbs carbonic acid from the atmosphere, and thus hardens or "sets." Sand is added primarily for the purpose of affording numerous centers of attraction, around which the neighboring particles of lime are grouped, whereby large and widely extended cracks are prevented.

The operation of freeing the limestone from its carbonic acid is performed simply by raising it to a light red heat, which is sufficient to drive off the volatile gas. Theoretically, there is forty-four per cent. of carbonic acid and fifty-six per cent. of lime in limestone, but this purity is never reached in nature. The purest possible limestone is white marble, like that of Carrara and the ancient Mount Pentelicus, of which statues are made; but even these are not entirely pure. The Portland Lime and Cement Company's supply is of rather uncommon purity, and contains about nine-tenths carbonate of lime. The remaining constituents are not injurious to the quality or strength of the lime. I spoke of the process of burning, to which the limestone is subjected. If we examine the kilns, we will find that the method, though simple in itself, has yet

required the expenditure of a great deal of ingenuity. The objects in view, of course, are to economize labor, fuel and time. The large stacks of boiler plate are lined with fire brick, to withstand the high degree of temperature to which the inner surface is subjected, and have the appearance, from the top, of wells, being vertical cylindrical shafts, twenty-five or more feet deep. At the bottom there is a passage for discharging the finished product; opening into the chamber near the base are three fire-places, which supply the necessary heat. Wood is the fuel, and something in excess of a cord each day is consumed in each fire-place, the highly heated gaseous products of combustion passing into the shaft and circulating among and heating the fragments of limestone. A ton of limestone will produce six barrels of lime, containing two hundred and twenty pounds per barrel, as put up at these works, instead of the ordinary weight of two hundred pounds, as elsewhere.

Although people speak of "burning" lime, it is easily seen that the word is a misnomer, for the lime does not burn in the least. It neither takes fire nor is otherwise consumed. We may the more plausibly take exceptions to that word, as used in this connection, as there is an excellent and expressive one which meets the case exactly. It is "calcine," which is derived from *calx*, the Latin name for lime.

Abundant supplies of pure and easily accessible carbonate of lime are very valuable sources of wealth to a country. Thus far limestone has not been found to exist as abundantly as could be wished in Oregon. The only source at present easily available in Oregon, is the quarry near Gold Hill, in Jackson county, from which the company in this city derives its supply. It there exists in immense quantities, and is considerably better than the average for purity. Analysis

gives the following proportion of ingredients :

Carbonate of lime	89.4
Silica	3.1
Carbonate of magnesia.....	5.3
Oxide of iron	2.2
	<hr/> 100.0

It lies at a distance of about three hundred miles from Portland, and close beside the track of the Oregon & California railroad, by which the rock is transported to Portland. It is of the variety known as crystalized limestone, belonging to the same class as marble. It is really a veined and clouded marble, and although not adapted for the finer purposes of statuary, it makes a very excellent and durable stone for all building purposes, for which use the company has proposed it.

Some small, and at present unavailable, limestone deposits exist along the foot-hills of the Cascade and Coast ranges within the Willamette valley—notably in Polk and Clackamas counties. They

are of the variety known as shell limestone, being composed almost exclusively of the fossil shells of innumerable marine animals. Shells produce, ordinarily, a very good article of lime, when calcined, but the deposits are apt to contain so much sand in the spaces between the shells, that the resulting lime is too largely contaminated to be of use. On the Cowlitz river, in Washington Territory, is another shell limestone deposit; and in other portions of the region along the Lower Columbia river and its tributaries, there are many more, but none of any present importance. Near Huntington, in Baker county, Oregon, there is a limestone deposit which would be very promising, were it not for the expense of nearly four hundred miles of railway carriage, which would be required to transport it to market. Much of the stone is a very compact, hard and tough variety, with a pink tinge. It should be durable and valuable for architectural purposes.

THE PUGET SOUND OF TO-DAY.

MY first visit to Puget Sound was made with the guests of the Northern Pacific railroad, during the celebration of its completion, in September, 1883. We spent an afternoon at Tacoma, where we saw the products of the country, and at a banquet heard the country extolled, and then sailed for Seattle, whose illuminations shone across the bay as our steamer rounded Battery Point and approached the city. There we met with the same cordial reception, and on the following day saw huge blocks of coal and immense slabs of lumber, representing the staple products of the country, and listened to a further exposition of its resources at a grand barbecue and clam bake. In the evening I

joined the editorial party, as it came to the sound, and sat down to another banquet, which was designed, not merely to entertain and honor the representatives of the press, but to furnish them with information, which they all desired, concerning "the pride of Washington Territory."

By such a visit to these cities, however, under such favorable circumstances, I got only a feeble impression of the beauty of the sound, or its greatness. It was only by the excursion of the following three days, to different parts of the sound, that I came sensibly to realize the truth of Admiral Charles Wilkes' statement, that "nothing can surpass the beauty of these waters and their safety,"

or to credit fully all that I had heard at Tacoma and Seattle. With the editorial party, I left Seattle in the night, and awoke at Port Townsend. Thence we sailed out around the islands into Bellingham bay, and back through the upper portion of the archipelago to Victoria, where we spent the following day, and then returned to our train at Tacoma, touching at Port Townsend, Port Ludlow and a few other points which we had missed on our upward trip.

Although I had often been on Lake Champlain, which I still think is the most beautiful large body of fresh water in America, and on Lake George, the St. Lawrence and the great lakes, and was familiar with many parts of the New England coast, I had never sailed where the purely natural scenery was so charming and impressive. The Olympic mountains on the west, as varied and picturesque as the Wasatch range, in Utah, and more glistening, the Cascades on the east, with the peaks of Rainier and Baker challenging the sky as they towered above the clouds, and the ever-changing foreground of islands and headlands; these, seen, as they were, under the influence of delightful and stimulating companionship, answered well, in imagination, to those "Fortunate fields, of old sought in the Atlantic main."

Since that time, hundreds of tourists have visited the sound, more the past season than ever before; and the number will continually increase, as its attractions become more widely known in the East, and the Northwest country advances in population and wealth. Travelers will make, not only the round trip from Tacoma to Victoria, but will linger at different places and make excursions to the mountains as the opportunities and facilities for summering on the sound increase and improve. Already, at Tacoma, much has been done to accommodate, as well as invite such visitors. Two

years ago a large hotel, the "Tacoma," was erected and beautifully furnished, at a cost of about two hundred thousand dollars. During the past season it has been taxed to its full capacity to accommodate the increasing number of its patrons. It has attracted and held in Tacoma many visitors who, in the end, have made their permanent location there; and so it serves the double purpose of stimulating travel to the sound and enlarging the population and business of the city. I have no doubt that a similar hotel at Seattle would be a good investment of itself, and in what it would contribute to the value of other things in that city.

From Tacoma there are a road and trail to the glaciers of Mt. Rainier, or Tacoma, as it is called in that city, of which Senator Edmunds, who visited them two years ago, says that "The finest effect I ever saw during a long tour through the mountains of Switzerland, fell far short of what is seen at Mt. Rainier." New Hampshire, with its attractions of the White mountains and the Pemigewasset valley, derives a considerable portion—I think I have seen it estimated at one-fifth—of the annual income of its railroads and people, from tourists and summer boarders. Within the past year, California has received a great revenue from the travel which the favoring rates upon the railroads have stimulated. So long as the country remains prosperous, and the wealthy, or leisure, class increases, there will be a constantly enlarging travel to this region. The opening of the Canadian Pacific railroad, by adding another route, enabling tourists to come one way and return another, will furnish new inducements to visit this part of the country, and the travel to Alaska, which has only just begun, will make Admiralty inlet a great thoroughfare for tourists, as it already is for business.

The settled portions of the country on the sound bear somewhat the same relation to its waters that Venice does to the Adriatic. Communication between points is maintained wholly by water. The sound, with its bays, inlets and rivers, forms the main highway of the country, like the canals which penetrate every part of Venice. There are nearly one hundred steamboats plying regularly between different ports on the sound and stations on the rivers, besides many sloops and barges that are engaged more or less constantly in local traffic. The merchant down at New Dungeness, on the Straits of Fuca, keeps a sloop steadily employed in exchanging the farm products of that remote settlement with the Puget Mill Company, at Port Gamble, for the goods which the farmers require. It is a simple commerce that he thus carries on, demanding the use of very little money, but he has found it profitable to himself, as it is indispensable to the settlement. Most of this local trade is controlled at Seattle, whose central position makes it possible for these little steamboats to make daily trips to and from the city. This gives Seattle its principal advantage over Tacoma. In its immediate vicinity Tacoma has larger inland settlements to support it, and much territory that is susceptible of cultivation, which will furnish it with an increasing local traffic.

The principal hop region is adjacent to Tacoma and Seattle, and this is destined to be greatly extended. The valleys of the Puyallup, the White and the Snoqualmie rivers are admirably adapted to this industry. During the past season about twenty thousand bales have been raised, and sold for an average price of twenty cents a pound. It costs about eight cents a pound to make the crop, and as failures are unknown, the business is profitable whenever the price is as high as it has been the past year.

All the country that is susceptible of cultivation produces a great abundance of everything that is adapted to the climate. On the tide lands, which are extensive in some places, enormous crops of wheat, hay and oats are raised, and and potatoes and the hardy fruits grow almost too luxuriantly. On the Skagit river there are ten townships of this land in one body, which is of inexhaustible fertility, and so interpenetrated by navigable channels that its products can be loaded conveniently upon water transports. There are ten navigable rivers entering the east side of the sound, which traverse large sections of agricultural land.

One peculiarity of this region, as of all the country lying between the Cascade mountains and the Pacific ocean, in Washington Territory and the state of Oregon, is that the atmosphere may be said to be fertile. Vegetation seems to require but little more than a foothold in the soil, while the atmosphere supplies the food necessary to its growth. Around Puget sound there is a luxuriance of vegetation which suggests the flora of the carboniferous age. This is caused by the humid atmosphere that is borne across the ocean with the current of that mighty river in the sea, a thousand miles wide, which starts in the tropics with a temperature of eighty degrees, and, striking against the island of Borneo, is deflected northward and flows at the rate of three miles an hour from Japan to Alaska.

The moisture from this heated current floats inward and is precipitated in rain upon the earth, making possible the vast forest growth of this region. "The clouds drop fatness." The rainfall robs them of the carbonic acid, which is one of the principal elements of food for plants, and is absorbed by the leaves and roots. Gigantic ferns grow among the great conifers, and other luxuriant

plants make these forests almost impenetrable, except as the pioneer cuts his way into them. It is not uncommon to see ferns ten or twelve feet high, and the firs and cedars sometimes reach the height of three hundred feet.

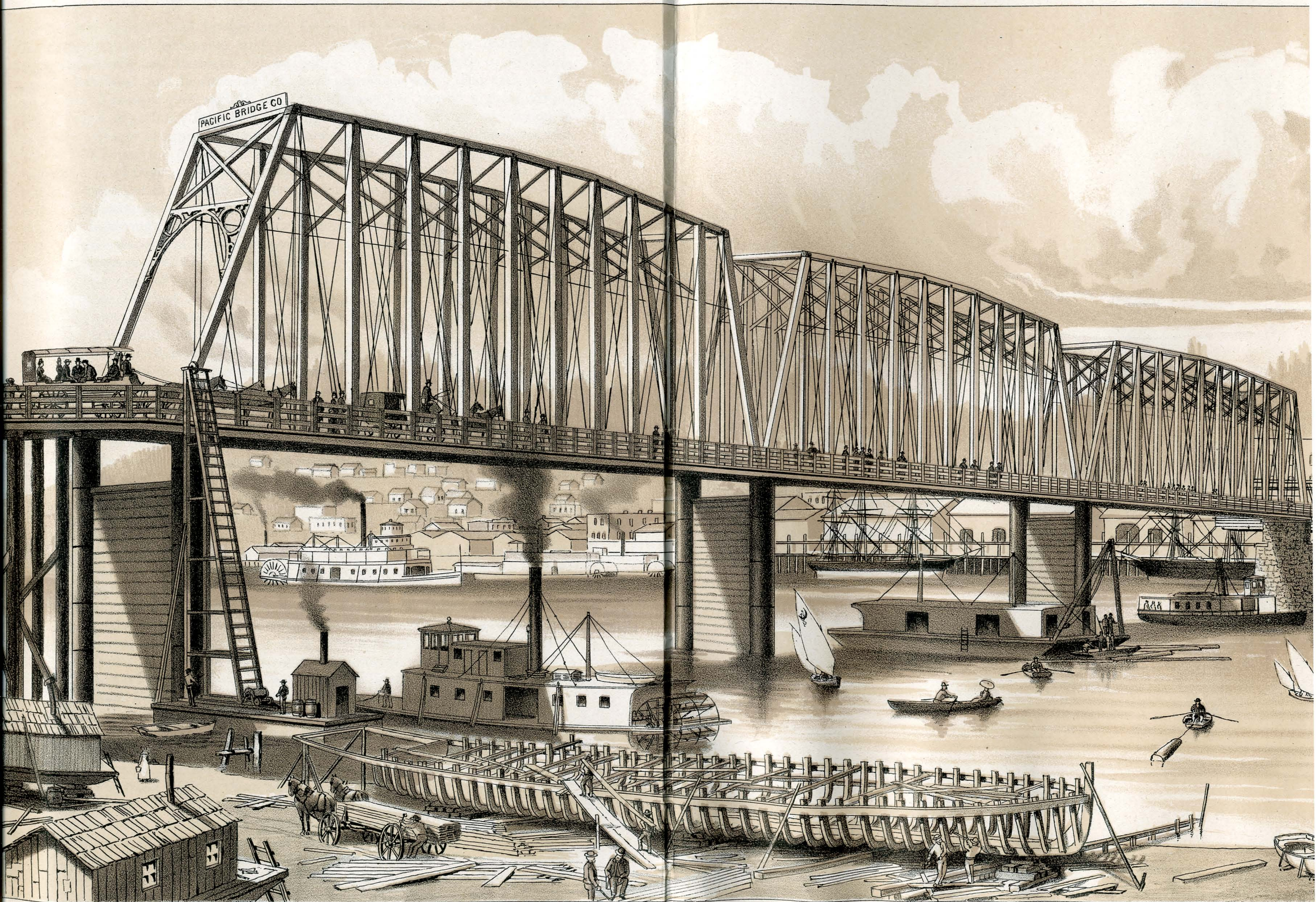
But, notwithstanding the wonderful fertility of the region, not enough land is yet in cultivation to supply the local demand. Much of the flour, wheat and barley come from Walla Walla, Oregon and California; corn meal, butter, bacon and hams from Chicago; beans from California or Chili; canned tomatoes, corn, peaches and other fruits mostly from San Francisco; sheep from Oregon; and beef from Eastern Washington. The total amount of money sent abroad for food which might be raised at home is very large.

From the earliest settlements on the sound, lumber has been its chief product. The business of converting these great trees into lumber is carried on with a system that is nowhere excelled by the trade. There are now in operation about a dozen large saw mills, situated at different ports, besides several smaller mills and manufacturing establishments of various kinds. Thus far, nearly all this lumber has been shipped to California or foreign countries. During the month of November last, forty-five vessels sailed out of the sound with lumber for foreign and coastwise ports. Nine were from Port Blakely, seven from Port Madison, seven from Port Gamble, six from Tacoma, five from Port Discovery, four from Port Ludlow, three from Port Hadlock, two from Seattle and two from Utsalady. The Tacoma Mill Company cut last year sixty million feet of lumber and fifteen million laths, making eighty-five cargoes that left its wharves for San Francisco, China, Japan, Australia, the Sandwich Islands and South America. This company employs two

two hundred and ten thousand feet of lumber daily. There are employed on the wharves about forty stevedores. It has recently received large orders for lumber from the interior of our country, which it is sending east by the Northern Pacific railroad, the track of which has been extended to the mill. A railroad contractor from Denver has just placed an order for about a million and a half feet of bridge timber. The fir of this region is of great value for bridges and all structures in which the strength and durability of the material are essential. It is particularly valuable for ship building. The Tacoma mill has just been getting out three large sticks of timber one hundred and thirty feet long, together with all the timber for three ships to be built at San Francisco.

The opening of the lumber trade from the sound to the interior and eastern parts of our country will still further increase this business. As I have shown, this trade has begun, and if the railway pursues a wise policy, it will grow to enormous proportions. It is often said, as it has been of Tacoma, that railroads do not make cities; but this is only cavil. The complaint is more truly that they do not make the right cities, or all cities. What, except the railroads, has enabled St. Paul and Minneapolis to supply the country south and west for hundreds of miles with lumber? How have the railroads developed the lumber business of those cities? It is by carrying lumber at such low rates that it could be afforded by the people on the distant prairies. Thousands of car loads of lumber have been hauled from St. Paul and Minneapolis to Omaha at the rate of sixteen cents per hundred pounds. With corresponding rates from the sound, can it be doubted that the railroads would help Tacoma and Seattle?

I believe, indeed, that business of all kinds on the sound, agriculture, fishing,



OREGON.—THE NEW BRIDGE ACROSS THE WILLAMETTE AT PORTLAND.

lumber, the domestic and foreign trade in lumber, oriental commerce, and, to some extent, the coal business, will be greatly increased and in some departments it will increase quite rapidly. Every place of importance from Olympia to Victoria is now in a prosperous state, with bright hopes for the future. The business men of Olympia are modifying the organization of their board of trade, largely increasing the city's harbor facilities, and bestirring themselves in many ways to make the capital city keep pace with the progress at other points on the sound. Two lines of railroad are now building from the head of the sound to Chehalis river, Gray's harbor and Shoalwater bay, which will open a larger country to the trade of Olympia.

Tacoma will soon have the advantages of direct connection with the East by rail. The Cascades branch of the Northern Pacific railroad will be opened for traffic early in the spring, and a large portion of the grain of Eastern Washington will go to market by this route; and the place where wheat is sold will be the point where much of the general trade of the wheat region will be controlled. Other industries will be stimulated, or created, by the extension of the commerce of the city, and furnish employment to labor and opportunity to enterprise. The railroad company will doubtless encourage the importation of tea from Japan, and the city will, in many other ways, be benefited by the railroad, which has already made it a place of such importance. Although the railroad is a great reliance, the business men of Tacoma do not wait for it to do everything for them, but act on the theory that the railroad will help those who help themselves. They have recently secured the erection of smelting works for the reduction of gold, silver and lead ores, that will at first have a capacity of fifty tons a day. The city has had a bet-

ter holiday trade the past month than ever before. There is no doubt that it will have a larger growth in 1887 than in any previous year. The exclusion of the Chinese has proved a great advantage to the city. Every occupation is now open to free American laborers, who add to the general prosperity by consuming, as well as producing, the fruits of domestic labor.

Apart from other substantial grounds of prosperity, Seattle has railroad prospects, as well as Tacoma. It will, doubtless, by a short extension of a line already constructed, connect with the Cascades branch, and thus secure equal facilities for doing its own business on the Northern Pacific, and will have other railroad connections of the first importance. There is a charter for a railroad along the east shore, to a connection with the Canadian Pacific, and a survey for the route is about completed. The construction of this road would be of great importance to the entire country around the sound, as it would give, not Seattle only, but Tacoma and Portland, a rail connection with the Canadian road. Another railroad that is likely to be built soon is the Seattle, Lake Shore and Eastern, to open a vast region in the vicinity of Snoqualmie pass, and to extend, perhaps, to Spokane Falls. The large deposits of iron ore on this proposed line have been recently tested by eastern steel manufacturers, and it is proposed to bring this ore to the sound and manufacture it into steel.

At Port Townsend and Victoria there has been great improvement during the past year. Everywhere, as I have said, there are signs of progress, and the country generally seems to be on the eve of rapid development. With the opening of the direct line to the East, across the Cascade mountains, and the extension of the Canadian Pacific to Seattle and Tacoma, great impetus will be given to

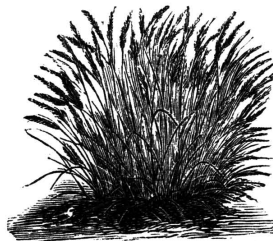
the growth of the country. The lumber trade with California is rapidly increasing, and the foreign demand is large. The eastern trade is just being opened, and with promise of a rapid increase. To meet this demand, railroads are building into the timber, to haul logs to the sound, where they are put into rafts and towed to the mills. The Tacoma chamber of commerce is encouraging the business of deep sea fishing for cod and halibut, which abound in our northern seas. Every variety of fish is found in great abundance, and it is only a question of time when the fisheries of Puget sound must prove a very great source of wealth. During the past year, eleven vessels have been employed in the cod fishing business, and the success that has attended the enterprise must lead to its enlargement. In the vicinity of Port Townsend, considerable iron is manufactured, and the coal business is slowly increasing. There is no doubt that the Canadian Pacific railroad will soon bring a large new business to the sound, both foreign and domestic.

The agitation of the labor question during the past year, has resulted in much more good than harm. The hours of labor, in the great companies, have been reduced from twelve to ten. There is far less of that harsh disposition that makes men of independent feelings rebellious against the social order, and the chances for intelligent and aspiring labor are multiplying. As the different enterprises of the country advance, and

new ones are created, the contending forces of more varied interests will develop a freer and healthier life in the communities that have been more or less stifled by the control of single interests, and these new influences will make it, socially and politically, a better country.

I have no doubt that what I heard Carleton Coffin say, several years before his recent visit to this region, is true, based, as his predictions were, upon the study of physical geography, that "From that wonderful series of bays and inlets, known as Puget sound, will sail the future marine of the Northern Pacific," and that "To these harbors will flow the great commercial tides of the Pacific, from China, Japan, Australia and the South Pacific." And I have equal confidence that the ethnic forces underneath our government, the forces that have moulded the Germanic and Anglo-Saxon races, so liberty-loving that even Rome, in all the power of its imperialism, never could wholly bring the people beyond the Alps into subjection, and make them a component part of the empire, will determine the character of the civilization of this section. I believe it is the destiny of this magnificent region to be widely apportioned, with all its opportunities, among men who will observe the principle of order, as well as the principle of progress, in establishing a society in which mutual interests will be regarded and mutual obligations receive full recognition.

S. B. PETTENGILL.



THE HERMIT OF THE SISKIYOU.

THERE stood, a quarter of a century ago, in the heart of the Siskiyou mountains, a rude cabin of poles and brush, thatched with closely packed branches of young firs. The exact location matters little, for the iron finger of Time has effaced all traces of its existence, and demonstrated the mutability of all things terrestrial, even in those mountain solitudes. Many years ago the poles and brush were swept by a landslide into the noisy, dashing stream flowing through the gulch at the base of the hill, far up on whose side stood the cabin, while a giant fir, whose grasp upon the earth was thus loosened till it succumbed to the power of the west wind and toppled to the earth, now lies prostrate and broken across the site of this once humble habitation. Even the rude trail that wound tortuously through the dense forest and along the bank of the rapid stream, is now so completely obliterated by the rains and snows, so blocked by fallen trees and masses of earth and rock, brought down the mountains' steep sides by the melting snows and copious rains of each vernal season, that he would indeed be well skilled in woodcraft who could successfully trace it from the old mining camp whence it started, some four miles down-stream, to the site of the vanished hut. Time was when this desolate spot was the center of an absorbing interest for scores of human beings; but now few know that it ever existed, and fewer its exact location, while the incident I am about to relate has already been relegated to the domain of fiction or legendary romance, save by the few survivors of those whom the shifting kaleidoscope of life brought for a brief period in contact with the peculiar and mysterious being who built and occupied this rude habitation.

The Siskiyou mountains lie on the border line of California and Oregon, stretching westward from the Cascades to the Coast range. They form the dividing ridge between two great rivers, both of which have cleft deep passages through the obstructing Coast range, and pour their annual floods in deep, rapid and turgid streams between the lofty walls of rugged rock which confine them to their narrow channels. The Klamath, in California, and the Rogue, in Oregon, are alike in all their essential features, turbulent, impetuous and unnavigable. From the dividing ridge of the Siskiyous, each receives a multitude of affluents, both small and great, which pour down in noisy haste from their birthplace amid the springs and melting snows of the mountain summits. On many of these streams gold was discovered early in the "fifties," and for a number of years every bend and flat was the scene of mining operations of the primitive rocker or long-slucce character. In some of these localities, where the extent of mining ground was comparatively large, or which were so located as to be a convenient central point for several outlying districts, quite extensive "camps" sprang up and flourished for several years. Some of these have still a sort of *post mortem* existence, though the great majority of them have lost all material being, and are rapidly falling into the obscurity of things forgotten.

During the mining period referred to, such a camp as I have described stood upon one of the larger tributaries of the Klamath, flowing down the southern slope of the mountains. It occupied an abbreviated flat at a bend in the stream, first known as "Sailor's bend," because "color" was originally found there by two adventurous seamen, who had deserted their vessel to experience the hazards, privations, excitements and golden possibilities that made up the sum of the pioneer miner's existence. Later, when half a dozen brush and shake shanties centered about a larger and more pretentious structure of logs, shakes and canvas, which did duty as a store, saloon, post office, gambling hall and general social rendezvous for the miners along the stream for several miles above and below, it was christened "Betsyville," by some facetious miner, in a moment of witty inspiration, and wore the title proudly until its last occupant deserted it, and left its dilapidated structures a prey to the elements.

Although a night never passed without the exhibition of considerable animation at Betsyville, Saturday night was the "one bright particular star" of its septuary round. It was then the whole population of the neighborhood gathered at the rendezvous, and partook of such good cheer as "Big Johnson" was accustomed to dispense. It was an occasion of much good natured hilarity, merging, upon occasion, into boisterousness, on the part of some of the conviviais whose supply of brains was not sufficiently weighty to keep down the cain-raising tendency of Big Johnson's liquor. All such were endured as long as there remained a shred of virtue upon which to hang endurance, and were then summarily quieted by Johnson, to the thankful relief of his less noisy patrons. Cards, jokes, stories, yarns, cigars, pipes, together with frequent indulgences in

whisky straight, supplemented, at times, by the rasping tones of a tortured fiddle, squeaking out its enlivening accompaniment to a reel, hornpipe or a genuine "stag dance," made up the sum of the night's entertainment, which very seldom ended before the brightening of the eastern sky heralded the approach of the Sabbath sun. Sunday was a day of rest, if not devotion. Avaricious indeed was the man who worked in his claim on the Sabbath. This much of the influence of the habits of other days still clung to them. They observed the fourth commandment, so far as to "remember the Sabbath day," but almost to a man they neglected the injunction "to keep it holy." Sunday was a day for doing all sorts of odd jobs—for washing clothes, splitting wood, buying provisions at the store, mending tools and clothing, and, in the afternoon and evening, resuming at Johnson's the thread of enjoyment where it was broken off the night before. Sunday night was very similar to its predecessor, though the zest and freshness that had marked the revelries terminating the week's labor had passed away.

It was in the midst of such a scene as this, late one Saturday night, that a stranger entered the door, which stood hospitably open, though, if the truth be told, Johnson, in opening it, did so less from the promptings of a spirit of hospitality than with a desire to exchange some of the foul, whisky-laden atmosphere of the interior for the clear and uncontaminated air of the mountains. The new comer stood for some minutes quietly watching the hilarious company, attracting but a casual glance from the revelers, for strangers were too common in Betsyville to be objects of curiosity. The mines, at that season, were thronged with men, constantly coming and going, and scarcely a night passed that half a dozen of them did not sample Johnson's

fire-water before seeking a couch beneath the spreading branches of some not-distant fir, or in rainy weather, rolling up in their blankets to "court the balmy" upon the floor of the saloon, despite the hilarity of the more wakeful guests. No attention was, therefore, paid to the new comer, until he stepped up to the rude bar, made of a slab sawed from the side of a log and turned with the bark side downward, and offered Johnson a dollar for the loan of a blanket until morning. A man without a blanket in the mountains was as rare a sight as one without a horse on the plains, and in a short time every pair of eyes in the room was carefully scrutinizing the stranger. He was a tall man, of refined features and expression, polite in his manner and dignified in his bearing, and yet the fact that he was traveling without a regular outfit created such a suspicion in the minds of the proprietor and his patrons, that the object of it could not but see it reflected in their countenances. Johnson gruffly said he had no blankets to lend, but would sell him one for ten dollars. The stranger at once turned on his heel and passed out the open door as silently and unexpectedly as he had entered.

A few days after this incident at Betsyville, a miner whose claim was located farther up the stream, noticed, while following down its banks on his way to the camp, smoke rising through the tree tops on the side of a little gulch leading upward from a flat along the stream. Curiosity led him to follow up the bank of the little brook, which poured in alternate foam and crystals down its steep and rocky bed, and see who was camped in that beautiful, but lonely, spot. Ascending a few hundred yards, he observed a rude cabin of brush and poles, standing a little back from the brook. From a clay chimney, protruding from one corner of the structure, issued the

column of smoke which had first attracted his attention. He climbed the bank and entered the cabin, expecting to find the owner within, as he had observed no signs of his presence on the outside. The hut was empty, not only of the owner, but of everything which could be classified as furniture or domestic equipments, save only a few freshly cut fir boughs in one end, which were evidently used as a bed, and a clay fireplace at the other end, in which was blazing a fire of dried branches, whose ragged ends gave evidence of having been broken by hand. There was neither axe, spade, pick, nor, in fact, any article whatever usually seen about the cabin of a miner, and no camping utensils of any kind. The hut was, evidently, but two or three days old, and was just such a structure as a man of intelligence and ordinary ingenuity could erect with the aid only of a large pocket knife. The thick branches which formed the corner posts and cross pieces, among which the lighter ones were entwined to make the sides and top, had been sharpened with a knife and driven into the ground with a large stone, as the whittlings, discarded branches and discolored stones scattered about on the outside plainly witnessed.

There were signs of a meal having been cooked, but no preparations for another were visible, save only the blazing fire and a few sharpened sticks with charred ends, which had evidently been used for broiling spits. The intruder waited some time for the return of the unknown occupant, and then, his desire to reach camp conquering his curiosity, he left the place and resumed his journey down the stream to Betsyville. In the course of his stay in camp he made inquiries about the owner of the hut, only to learn that its existence was unknown to the frequenters of Johnson's. Only he and the mysterious builder had,

probably, ever set eyes on that rude brush habitation. His curiosity was now doubled, and on his return the next day he again paid the hut a visit, accompanied by one of the regular residents of Betsyville, who was also desirous of learning the identity of the new settler. He was again disappointed, for the cabin was still deserted, although there were a few observable traces of the presence of some person in the hut since the day before, not the least of which was the fact that a fire was still burning so freely as to indicate that it had been replenished within the past half hour.

When this intelligence was carried back to camp, it created considerable discussion among the frequenters of Johnson's establishment. There was nothing remarkable in the fact of some stranger having built a hut, for prospectors were continually locating and housing themselves in temporary shanties of brush. What made this case the subject of curiosity, and even suspicion, were the two facts that the hut had evidently not been constructed by a person possessing a miner's, or camper's outfit, and that the owner had apparently gone into hiding to avoid meeting his visitors. When Saturday night came, and with it the usual influx of miners from the more distant claims, the subject of the mysterious person who had built a brush hut with his jack-knife received more serious attention and a free discussion. Sluices had been robbed in times past, and it was the general sense of the crowd that a man who would build a hut must be either a genuine miner or a man who expected to gain a living in some illegitimate way. The result of it all was that the following day, Sunday, an informal committee of half a dozen miners paid the new comer a visit.

As before, the occupant of the strange

cabin was not at home, and the unbidden guests were compelled to act as their own entertainers. They could find nothing but the bare walls of the hut, the remains of a fire, evidently several hours extinct, and a few crude utensils, such as could be fashioned with a pocket knife, from the branches of neighboring trees. Nothing whatever could be found to indicate the method by which the mysterious builder of the shanty gained a livelihood, except that the slender skeletons of a few mountain trout, and the cleanly-picked bones of birds, bore evidence to the fact that game constituted a portion, at least, of his daily food. There was but meagre satisfaction to be gained from a contemplation of these remains, and a general feeling of irritation at having their curiosity baffled deepened their already unfavorable opinion of the stranger.

"This here is onreasonable," said Bud Jackson, a tall Missourian, who had preferred rabbit hunting to grammar, in his youthful days, "no man hain't got no right to live this a'way. I'm the last man in the world to interfere with a man's nateral rights, but this here is a'goin too fur, an' I move we make him stop it."

"What ye goin' to do 'bout it?" queried Joe Coombs, a delegate from Indiana, whose incessant praises of the muddy Wabash had won for him the title of "Wabash Joe," which name was the only one known to belong to him by any one in the camp, except himself and Johnson, in his official capacity as postmaster.

"What 'ud I do? I'd pull his dern'd shanty down and stick up a notice to clarten these here diggins."

"Don't you think that would be a rather summary proceeding?" quietly asked a young doctor from New York, who had spent two years in the mines in an unsuccessful effort to acquire rich-

es from the ground, in doing which he continually spent the various sums paid him upon the rather infrequent occasions when his professional services were required.

"A which?"

"I mean that it is my opinion we had better find out a little more about this matter before we take such decided action as you propose," said the doctor, who had come with the volunteer committee rather for the purpose of exerting a restraining influence than with any motives of curiosity.

"That's all right, Doc, but how are ye goin' to find out. This makes three times now, an' he ain't never to home."

"O, yes he is, this fire shows that."

"Well, he hain't here when nobody else is."

"That is because we do not come at the right time."

"Well, what 'ud you do?"

"Why, I move that we pin a notice on the side of the cabin, telling him to come down to Johnson's and see us."

"Keerect!" exclaimed Wabash Joe, "that's the ticket. You write 'er, Doc."

Taking a letter from his pocket and taking it from the envelope, he turned the latter over and wrote on the back, as follows:

You are respectfully requested to come down to Johnson's, immediately, and make a few explanations to the citizens of Betsyville. This invitation is very urgent, and a compliance with it is recommended by the

COMMITTEE.

"That's the cheese! Stick 'er up an' lets git!" exclaimed Bud, with enthusiasm.

The notice was accordingly affixed to a twig, and then fastened at the cabin entrance, where it could not fail to be seen, and the committee departed in far better spirits than they had felt a short time before. The informal report they made to the citizens of Betsyville and vicinity was satisfactory, inasmuch as

it seemed to assure them that the mystery would soon be cleared up, and the miners turned their thoughts from the brush hut and its builder to a fuller consideration of the customary convivialities.

Time passed, but the invited guest did not visit Johnson's. Thus for two weeks the matter stood, and then, after a somewhat heated discussion, another Sunday visit was paid to the brush hut, this time by a regularly appointed committee, who were expected by their indignant constituents to "do something."

As on former occasions, the shanty was found without an occupant. The notice had been removed, and there were other evidences of the recent presence of somebody, chief of which was a freshly kindled fire, burning in the rude fireplace.

"I reckon he saw us a comin', and cleared out," said one of the committee.

"That's it," said another, "And I move we give him just ten minutes to come back again, or down comes his shebang."

This proposition received varied and characteristic expressions of approval, and, during the period of suspension of execution, the more curious of the visitors critically examined the surroundings of the cabin. A trail, not yet made very distinct by use, was found leading up the gulch, and this was followed with considerable eagerness, until, about three hundred yards from the hut, it became too indistinct to be easily traced. Careful inspection showed that the reason of this was, that the person who used the trail branched off in a score of directions, evidently with the purpose of preventing the making of a beaten track, by which he might be followed to his destination—at least that was the conclusion at which the investigating committee arrived—and it served to fix them in their previous conviction, that the cabin

was a nuisance which ought to be abated. More than three times the stated ten minutes having now elapsed, and the mysterious stranger not having put in an appearance, the sentence was quickly executed. It took but a few minutes to demolish the hut and pile its constituent parts in a heap, with half a dozen large boulders placed on the top; but the work of writing a second notice to quit was one requiring more time and effort, since the doctor was not present to take charge of that herculean task. Wabash Joe, having seen the doctor write the other one, was looked upon as the most competent to undertake this literary effort, and to him the task was unanimously delegated. This question having been settled, the more practical one of what to write with and what to write upon, claimed attention, and here was a difficulty which nearly relieved Joe of his onerous duty, since neither pen, pencil nor paper had been brought from Johnson's. After much deliberation, and while various suggestions of a highly impracticable nature were being showered upon him, Joe suddenly sprang from his recumbent position beneath a large fir, and exclaimed:

"You fellers just hold your clack a minute, and I'll fix this thing in no time," and he began hastily to descend the side of the hill to the stream below.

"Go it, while you're young," shouted one of them, while the others laughed, as the momentum which Joe acquired in his descent, began to render his movements far more rapid than graceful. The laugh deepened into a roar, interspersed with cat-calls and shrill whistles, as Joe lost his footing entirely and rolled like a log to the bottom, only saving himself from plunging into the creek by securing a firm grasp upon a bunch of willows growing on the bank.

Spending but a moment to take an inventory of his scratches and bruises, Joe

began walking along the bank, peering intently into the water, his movements closely watched by his companions above, who were full of curiosity as to the meaning of his actions. He soon stepped down to the margin of the water, and was for two minutes lost to sight, when he reappeared, bearing in his arms a large flat stone, worn smooth by the action of the water. After considerable puffing and blowing, he climbed the hill, and, throwing the stone upon the ground, sat down to rest.

"What you goin' to do with that 'ar?" asked Bud Jackson, while one of the others took occasion to remark that a man was "a dinged fool what 'ud roll down hill arter a stone, when the mountain was full of 'em."

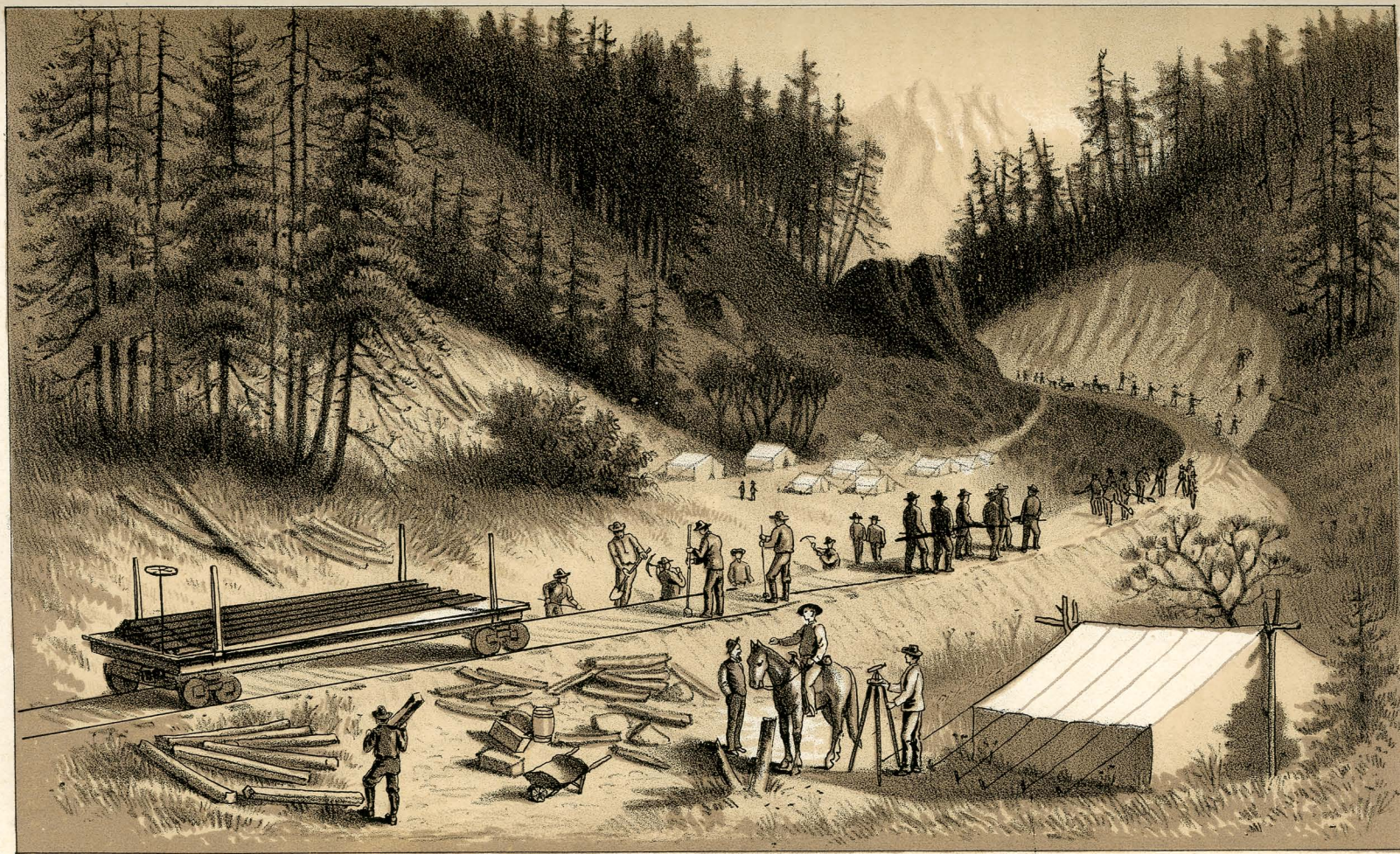
"Never you mind," said Joe, with a look of wisdom and confidence in his countenance, "You fellers just hold your wind, and I'll show you a little Injin business I learned when I was a kid, on the Wabash."

Joe quickly gathered an armful of dry sticks and kindled a fire. He then stood the stone up on its edge, the smooth side turned toward the blaze, and propped it up with a few stones and a short stick. He then sat down again, filled his pipe, lighted it, and, reclining on his elbow, began to smoke in the most unconcerned and contented manner.

"What's all this funny business?" asked one, whose curiosity and impatience began to get the better of him.

"That's all right. Just you wait a few minutes, and you'll know all about it."

Thus admonished, the remainder of the committee followed their scribe's example, and soon each several individual was industriously engaged in sending upwards frequent puffs of smoke to mingle with the darker variety from the fire in contaminating the pure atmosphere of the mountains. In about ten minutes,



WASHINGTON.—CONSTRUCTION OF THE N.P.R.R. TO PUGET SOUND.

the stone became sufficiently dry to suit the scribe, and he arose from the ground, put his pipe in his pocket, drew out his knife, and sharpened the end of a stick he had previously selected. This he thrust into the fire, and left it there until it had become charred.

"I haint as much of an artist as I uster was," said he, as he took the stone and propped it up against a log, at a convenient angle for writing, "And I never was quite equal to them old master fellers; but I reckon I can sorter put somethin' on this 'ere stone as that 'ar feller will understand the meanin' of."

With this remark, and with the committee standing at his back and on either side, Joe, after much effort, and several recharrings of his stick, succeeded in producing the following brief, but intelligible, illustrated inscription upon the stone:



This met with strong expressions of approbation from the entire committee, and, fastening the inscribed stone securely between two of the boulders which crowned the heap of brush once constituting the hut, they departed, in high spirits, for Johnson's, where they related the details of their expedition to a large and interested gathering, the narrative being frequently interspersed with libations.

Thus, for several weeks, the matter rested. No more was smoke seen to rise from the site of the demolished hut, by travelers along the trail at the base of the hill, and that the mysterious stranger had heeded the warning of the com-

mittee, and taken his departure, no one doubted. One day, there came down the trail from that direction, a man leading a pack mule, upon which was loaded the usual miner's outfit. He stopped at Johnson's and purchased a number of articles, offering, in payment, a small lump of gold, such as was common in the diggings. Johnson recognized him instantly as the man who had, about two months before, interrupted the Saturday night convivialities, to request the loan of a blanket. It was not infrequent for a miner to be broke one month and have plenty of "dust" another, and so Johnson's suspicions were not aroused; but he had a curiosity to know where the man had struck it so rich, and remarked:

"You seem to have hit it about right, stranger."

"Yes, I have had very good success," replied the man in a dignified and refined tone.

"Whereabouts, may I ask?"

"Oh, up the creek a short distance," said the man, as he nodded to the proprietor of Betsyville, and resumed his journey down the trail.

A few days after this, Wabash Joe felt a prompting to visit the site of the demolished hut. It must be confessed that this impulse was not a supernatural one, but the extremely natural desire possessed by every new candidate for literary honors. He was anxious to learn what effect his literary effort had produced, and with what kind of treatment it had met at the hands of the stranger to whom it was addressed. Accordingly, he took no companion with him on his visit. Upon arriving at the scene of his artistic labors, he went, at once, to the pile of brush upon which his tablet had been deposited. There it was; but it had been laid down flat upon the brush between two boulders. Lying thereon was a piece of paper, held down by a weight,

and when his eyes rested upon this they swelled to wonderful proportions. He siezed it and eagerly turned it over and over in his hand. It was a piece of rotten quartz, as large as a walnut, and threads of free gold were protruding from it on every side. He estimated its value at fully one hundred dollars. He opened the paper, and read, with deepened interest and astonishment, the following letter:

To the extremely curious and gentlemanly Citizens of Betsyville, at Johnson's assembled, GREETING :

Not in compliance with your extremely kind and urgent invitation, but because I have made enough in the past few weeks to last me the balance of my days, do I take my departure and leave you this farewell message. To you, jointly and severally, I present my ledge of decomposed quartz, which has made me rich, and which will make you all equally rich, if you find it. In witness whereof, I have hereunto affixed this specimen of its contents, and my name, on this, the third day of September, in the year of grace, 1854.

JAMES WATSON.

As soon as he fairly comprehended the import of the letter, Joe hastened, with all speed, to Johnson's, where he duly exhibited it and the specimen to the eager Betsyites. The excitement created was the greatest known in camp, and this was intensified when Johnson related his interview with the stranger, and it was discovered that the date of his appearance and departure toward Yreka, corresponded with the date of the letter, or deed of gift. For the next two weeks, the mountain in the vicinity of the demolished hut, echoed to the tread and shouts of the eager Betsyites; but their most dilligent search met with no reward. No trace of the ledge of decomposed quartz could be found, and not the least sign of mining operations, other than those well known before, were to be seen within a radius of several miles. Inquiry at Yreka, by one of the agents

of Johnson, who visited that great mining center, developed the fact that about a week after the date of the stranger's departure, a man entered that city with a pack mule, which he sold at auction in the street. He then purchased a Wells, Fargo & Co. draft, on San Francisco, for \$70,000.00, and took his departure in the stage. The gold paid for the draft was coarse, and a portion of it was mixed with quartz, showing conclusively the character of the diggings from which it came. This, combined with the fact that no robbery was reported, and that no claim in the vicinity of Betsyville produced any such specimens as that the stranger had left as a witness to his deed of gift, was conclusive evidence, to the minds of many, that the ledge of decomposed quartz had an existence in reality, and that patient search would surely reveal its locality.

The most enthusiastic and persistent prospector was Wabash Joe, who retained possession of the specimen nugget as the perquisite of his literary genius, and who devoted his entire time to the work of discovery, until, at last, having exhausted all his means, lost his claim, and even been compelled to sell his talismanic specimen to procure the necessary "grub" upon which to live while prosecuting his search, he abandoned the camp in disgust, and was seen among the convivial crowd at Johnson's no more. From that day to this, not a year has passed that some one has not made an effort to discover the "hermit ledge," as it is known by "old-timers," yet, under the new order of affairs, and under the excitements of more recent events, the story of the hermit of the Siskiyou and his ledge of gold, finds but few to relate it, and fewer still to give it cdence.

HENRY LAURENZ.

THE LITTLE CHICKEN.

IN the spring of 1877, when Deadwood was only a rough mining camp of a few hundred inhabitants, George Miller, with his wife and two children, occupied a log cabin, chinked with mud, on one of the steep hills that surround the town. His back yard ran up the hill to its fir-crowned summit, and his front yard sloped down to City creek. All along the rocky edge of the stream, the children panned for gold and played they found it. Not content with this primitive method of placer mining, they had dug a ditch, eighteen feet long, to convey the water to their favorite "diggings," and there they had built a mimic flume to wash their doubtful gold from the undeniable gravel. On the side of the hill, they had located and named at least a dozen quartz claims, all of which were of the most promising character. But, "for want of sufficient capital," as they mournfully declared, they had not been able to develop any of their "hill interests" to the dividend paying point, with a single exception. Just above their "Cinderilla" and "Jack and the Bean-stalk" lodes was a location on which they had posted a card bearing this inscription:

NOTISE!

We, the undersigned, hereby locate this tree for the purpos of extraktng its Juse commonly Called spruse Gum.

ROBERT MILLER,
ROSIE MILLER,

This was the mine they worked the oftenest and found the most productive.

The children were twins, nine years of age, but as Robert was the larger and stronger of the two, their mother often cautioned him to "take care" of Rosie. He obeyed by taking care that she should

find his hat, run his errands, and do everything he didn't want to do himself. But as Rosie liked to serve him as much as he liked to be served, they were always very happy together. One deep yearning they had in common, and that was the desire for a pet. In Montana they had a dog and a cat and ever so many chickens, but here, as they often complained to their father, they had nothing but their mining business to think of. And so, one day, kind-hearted George Miller took \$15.00 he could ill spare, and bought a rooster and two hens—the very first that were brought into Deadwood.

"You shall have the rooster, Mary," he said to his wife, "And the little ones can have the hens."

"The big brown hen is mine," cried Robert, "'Cause I'm the biggest."

"And I'll take the little black and white chicken," cried Rosie, clapping her hands. "Oh, aint she a little love, Bobby? I guess she's a muscovy hen, don't you? Let's call 'em Dot and Tot."

"Shucks!" he answered. "That's just like a girl. We'll call old cock-a-doodle Father Abraham, and his wives Sarah and Hagar. Sarah is my hen."

"And Hagar is mine," cried Rosie joyfully.

It was three weeks after this that George Miller came home one evening, flushed with feverish excitement. "I've struck it, Mary!" he cried, embracing her. "I've drawn the best card in the deck! Look y' here; what d'you think of that rock?"

"I dun know," she said, a little wearily; for her brave heart had sunk that

day and she had been crying with homesickness.

"Oh, cheer up, old girl! We shan't be always like this. Why, you're goin' to be a regular starch, Mary, and eat duck soup every day. Just see that rock! There's richness for you. If that ain't a magnificent and gaudy display, you may take my head for a choppin' block. And it's a genuine lode, too, and a big one—you hear me? I've been working like mad for a week, and I'm tired as a dog and my head aches; but we're all right, Mary; it's the biggest thing in the hills, and don't you forget it."

Poor George Miller did not forget it through all the days of fever that followed, but raved, continually, about his bonanza "prospect," and begged his wife to "cheer up and look sassy, for you're a rich woman, Mary; yes, you're a rich woman."

When the fever had subsided, and the sick man was pronounced convalescent, little Rosie would drive the chickens into the cabin door to pay her papa a visit. He never failed to smile, however feebly, when the little procession entered, and Rosie thought it was the chickens that pleased him, even when his eyes were fixed upon her own sweet and blooming face. One evening, just at nightfall, the doctor paid his last visit.

"All you need now," he said to his patient, "is building up. If there were any chickens to be had here, I should prescribe chicken broth."

The children, who were sitting in the doorway, both looked up with a startled expression.

"We have two hens," replied Mrs. Miller; "we could take one of those."

"The hens belong to the children," said George Miller slowly, and turned his eyes to the doorway.

Robert stooped forward and examined, critically, a hole in his shoe; but Rosie came at once to her father's bed-side.

"You can have Hagar; dear Papa," she said. "You can have my little chicken." Her lips trembled, her voice broke a little, but no one observed her agitation in the faint light of the room. "Thank you," said her father, and he thought no more about it, while her mother rose and said she would kill the chicken at once, as it would be better for hanging over night.

"Let me see you," cried Robert, "I'll hold the lantern."

Little Rosie sat down on a buffalo robe in the corner, and, through a crack in the cabin wall, saw the light of the lantern ascending the hill to the chicken house. With a bursting heart, she heard the sharp cries of poor Hagar, as she was torn from the roost, and then she saw the light descend, and soon there was the sound of a swift stroke on wood, and then a wild flutter of wings, and all was still. She buried her face in the robe and tried to suppress a cry of grief and terror.

"What was that noise?" asked George Miller.

"Oh, nothing," said the doctor, "you mustn't get nervous. Good night."

The next morning, before another soul in the cabin had stirred, Rosie crept softly out of the back door, and, by the dim daylight, she saw a few dull, red spots on a pine log at the wood pile, and, near by, a few black and white feathers. Tears half blinded her, but she gathered up the feathers with tender reverence, and, arranging them like a bouquet, tied them together with a little strip of black cambric. Then, softly, she re-entered the house and placed the dear memorial of Hagar between the leaves of her bible, on a verse, in the gospel of Luke, which her mother had taught her:

Are not five sparrows sold for two farthings, and not one of them forgotten before God?

It was a very miserable morning for poor Rosie. She stayed away from the

cabin as much as possible and wandered alone by the creek. But toward noon a thought, fascinating, yet full of dread, occurred to her and she returned to the house. A delicious, savory order greeted her nostrils before she had reached the door. She felt faint, to dizziness, but she entered. To her surprise, she saw her father seated at the table.

"I tell you, Mary," he was saying, "this chicken soup of yours is gay. It sets me up considerable. Have you got a wing? I'm going to eat a wing." He had the wing on his fork when an odd sound arrested him, and, turning, he saw his daughter leaning against the door-

way, with her wide eyes, from which the tears were streaming, fixed upon his plate.

He felt a sensation of choking. "Why my little girl!" he cried, and held out to her his arms.

A year afterward, when George Miller sold a quarter interest in his bonanza "prospect" for \$25,000.00, the purchaser asked him why he called his mine "The Little Chicken."

"Oh," said he, "It's all along o' that little girl o' mine. It ain't much of a story to tell, and I don't tell it much, but it's kind o' sweet to remember."

SUE HARRY CLAGETT.

THE PORTLAND REDUCTION WORKS.

THE wonderful advance which has been made during the past three years in the quartz mining industry in the territory naturally tributary to Portland, has forced upon the city the necessity of providing facilities for the better development of mining. Such facilities must be supplied, and if Portland does not furnish them, some other city will, and will reap the rich reward sure to follow. This subject has been canvassed so much, and the history of other cities similarly situated is a matter of such common knowledge, that it seems unnecessary to enter into any argument whatever to substantiate the position here taken—that the question of fostering this rapidly expanding industry, and rendering it tributary to Portland, is the most vital one now affecting its commercial interests. That this is, to a degree, true, all admit, but few fully realize the full measure of its importance, for the reason that, notwithstanding the many and able articles which have frequently appeared in our local journals, they do

not yet possess an adequate comprehension of the vast quantity of ore now being mined in this tributary region, all of which must needs find some means for its reduction to merchantable metal. During the past three years, great discoveries have been made in Eastern Oregon, Northern Idaho and Northeastern Washington, all within comparatively easy rail communication with this city, which is the nearest point possessing all the requirements of a great mining supply depot. There are also abundant supplies of ore in the older camps of Utah, Idaho, Montana and Southern Oregon, which, under proper conditions of transportation, may be drawn upon.

The question of transportation is the only serious one which confronts the promoters of this enterprise. Hitherto the railroads centering in Portland have not pursued a policy calculated to build up manufacturing enterprises at this point. Their rates upon crude material and the manufactured article have not been such that our home products could

compete successfully with imported articles. It is very difficult to secure favorable rates to Portland for ore, because the railroads over whose lines it must come prefer to carry it East, and thus secure greater pay for the longer haul. Shortsighted as this policy is, it is the one to which they have steadfastly held. To a thinking man, one who has observed the growth of other cities under proper railroad conditions, it would seem that the companies whose lines terminate here must soon realize the advantages of building up large cities at their terminal points. The most prosperous lines are those terminating in thriving commercial and manufacturing cities, and it would appear the part of true wisdom to secure such conditions, even at the temporary sacrifice of revenue. If they do not do this, other cities and other roads will secure the business they ought to create and hold for themselves.

For the purpose of inaugurating the industry of the treatment of ores in this city, a number of our wealthy men incorporated, August 17, 1886, the Portland Reduction Works, for the sampling, assaying, smelting and refining of gold, silver and lead ores. The officers are: W. S. Ladd, president; W. A. Jones, vice president; James Steel, treasurer; J. M. Arthur, secretary. The company has erected a smelter in East Portland (see page 77), with a capacity of twelve hundred tons per month. New stacks will be erected as rapidly as the supply of ore procurable will justify. A refinery will be constructed during the present year. All the works are substantially constructed, and all the appointments are such as to insure the best possible results in the treatment of ores. For smelting, the company guarantees ninety per cent. of lead contents and ninety-five per cent. of silver. In order to promote the development of ore supplies,

the company will make no charge for sampling and assaying lots of not less than one hundred pounds, the freight upon which has been prepaid. Smelting charges will be moderate, and returns made promptly, based upon current New York prices. Ore will be sampled and assayed in lots of from three to ten tons, at \$2.50 per ton; from one to three tons, at \$4.00 per ton; lots of less than one ton, \$6.00. Each lot of ore is run through an automatic sampling machine, which insures an average assay of the whole.

The problem of smelting is a complicated one, owing to the wide divergence in the character of the ores to be treated. In ores from different ledges, the number and proportionate quantity of baser metals present vary so widely that the services of an expert chemist and metallurgist are constantly required. It was a want of appreciation of this fact, which, in the early days of quartz mining, caused so many disastrous failures, and for a long time caused quartz mining to be looked upon with disfavor. So many were these failures, that the effort to develop a quartz lode was considered a gambling enterprise, where success meant riches and failure ruin. The truth of the matter is that quartz mining and reduction of ores is a question of science and not of luck. Ignorance has sunk millions of dollars in this business, and intelligent skill has taken millions more out of it. The great element of uncertainty in mining is the original prospecting of a ledge to ascertain the nature, extent and permanence of its ore. Science may be able to offer a good opinion of the value of a quartz ledge by an examination of the outcroppings; but this opinion is by no means infallable, and nothing but the actual sinking of a shaft and the running of tunnels on the ledge can definitely settle the question. Since this

fact has been learned, there have been fewer failures in quartz mining, since the erection of mills to treat the ores of a particular ledge is now delayed until the exact nature and extent of those ores is ascertained. In other words, mining is now conducted on as conservative and careful business principles as any other industry.

The process of smelting is required for the reduction of base ores, those containing an admixture of a number of the minor metals. For this reason, as the necessary facilities for such a treatment of ores can not be had in the mining districts as cheaply as in such a commercial center as Portland, the operation of smelters here, where various grades of ore, from widely separated districts, may be brought together for treatment, can be made a very profitable business. Smelting involves the fusing of the ores into a molten mass, composed of the melted metal on the one hand, and a fusible slag on the other. The former is drawn off and cast into bullion bars, while the latter is waste, and is used for filling in low lands in the vicinity of the works. The process depends upon the formation of the slag from the base material associated with the metals. When ores do not themselves possess the necessary constituents, these ingredients, such as limestone, iron, etc., must be added, as a flux, to produce the desired result. For this purpose, the company can draw upon the limestone quarries of Southern Oregon and Puget sound, and

can procure the iron ore required at Oswego, but a few miles from the works. Enormous quantities of fuel, such as coke and charcoal, are required. The former is brought from Cardiff, Wales, and from Puget sound. Charcoal, which the company will use for the present, can be burned at many points along the lines of railway convenient for shipment to the works. In the matter of fuel of this character, a smelter here has a great advantage over one located in a region not possessing such a wealth of timber as covers our hills and mountains.

The reduction of base ores will become a great industry in Portland, if the railroads supply the proper transportation facilities. This initial movement is but the beginning of a business, which, if successful, will be an important factor in the future growth and prosperity of the city. Some impatience is expressed by those not familiar with the circumstances, because the company makes such slow progress. The managers of this enterprise are careful and successful business men, who do not believe in rash haste. Slower progress and surer results seem to them a better policy. The purchase and assembling of ore is now under way; an abundance of suitable material is in sight, and as soon as about two thousand tons of ore are collected in the company's warehouses, the furnace fires will be started. That success will reward the efforts of these gentlemen, is the wish of every one interested in our vast mineral resources.

FORTY ACRES ON PUGET SOUND.

IN connection with the article entitled "Small Farming in Oregon," on page 12, the following facts in regard to the cultivation of small tracts of land in the rich bottom lands along the rivers which flow into Puget sound, will be of interest. Forty acres of that fertile, alluvial soil, carefully cultivated, will yield better returns than four times that quantity of prairie land in the great Mississippi valley. Take forty acres of such land, connected, by short rail and water com-

munications, with some market, and estimate its value, when cleared of timber and brush, at one hundred dollars per acre. This makes an investment of \$4,000.00, to which should be added \$2,000.00 more, as the value of buildings, improvements and equipments. Lands equally as good as this, but at a greater distance from market, can be had for half the value given above.

Judiciously cultivated, the forty acres can be made to produce as follows: Ten acres of hops, averaging two thousand pounds per acre, and selling for an average price of fifteen cents per pound, which is just double the cost of production, will yield \$3,000.00, one-half of which is net profit. These figures are below the average, as many fields last year exceeded three thousand pounds per acre, and sold at from twenty-five to thirty-four cents per pound. In 1882, hops brought one dollar per pound. A meadow of fifteen acres will yield sixty tons of hay, saleable now at from \$16.00 to \$18.00 per ton, yielding a net profit of \$12.00, or a total profit of \$720.00. This yield is but average for good bottom land. There is a field of twenty-five acres in the Stuck valley, which has produced a yearly average of one hundred tons for the past seventeen years, besides serving as a pasture for stock from September till April. Here, too, is an advantage the Puget sound farmer has over his Eastern rival; his meadow furnishes good, green pasturage the entire winter. Five acres planted in potatoes will yield a total of eighteen hundred bushels, which are worth forty cents per bushel on the farm, net, on an average year, or a total of \$720.00. This is by no means more than the average yield per acre. There is an acre of ground in White river valley which has produced seven hundred bushels. Potatoes grow large and sound. After reserving four acres for house, buildings, etc., the re-

maining six acres can be planted in root crops, such as rutabagas, beets, etc., for feed. There are fields in that region which have produced in excess of twenty tons per acre, of such crops, for a series of years. Estimating the yield at only ten tons, and the net price at but half a cent per pound, and there is left a net profit of \$600.00. This gives a total net value of \$3,640.00 for the crops named. The value of stock sold, butter, eggs, fruit, berries, etc., which, by an industrious and thrifty farmer, can be made to add largely to his income, is not counted in this estimate at all. At this rate, two crops will pay the price of the farm and improvements.

Such operations, however, are not possible to every one, since the necessary capital is not in the hands of a majority of those who are looking for locations in the West. There is, however, plenty of land farther removed from market, unimproved, which can be purchased for a small sum, as well as much which can be taken up under the land laws, which, with industry and perseverance, can, in time, be rendered fully as valuable as that described above; and which will, during this process of evolution, yield the owner a good, comfortable living. In estimating the comparative value of a farm on Puget sound and in the Mississippi valley, it is necessary to take into consideration the fact that the former has a mild and equable climate, where snow and ice are almost unknown; where out-door work is possible throughout the entire winter; where the expense of "wintering" is at a minimum; where no unseasonable frosts or destructive insects kill the growing crops; and where the market for all the farmer produces is constantly expanding. There are to be found thousands of acres of these rich bottom lands in every county bordering on the sound, all covered with timber.



WASHINGTON.— LOADING LUMBER ON PUGET SOUND.

THE HOME AGAIN LEDGE.

YOU may search in vain through the length and breadth of the state of Oregon for a prettier, and, for that matter, a happier, little homestead than that in which Geoffrey Garland and his wife and two children had lived from the day of the marriage of the young couple, up to the time when our story has its beginning. Location, on the outskirts of one of the pleasantest towns in the eastern division of this state. Good taste and harmonious purposes, seconded by a reasonably well filled purse, had surrounded the cottage in which these young people had settled down for house-keeping, with fruit trees, flowers, a stable for the cow and horse, a small poultry yard, and a pen, away off in one corner of the one-acre lot, wherein the year's pork, no insignificant item in a household's expenditures, waxed fat without disturbing either the home folks or the neighbors.

I have been somewhat particular in my inventory of the surroundings of this unpretentious home, because, in the first place, I wish to suggest how many useful adjuncts to a home can find places on a small tract of land; and, secondly, because I am sure that the reader who may follow the fortunes of the husband, the wife and the children, will realize, from the very start, that the ties which bound them all to their modest possessions must have been strong. The pain of giving them into the keeping of another, and of going into banishment, must have been bitter, indeed; and the joy of returning must have been correspondingly great. For between two Christmas days, the joy of possession, the pain of banishment, and the rapture of restoration befell this little household of four.

Geoffrey Garland was a plain, matter-of-fact, every-day sort of a young man, who, from the time when he was old enough to do his own thinking, had gone to work upon the theory that life was what the gentle bard of Cambridge describes it, real and earnest; and, having been allowed to choose his own calling in life, had adopted that of civil engineer. By the time he had arrived at man's estate, he was well known as a reliable surveyor of lands, and had no difficulty in obtaining contracts, which proved so profitable that, two years later, he felt justified in marrying a daughter of an old friend, five

years his junior, but well fitted by native good sense, and the teachings of a good mother, to commence life on a small capital, with every prospect of a reasonable increase in basket and store as the years rolled by.

This story finds them transferred into the tree-embowered home in which they lived. Three children had been born to them, the second of whom they had followed in its infancy to the quiet cemetery, which they could see from their window. Gracie, the eldest, had seen her eighth birth-day, while Henry, the youngest, was waiting anxiously for his fourth at the time our story opens. Gracie was one of those peculiar children, wise beyond her years, affectionate to a degree, who, but for a visible stratum of good, hard sense, might make one tremble for her future, in the event any sudden mishap should befall her in the loss of one dear to her. Devoted to her mother and brother, and to the memory of the little sister she had followed to her early grave, her attachment to her father was of a singularly passionate and absorbing character. To her, he was the embodiment of all that was good and trustworthy. In a less perfectly ordered household, her assumption of the right of bestowing all those little attentions which the wife finds delight in, might have jarred upon the peace of the quiet home; but when Gracie met her father at the door and took his hat and overcoat, and, hastening into the sitting-room, produced the well warmed slippers and the dressing gown, the young wife only smiled and contented herself with the never-neglected caress and the smile that was an unspoken "God bless you."

With all her deep sensitiveness and her unbounded wealth of affection, our little friend, Gracie, was fortunately devoid of a tendency to romantic imaginings. In fact, she was essentially practical, except in one direction. To her the good genius of Christmastide, Santa Claus, was a mysterious, but none the less tangible, entity. As the seasons came and went, she had been accustomed to find in the chimney corner whatever she had most desired. If, for instance, she had seen a book, as the holiday season came on, which she fancied, that book hung close to her stocking when the morning visit

was paid to the spot where gifts for good children are stored. A few days before her seventh Christmas dawned, she wondered if Santa Claus knew how much she would like a canary bird, and when her eyes opened on Christmas morning, she knew that the music she had heard when half awakened was not the carol of angels, but the song of a master of bird melody, who was making the whole house vocal with his matins. It was this faith in Santa Claus which did so much to lighten and brighten both for her and her mother, the whole weary year of 1885.

Geoffrey Garland was not a careless business man, nor was he a speculator for the mere sake of gain. Like many another man, however, he was not averse to increasing his worldly store to an extent which would relieve him of the necessity of those long and toilsome journeys into forest and wilderness, which his calling imposed upon him. Devoted to his family, he counted those days lost which separated him from them, and believing that the prospect of engaging in some local business, in the town in which his home was located, justified him in making an effort to increase his worldly possessions, he gave the subject of how to compass his proposed ends his most careful consideration. His profession had naturally brought him into close connection with mines and mining interests. He had seen many a man who came into a district with only his blankets, frying-pan, coffee-pot and tin cup, the traditional adjuncts of the miner's outfit, leave it with "a home stake" sufficient for all the purposes of a contented life. For several years he had meditated upon the propriety of trying his luck in this direction. In the spring of 1884 he finally resolved to enter upon this somewhat hazardous quest. It may readily be believed that among his acquaintances, there were not lacking those who professed to know just where paying lodes of precious metal were to be found. One of these, a friend of many years' standing, and who was doubtless as sincere as man could be in his belief, finally persuaded Garland to take an interest in a sequestered ledge, which, for lack of means to operate it, had been held for years by the performance of the slight annual labor required by the laws of the district. The new partner had money, the original locator had zeal, unlimited faith and "a plentiful lack" of discretion. Shafts were sunk, tunnels were run, assays were made from carefully selected specimens, of course, timbers were gotten out for the mill to be, experts, who were no experts,

were employed to demonstrate the existence of a true fissure vein, and—without going into the painful details—it is sufficient for the purposes of this story to state that, before snow flew, Garland's money was gone, his over-due notes for a sum almost equal to the value of his homestead were in the hands of a local money lender, and the utter worthlessness of the Garland ledge, for so it had been named, was well known from Portland to Helena and from the Columbia river to the California line. This was a new experience to Garland.

Up to the time of engaging in this unfortunate enterprise, he had possessed enough sense to keep out of debt, and now that he was in it, he realized its uncomfortable character to the fullest extent. His wife had not been very favorably impressed with the mining movement, but as her business in life had been, and still was, to keep home tidy and care for her dear ones, she had not inquired very particularly into the matter. She was quietly informed by her husband of the unpleasant condition of affairs, and as quietly remarked that there was nothing for it, as far as she could see, except to begin life over again and profit by their unfortunate experiences. She suggested that the homestead might, by enlarging the poultry yard, purchasing another cow, selling the surplus fruit, etc., be made tributary to the recoupment of their unfortunate losses. Here, however, she was met by the, to her, astounding declaration from her husband, that, in order to meet the outstanding indebtedness and obtain a little capital for future operations, it would be necessary to sell or mortgage the homestead. The reader will very easily realize that this announcement shocked and pained the gentle woman, whose life had for years been bounded by the four walls of her home, and whose Garden of Eden was enclosed by the picket fence which kept intruders out of their solitary acre of land. Simply remarking to her husband that he knew best what was necessary to be done, she requested that the matter should be arranged as speedily as possible, in order that the household might accommodate itself to the new order of things. She asked him what course he proposed to follow for himself. Geoffrey Garland realized then, as never before, that he was one of the fortunate of his race; that he had indeed a helpmeet for a wife. Rising from his seat and bending over his wife, he bestowed upon her a caress of passionate tenderness, and told her that in the evening he would be prepared to answer her question, and requested her to allow Gracie to be present at the interview.

Returning to his office, he devoted himself to a serious consideration of the problem before him. Had the misfortune which had overtaken him resulted from any ordinary business miscarriage, it is altogether probable that ordinary methods of recovering his losses would have been the only ones which would have suggested themselves to his mind. But our slow-going, "safe find, safe bind" friend, Garland, had made a notable departure from the habits of a lifetime. He had left the beaten track of years to wander over the shining path which has lured more men to losses than it has guided to prosperity. He was fairly caught by the glamour, and, to his mind, there appeared but one way out of his troubles. The whole country was agog with reports of immeasurable wealth in the Cœur d'Alene region. Thither his thoughts tended and thither his footsteps needs must turn. His experience as a surveyor had not left him in ignorance of the hardships which awaited him as prospector and miner amid the snow and ice and rocks of the new district. But Garland was young and strong, and inspired by the a masterful passion to restore to his wife and children the modest competence, the loss of which seemed to him like a deliberate fault of his own. In spite of his old partner's failure in the Garland ledge, Garland retained perfect faith in his honesty, his courage and his industry, and, sending a messenger for him, he proposed that they should, at the earliest practicable moment, start for "the new diggings," and once more tempt the fickle jade, fortune, who had played them such a seemingly scurvy trick. When Garland had unfolded his plan to his friend, Stephenson, the latter looked up and said, "Garland, old fellow, you have only anticipated a proposition I was about to make to you. This very morning, I received a letter from an old friend, who has plenty of what we both lack just now, and that, I need hardly say, is money, which letter enclosed a check for a few hundred dollars, accompanied by a request that I should select a trustworthy companion and start, as soon as practicable, for the Cœur d'Alene region and engage in prospecting on joint account, it being his purpose to join the party during the coming summer."

Here, to Garland's hopeful spirit, was indeed a gleam of silver lining to the gloomy cloud that had floated athwart his sky. The two friends rapidly mapped out a plan of operations, decided upon the day of their departure, and parted for the day, when Garland, finding that the hour for the promised interview with his wife and daughter was at hand, sought their presence.

Entering the cosy sitting-room, in which so many happy hours had been passed, Geoffrey Garland seated himself near his wife, and, calling Gracie to him, said: "Little girl, I have come in this evening to tell you and mother that I have a long journey to make, and must be absent many months. I suppose, child as you are, you have heard of bad luck. Well, Gracie, something of that sort has overtaken this family. I find it necessary to mortgage our home. You and mother and little brother will have to live in a smaller house and do without many of the comforts and elegancies you have been accustomed to. What does my little girl think of all this?"

This speech of Garland was really intended for the mother, instead of the child. It broke the ice for a full and unreserved discussion of the situation, and resulted in a perfect understanding between husband and wife. As for Gracie, she was full of curious questionings as to the region her father was to visit. He took particular pains to explain to her the object of his quest and the character of the country he was about to visit, and to unfold to her childish understanding his hopes that he would be able to locate a ledge, out of which he could dig enough of the precious metal to enable him to regain the homestead, which, for a while, they all would be called upon to leave with so much regret. "And now, little girl," said he, "I am going to give you the right to tell me what name I shall give this wonderful ledge, which is to bring us all together again, and give us back the old homestead, with the horse and cow and chickens and pigs and fruits and flowers."

Gracie sat in a brown study. Much of what passed in this memorable family council was beyond her childish comprehension, but she fully realized that there was to be a parting, and, with childish and unreasoning, but none the less perfect faith, believed there was to be, at no very distant day, a reunion and complete restoration of the happy condition of affairs which had made her young life so full of joy and beauty. After, for her, a long period of silence, she spoke. "Papa," said she, "when you find that ledge, just remember that it means that you are to depend on it to bring you back to mother and Harry and me and then take a pencil and a piece of paper and write on it, 'Home Again Ledge,' and call it that and nothing else." And so this momentous question was settled, and Geoffrey Garland gave his little girl a bond in the shape of a long kiss, hallowed with a tear, that he would obey her injunction to the letter. The evening wore away in dis-

cussions of plans for the future, and just before the good-nights were given, Mr. Garland called Gracie once more to his side, and said, "Gracie, you have often heard it said that Santa Claus makes his summer home up among the mountain snows. If such a thing should happen as that I should meet old Santa Claus, in that region of ice and snow to which I am going, what shall I tell him to bring my darling little girl for a Christmas present, provided I shall not be able to get back before that day?"

"Papa," said Gracie, "please don't talk to me about not coming back to eat Christmas dinner with us. You know there has never been a Christmas day, since I was born, when you have not sat at the head of the table and helped us all to turkey and mince pie. And now, I just want you to tell Santa Claus, if you see him, that the present I want him to bring me next Christmas, is just my own dear papa, and nothing else."

The happy father clasped his darling closer to his breast, and told her that he would do his very best to have matters happen just as she wished. And then, after the family devotions, which had never been intermitted for a single evening since the ceremony which made Garland the husband of his wife, had been performed, the household sank to slumber.

On the day following the family council, described in the preceding chapter, the work of mortgaging the dear old homestead of the Garlands was the task, to the performance of which they must needs address themselves. Before describing this momentous event, I wish to remind the reader that I have already stated that Garland's overdue notes for a large amount were in the hands of a local money lender. It may be well enough to say a few words about this personage, not at all by way of presenting him as a type of his class, for there is no earthly reason why men who loan money on interest should be grouped as a class. It does not follow, because a man has been fortunate or thrifty, and has money to loan, that he is either a Shylock or a boor. Obed Wintermute, Garland's creditor, was neither. He was a man who, to a handsome inheritance from laborious parents, had added the increment of a life of industry. He had nearly reached the three score point in the calendar of his years. It would be difficult to describe his personnel in such a manner as to convey a realizing idea of the absurdity of his general appearance. His head, sloping upward from his eyebrows in front, and from a line drawn around his skull at a point just be-

low the ears, terminated in an apex, ridiculously narrow and sharp. A pair of deep set, ferret-like eyes looked out from under three watery, sandy eyebrows. A few straggling bristles did duty as moustache, while his retreating chin slid away into a neck of disproportionate size. If, to these singular features, we add an abnormally long pair of arms, a disproportionately short pair of legs, and a painfully protuberant paunch, the whole attired daily, month in and month out, in black broadcloth clothes, bought ready-made, and of execrable fit, some idea may be had of the appearance of the local Cæsus of Garland's neighborhood. The money lender was not without his good qualities. He seemed to feel a certain local pride in his surroundings, and gave liberally to works of public improvement. He occupied a house, which, in white and green paint, was distressingly new in all of its belongings and suggestions. And when, upon state occasions, he emerged therefrom, his black broadcloth vying with his silk hat in shining glossiness, and his enormous watch chain and tremendous gold-headed cane adding still further brilliancy to the entire outfit, a general sense of an incipient conflagration seemed to overtake the beholder. Obed was unmarried, but had managed to secure the services of a Mrs. Becky Scrimgeour as housekeeper, an antiquated female, who, presuming upon some far-off connection, by way of marriage, with Mrs. Geoffrey Garland, had drifted to the locality of our story in search of her connections, and, incidentally, of a chance to better her fortunes. I shall not attempt to describe this precious piece of femininity. There was not a drop of the blood of Mrs. Garland's race in her body. She possessed, in full measure, all of those elements of human nature which give such distinctive character to Byron's celebrated Marplot, who, according to the poet, was

Born in a garret, in a kitchen bred.

With all her repulsive characteristics, she was a notable housewife and a good cook, and, as she faithfully discharged the functions of the establishment of Obed Wintermute, her vinegary fault findings and occasional intermeddlings with her employer's affairs, had never seriously disturbed the relations existing between them. It is betraying no confidence to state that Obed's housekeeper was a partially divorced woman, and this fact was known to her employer. Such being the case, he was entirely free from any machinations looking to his capture by his housekeeper. Mr. Wintermute, in spite of his advancing years, had not abandoned the idea of becoming a Benedict. More than

once, after an unusually good dinner, supplemented by the rum toddy which usually followed this repast, he had unbosomed himself on that subject, to his housekeeper, and hinted pretty broadly that if she could put him in the way of securing a bride with two qualifications, youth and good looks, he would take it upon himself to see that she was comfortably established in a lodging house, to be the proprietor of such an institution seeming to be the height of Mrs. Becky's ambition. She had given the subject a good deal of consideration, but up to the time of our story, nothing definite had come of her cogitations. Like all selfish and narrow minded people, Mrs. Becky was essentially revengeful in disposition. When she presented herself to Mrs. Garland and told her that her third cousin had married Mrs. Garland's aunt's husband's brother, Mrs. Garland admitted that she had a dim remembrance of the occurrence of that interesting event, and, seeing that it was expected of her to make proof of the hospitalities of her quiet little home, she did so. Geoffrey Garland said nothing, but when the unexpected visit had been prolonged into a month's sojourn, he took occasion, one morning at the breakfast table, to call attention to the fact that the local paper contained an advertisement for a housekeeper, and added that he was ready to vouch for the pecuniary responsibility of the advertiser, and added, further, that if Mrs. Becky chose to apply for the vacant position, his influence was at her command. Mrs. Becky at once saw that she had outstayed her welcome, and not being altogether devoid of common sense, she acted accordingly, and, within forty-eight hours, was installed in the castle Wintermute, where, for more than five years, she carried the housekeeper's keys, lorded it over the cook, chamber-maid and stable-boy, and—as the truth must be told—nursed her wrath against Geoffrey Garland and his wife, and kept it warm. The hope of finding an opportunity to "put a spider in the cup" of her far-off connection's connubial felicity, was her thought by day and her dream by night. She had been too cunning, however, to betray this desire to any living human being. Neither Garland nor his wife, nor Wintermute, dreamed of such feelings on her part. She had kept up a visiting acquaintance with her connections. Now and then Gracie and Harry would be hailed by Mrs. Becky, as they were returning from school, and fairly loaded with delicacies from the Wintermute pantry. As year after year went by, and she saw no opportunity to gratify her unreasoning hate, she fretted more and more

over her baffled spite. She knew too well how utterly useless would be the attempt to sow the seeds of discord and suspicion between this happily mated pair. By some chance, the very fact of Garland's pecuniary reverses had failed to reach her ears, until the day, on the evening of which, the family council of the Garlands was held. On the morning of that day, Garland had met Wintermute, and told him frankly that only by the sale or mortgage of his homestead, could he hope to secure to him the payment of the large sum due him, and also explained at length his proposed mining expedition. Let us be just to Wintermute. He had advanced money to Garland on business principles, as a business proposition. He regarded the investment as a reasonably safe one, and, beyond getting his own, with interest, gave no other thought to the transaction. Wintermute was neither a libertine nor a scoundrel *per se*, and the idea of mixing up with the affair Garland's lovely wife, who had played the agreeable hostess to him more than a score of times, never crossed his mind. But temptation comes in queer shapes sometimes.

About the same hour in which Garland and his family held the memorable council, Wintermute was eating an unusually good dinner, with Mrs. Becky as his *vis-a-vis*. The rum toddy was mollifying in its effects, and, as the glass was emptied, Obed turned to his housekeeper and said, "I suppose, Mrs. Scrimegour, you have heard of the misfortunes which have overtaken Mr. Garland?" Mrs. Becky had been sitting, with half closed eyes, for half an hour, and by a singular coincidence, her thoughts had been of the "Garland crowd," as she always named them to herself. There had been unusual bitterness in her meditations. The fact that Mr. Wintermute had coupled Garland's name with misfortune, was honey to her soul. But, by no outward look or gesture, did she betray her interest in the matter. She simply replied, "I had not heard of it. Are some of the family ill?"

And then, Obed, with much unnecessary proximity, told his housekeeper the whole story of the borrowed money, the profitless mine, the proposed mortgage or sale of the homestead, and Garland's determination to seek recoupment of his losses in the new mining region. During the recital, Mrs. Becky had arisen from her seat and deftly concocted a second toddy, an infrequent, but not altogether forbidden, occurrence. Mechanically, Obed sipped the seductive beverage, and, as Mrs. Scrimegour watched his face flush and his eyes take on something of a sparkle, she wheeled an easy chair to the

fireside and suggested a quiet talk over the matter. And then, with a skill that was scarcely less than devilish, she broached a plan to Wintermute, which, as he took in its details, seemed to awaken in his sluggish veins a fire, to which he had long been a stranger.

"Why, look you, Mr. Wintermute!" said the temptress, when she found her employer in a pliant mood, "Here is a careless, fortune-hunting boy, who risks the roof that covers the heads of his wife and children, on a chance that no sensible head of a household ought to think of. He loses it all, and then, instead of going to work at a trade, or profession if you choose, which gave him and them one competence, stands ready to sell out the very carpets from under their feet, and goes trapping off to a wilderness, under a pretense of finding a fortune in a pile of rocks. Now, mark my words, Garland is no better than any other man. He is off for good. Refuse his mortgage, take a deed to the homestead, give him, if you choose, an agreement to sell it back to him at any time, say within eighteen months, if he returns with the money. He will never come back. Mary Garland, within a year, will be haunting the courts with a bill for a divorce. Help her to get it. Lay siege to her heart and hand. Marry her and have a wife of your own."

This is but the merest outline of Mrs. Becky's daring, unscrupulous and criminal scheme for revenge. Suffice it to say that, before the interview was ended, she had Wintermute fully committed to the scheme. The wizened old man crept off to bed to dream of a fool's paradise, and, on the following day, Garland and his wife signed a deed to the homestead, receiving, in return, a few hundred dollars and an agreement by which Wintermute bound himself to have the garden and orchard kept in perfect order, and the live stock cared for, and at any time, within eighteen months, to reconvey the property to Garland, should he return and repay the moneys advanced, with interest, and expenses of keeping the place. It was further agreed that an old man, Jabez Long, a sort of factotum of the vicinity, should act as keeper of the premises until the redemptory period should have expired. The deed was signed in the sitting room of the homestead, from which, on the following day, the family were to take their departure. Mrs. Scrimegour was one of the witnesses to the two conveyances, and deep and almost tearful was the sympathy she extended to her very dear friends, the "Garland crowd," because of the adversities which had overtaken them. Poor old Wintermute stood around like

Jack o' Dreams, while the lawyers and notaries did their work, and but for the coachings given him by the housekeeper, would have made a lamentable failure of the whole affair.

The day following the transfer witnessed the departure of the Garland family from the homestead. The terms of sale included the greater part of the household furniture, the handsome parlor fittings, the pictures, bric-a-brac, etc. It was part of the plan suggested to Wintermute by Mistress Becky to insist upon these hard terms. Her vindictive and spiteful nature suggested to her the possibility of the hope on Mrs. Garland's part of regaining these treasured memorials of happy days, proving an ally in her proposed work of inducing the devoted little wife to listen to Mrs. Becky's suggestions of divorce when the way should be open for that proceeding. Turning the same fallacious system of reckoning, for it could not be called reasoning, this wretched conspirator against peace and honor had taught Wintermute the necessity of appearing in all things to consult the feelings and wishes of the soon-to-be-exiled wife and mother, and to this end had suggested the employment of Jabez Long as keeper of the premises, establishing at the same time his motherly old wife as guardian of the furniture, pictures, etc. Suffice it to say that Becky Scrimegour could, by no possibility, have more effectually plotted to bring her machinations to naught than by selecting old Jabez Long and his wife for their respective offices. Between Garland and his wife and their two children and these two worthy people there existed ties of the most endearing and enduring character. Mrs. Long had nursed Mary Garland and her children through severe illness, and it was the good old woman's hands which had robed their dead darling for the grave. Garland and Jabez were fast friends, and it was to the former no slight relief that to such faithful keeping were committed the home and its appurtenances, which he held so dear.

Taking with them, therefore, such articles as were necessary to furnish plainly the little three-roomed cottage in which Mary Garland and her children were to await the husband and father's return, they left their pleasant home, and at nightfall they gathered round a frugal board for a farewell supper. The reader can easily imagine how much of tender regret and solicitous apprehension mingled with the conversation on that occasion. Discontent and repining did little to cast a gloom over the meal. Supper over, the evening was passed as usual until the hour for household prayers, upon which we will

not intrude. After an early breakfast on the succeeding morning, the "good-bye" was said. The modest sum Garland was able to leave with his wife promised to suffice for a few months. It was early in the season to make a start to the mines, but delays, Garland thought, were dangerous, and before nine o'clock he and his partner were riding their horses at a brisk canter out of the streets of the pleasant town, in which he had found so many years a prosperous home. To say that no misgivings as to his success cast a cloud over Garland's spirit, would be to present him to the reader as an unthinking enthusiast, which he was not. He was doing what he thought was right. If the worst came to the worst there was a life insurance policy in favor of his wife, for a snug sum, which, against her wishes and unknown to her, he had, at the beginning of his mining speculation, taken out, and paid the premiums for four years, which was in safe hands. Dismissing all fears and gloomy forebodings, Garland and his partner jogged steadily on, and at the end of the third day found themselves at the point of departure for the Cœur d'Alene region. Here Garland's companion found another letter from his Eastern friend awaiting him, bidding him be of good cheer, authorizing him to draw on him for any further funds needed for a good outfit, and informing him that as soon as possible he would join the party in the mines. This Eastern backer of the Garland expedition meant business. He had made a handsome little pile in Colorado mines, and had considerable faith in the Cœur d'Alene region. In a postscript to the advices just spoken of, he authorized his agent, in the event of his discovery and location of promising mines before he joined the party, to employ all necessary labor for prospecting them thoroughly. Under these circumstances, Garland and his partner started for the scene of their future labors with light hearts and pleasing anticipations.

It is unnecessary, for the purposes of this narrative, to follow them along the track of their toilsome journey. In due time they were in the very heart of the metaliferous region. They soon found that ledges giving promise of good returns were not at the disposal of chance comers. Many weary days were spent in what seemed to be a vain search. If favorable outcroppings were found, adverse claimants were by no means slow in asserting prior rights. The days ran into weeks, and the letters which Garland sent home were not calculated to inspire very bright hopes in the minds of those who so anxiously waited for his return. The

weeks lengthened into months, nearly three of them, and the funds at the disposal of the two fortune hunters were running low. At last, to their infinite relief, their Eastern friend unexpectedly put in an appearance at the door of their cabin. In exchange for the hearty welcome extended to him he gave "the boys" a cheery greeting, and listened, with a quizzical sort of smile on his good-natured face, to the accounts which they gave him of their operations to date. When they had concluded, he said: "Gentleman, if I am not mistaken, you have been following a cold trail. You have been pottering around here looking for a ledge, when, according to my view of the case, you should have been sinking a shaft to the bed rock in search of a placer claim. To-morrow—for I need a day's rest—we will hire three or four good men, lay in a supply of provisions, make a couple of days' further march up the creek and commence legitimate mining operations." The end of the third day following found the party in camp in the "forest primeval." There was plenty of work for all, and it was prosecuted without intermission. For nine long weeks axe and pick and shovel were plied vigorously, with, perhaps, as few indications of final success as ever repaid the toil of the prospector. Letters to and from home were infrequent. Garland, not much accustomed to despondency, began to wonder whether it would not have been better to have remained at home and trusted to chain and compass for restored fortune. Even our Eastern friend, too, began to think that he had been mistaken in "the indications." Toward the close of Saturday, however, which rounded out a week of excessive toil, there was something in the character of the dirt brought up from the bottom of the shaft which made the eyes of the experienced miners in the party a shade brighter than usual, and at length, just as the sun dropped behind the trees, the "pay streak" was reached, and all doubt was dispelled. Garland's partner had, at odd times, disclosed to his Eastern friend the full story of his and Garland's misfortunes, and it was with no small degree of satisfaction that the capitalist, on the following day, in a confidential interview with his associates, informed Garland that he was at liberty to draw on him for a sum sufficient to redeem his homestead, and then advised him to lose no time in returning to his family, in order that they might be restored to the pleasant surroundings of the past. At this juncture, Garland recited the story of the family council, and told of Grace's request that he would call the ledge, if found,

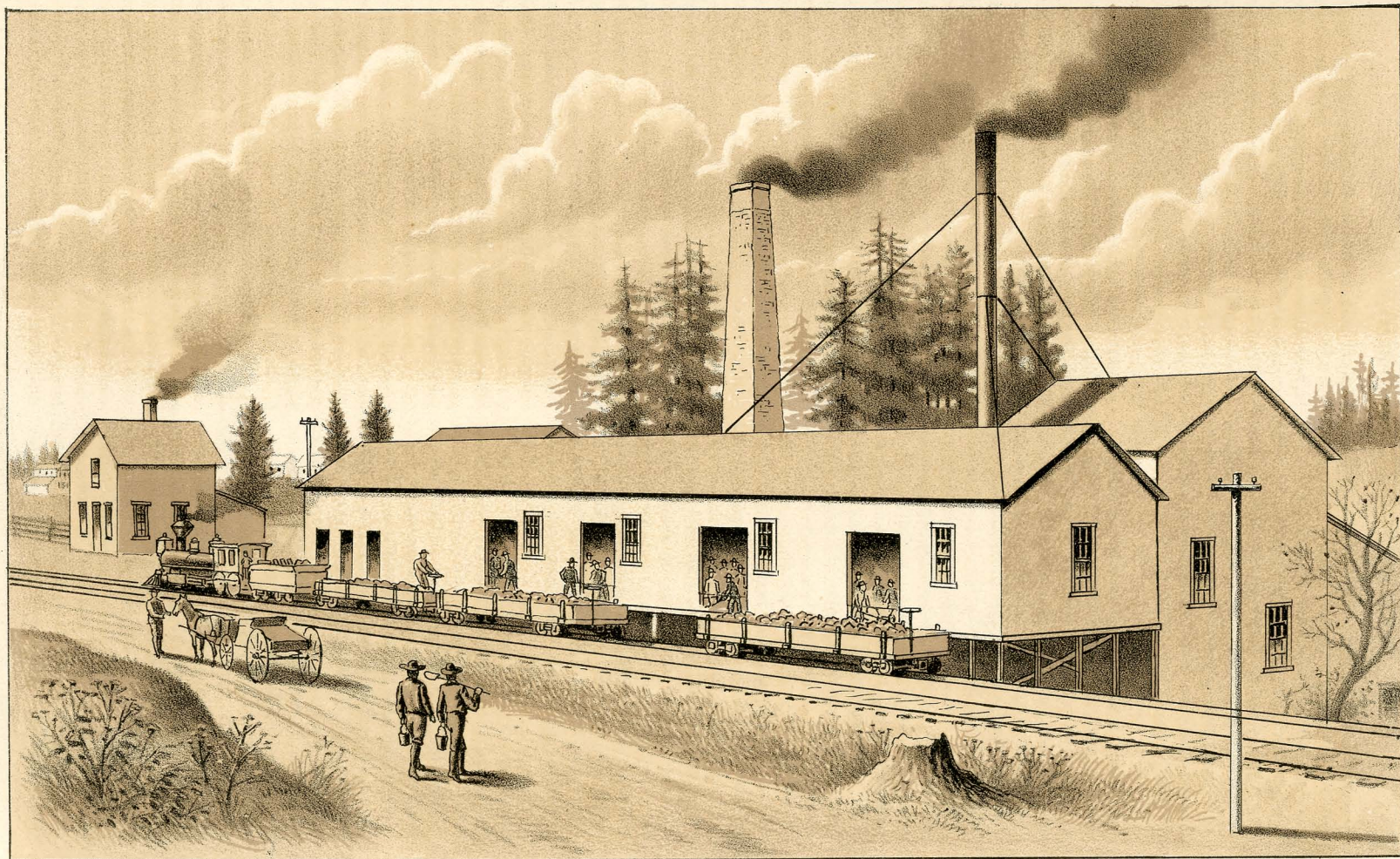
"The Home Again Ledge." Here was a dilemma. Instead of a ledge, a placer claim had been located; but a compromise was effected, and with all due formalities the claim was entitled and recorded "The Home Again Claim." The brief summer of the mountains was over. Snow had already fallen, and it was thought best to devote a few days to putting the claim in shape to withstand the rough usage of the coming winter, to assist in doing which, Garland decided to remain a short while. A brief letter, bearing the good tidings, was sent home, and after a long talk over the pleasant prospects before them, the three associates lay down to pleasant dreams.

By some strange chance, the letter just spoken of never reached its destination. A week later, as ill luck would have it, a falling limb struck Garland in such a manner as to deprive him of his sensibility and give rise to the gravest fears as to the possibility of his recovery. It is needless to say that all such skill and attention as was attainable in that remote region, was lavished upon the unfortunate man by his friends and associates. His partner, animated, doubtless, by the kindest motives, failed to apprise Garland's family of the accident which had befallen its head. Here, then, do we find the devoted wife and mother, and the expectant children, doomed to the long agony of hope deferred. Mrs. Betty was not slow in learning from the prattle of the children, that there was a failure in the receipt of letters from the absent husband and father. She chuckled accordingly. She fed Wintermute's sick fancy on the devil's broth of her foul suspicions. As will be seen further on, she even ventured to broach the subject to the tortured wife. Be sure, she made the best of her evil opportunity. Happily, as we shall see, she had her reward.

In the meantime, for five weary weeks, Garland lay helpless and unconscious. Winter had come in earnest. His friends were beginning to discuss the propriety of endeavoring to bear him, by relays of strong hands, across the intervening snows, to the nearest point on the railroad, and thence to his afflicted family. To the surprise, and, we may add, the joy, of the whole camp, one bright Sabbath morning, Garland awoke, clothed in his right mind, but weak as an infant. He found it difficult to realize that for weeks he had been even as a dead man. His first thoughts were of his family. When he learned that they had not been made acquainted with his misfortunes, he attempted to rise from his rough couch, declaring that he would not rest night or day until he had re-

joined them. The poor fellow soon realized that he had not strength enough to walk across the room, much less across the mountains. But, if, in a mining camp, one sees much of the rough, uncouth, selfish and disagreeable side of human nature, among the men who make up the camp, he will also see charity, courage, unselfishness and devotion to a fellow man, in their most attractive aspects. Garland's story had by this time become pretty well known throughout the Cœur d'Alene region. The good news of his partial recovery was quickly on every lip. And it soon became known that Gracie wanted Santa Claus to bring her own dear papa for a Christmas gift, and nothing else. It was hardly more than the work of a moment for these red-shirted wielders of the pick and shovel and crow-bar to resolve that Gracie should have her Christmas gift. A comfortable stretcher was made ready, thirty men volunteered to form a relay corps, and, on the fifteenth of December, 1885, the procession started for the nearest point on the railroad. Garland's partner went along as nurse and general director, and, in five days, the singular procession brought up in front of the station house. The sturdy mountaineers bade a cheery good-bye to their comrade, and Garland instructing his partner to write certain directions to Jabez Long, the nature of which will be made apparent in the next, and concluding chapter, curled himself up for a long sleep by a warm fire until the train, which would bear him to all he held dear in life, should arrive.

I have intimated, in a previous chapter, that Mrs. Becky made a mistake when she suggested Jabez Long and wife as keepers of the sequestered homestead and fixtures, if she thought that, directly or indirectly, she would be able to use them in her plot against the "Garland crowd." This action, on her part, was one of those blind moves made by the malicious, in which they take counsel of their desires, instead of judgment. Mrs. Scrimgeour was not long in finding this to be a fact. In less than a month after Garland had ridden away, arrayed in her "best bib and tucker," and looking as demure as a quaker, she made a ceremonious call on good Mrs. Long. To her surprise and chagrin, she was ushered into the sitting room, instead of the parlor. Mrs. Long was the soul of charitable kindness, but, at the same time, the personification of that worldly wisdom which is learned in the school of adversity. She and Jabez had buried all their children in their childhood, and for thirty years had lived a toil-



OREGON.—PORTLAND REDUCTION WORKS. EAST PORTLAND.

some life for and with each other. Mrs. Scrimgeour had never called on this worthy pair while they were occupying their own humble cottage, and Mrs. Long could see no good reason for the tardy interest in them, manifested by Obed Wintermute's housekeeper, in their new position. There was a good deal of skillful fencing between the two women, and at length, when Mrs. Becky, in a roundabout way, suggested the possibility of Garland falling into the habitual ways of camp life, there was such a sudden iciness in Mrs. Long's demeanor that her guest thought it the wisest way to change the subject, and, soon afterward, terminated her first and only visit to the Longs. That same evening, having given the cook a holiday, and exhausted her own ingenuity in getting up Wintermute's favorite dishes for dinner, after the meal was over, and, as on a former occasion, a duplicate rum toddy disposed of, she proceeded in her most cat-like manner to sound Wintermute on the subject of dispensing with Mrs. Long's services as custodian of the Garlands' household goods. Thereupon there was a scene. I have already intimated that Wintermute was not *per se* a scoundrel. The fact of the matter is, the old man's conscience had more than once pricked him since Garland had ridden away. Gracie and Harry had been something of pets with him. When he had dined with their father and mother, they had not been slow to exhibit their childish treasures to him, and, now that their father was gone, they frequently stopped to ask him some childish question as to his whereabouts and the possible date of his return. When, therefore, his housekeeper suggested the change above alluded to, he curtly replied, "Matters will remain as they are," and, yawning sleepily, took up a light and retired to his snuggery. This was more gall and wormwood to Mrs. Becky and whetted her appetite for revenge.

From time to time, this vixenish marplot dropped in on Mrs. Garland. It was not until more than six months after Garland's departure that she ventured to hint, even remotely, to the lonely wife, that her husband might be found in the ranks of the revelers in the far off mining camp. This impudent suggestion was met with a look in which contempt seemed to struggle for mastery with amusement, in Mrs. Garland's blue eyes. Mrs. Becky slunk out of the house, chop fallen, but more vicious and more revengeful than ever. From time to time, as opportunity served, she nagged Wintermute, who, grown somewhat familiar with the contemplation of his proposed crime, began to play an awkward sort of a second to his housekeep-

er's plans. The old dotard began to cheat himself with the belief that he was actually in love with Mrs. Garland, and that his feelings were taking on a fatherly shape toward her children; and, as Mrs. Becky began to be bolder in her suggestions, and more importunate in her demands that he should make some advances toward the object had in view, professed himself ready to do so, if Becky would only point out the way.

In the meantime, the periodical letter from the absent husband was over due, and, as above recited, failed to arrive. When more than a month had passed by without hearing from Geoffrey Garland, his wife began to manifest some uneasiness. And here the good sense and helpful and hopeful spirit of old Jabez Long and his good wife came to the rescue. In homely, but eloquent, terms, they reminded the anxious woman of the unbroken felicity of her life with her husband, and scouted at the idea that anything but some chance miscarriage of the mails in the wild region where Geoffrey Garland was hidden away for a time, was to blame for the silence so painful and so trying to the household. And, as good luck would have it, a returning prospector, whom Jabez had met by chance, had informed him that Garland and his company were at work in a remote part of the district, with fair prospects of success. This news did much to reassure Mary Garland. As for Gracie, was not Christmastide drawing near? And did not she, with childhood's unquestioning faith, "just know" that Santa Claus would bring her her own dear papa for a Christmas gift?

Thus matters wore on until, as heretofore shown forth in this veracious narrative, the fact of the failure of letters to arrive became known to Mrs. Becky; and, on this hint, she spurred Obed Wintermute to an overt act. It was three days before Christmas when this misled compound of senility and conceit flamed out in lustrous ready-made broadcloth and silk hat, not forgetting the shining watch guard and gold headed cane, and presented himself, all smirking, at the Garland cottage. Words cannot picture the amazement of the little woman, when, after dawdling away an hour in insufferable commonplaces, he awkwardly blurted out a suggestion that Garland, failing in his quest, had sought fresh fields and pastures new. "But," in effect, said this antiquated bundle of folly, "Mrs. Garland, you may be sure that, while I live, you will lack neither a friend nor a protector. The courts of the country will right your wrongs, and then —" But I will not disgust

the reader with a recital of Wintermute's proposal to become the husband of Mary Garland, when once she was free. His absurd harangue was concluded by the statement that he and Mrs. Becky would call in a carriage for Mrs. Garland and the children on Christmas day, and they would all dine together at castle Wintermute. And then Wintermute bowed himself out, leaving his hostess in what is generally termed "a state of mind."

Right here, let us do an act of justice to Mrs. Becky. She was no fool. She had seen enough to know that the idea of divorce was as foreign to the mind of Mary Garland as the possibility that she could, or would, become Wintermute's wife under any circumstances. But she had determined to wound this tender, faithful, devoted woman, and when Obed Wintermute, drunk with his idle hopes, returned home that day and recounted his adventures, she felt that nothing was lacking but the Christmas day ride to the house where her pet aversion lived, and the sight of her face, suffused with shame and sorrow, to fill the cup of her revenge. Thus matters stood at Wintermute's three days before Christmas. The poor old man badgered the housekeeper, the cook and the serving maid, on the subject of the Christmas dinner, until a revolt seemed imminent in the household, and was, probably, only averted by shrewd Mrs. Becky mixing both the first and second toddies of that memorable day a trifle stronger than usual.

I return, for a moment, to the station where Garland and his faithful partner were awaiting the train which would bear them home. The latter, pursuant to Garland's instructions, had written to Jabez Long, advising him that they proposed to arrive at home about 10 p. m. on Christmas eve, and requesting him to notify Mrs. Garland of the fact, and, if possible, keep the matter a profound secret from all others, even from Gracie. But little remains to be told. Jabez received the good tidings on the morning of the 24th of December. An hour after its receipt, he walked over to Mrs. Garland's cottage, and, finding a convenient moment, when the children were busy with preparations for their Christmas tree, slipped the precious missive into Mrs. Garland's hands. One glance revealed its contents to the now happy wife, and the look of joy and gratitude which she turned upon her faithful old friend, repaid him a thousand times for all that he had ever been able to do for Garland and his family. With rare self-control, the faithful wife and mother wore through the day without a hint to the children of what was in

store for them in the morning. Gracie wondered if, after all, Santa Claus would not bring back to her, her own dear papa, and her last act before wandering off to dreamland, was to hang a childish offering on the family tree for dear papa.

Christmas morning in the year of Grace, 1885! Seated by the fireplace in the Garlands' temporary home, a pale, but happy, man held his wife's hands, and awaited the moment when, awakening from the deep sleep of childhood, a girl and a boy would come romping in to see what Santa Claus had brought them. There was not much delay. An opened door, a moment's pause in wide-eyed and delighted wonderment, a shout of childish joy, a shower of kisses and a tempest of caresses, and father, mother and children were together once more. "And did you find the 'Home Again Ledge,' dear papa?" was almost the first question Gracie asked after the kisses and caresses of the first moments of meeting. We, the writer and the readers of this narrative, have but little to do with the sacred confidences which were exchanged by husband and wife on that bright morning, but there was a comedy about 11 a. m. that day, which was worth looking at.

Pursuant to appointment, Garland's partner came over to the house about nine o'clock Christmas morning, and, an hour later, Jabez Long and his wife called in, bringing a basketful of "additions" to the Christmas dinner to be eaten in Garland's house that day. About 11 a. m., Gracie, who was looking out of the window, informed the party that a carriage had stopped at the gate. It was an open barouche. On the back seat, sat Mrs. Becky Scrimgeour, gotten up, evidently, without regard to expense. There was something truly wonderful in the hat she wore, and as for the flamboyant colors of her cloak, they challenged rivalry. On the front seat, Wintermute, glossier, if possible, as to broadcloth and hat, and more dazzling as to watch and chain and the gold headed knob of his walking stick, than ever before, sat smirking like a pinchback satyr. Before he could pick himself up, as it were, and leave his seat in order to come and offer to escort his proposed guests to the carriage, the door of the cottage opened and Garland's partner stepped out. The following tableau was then performed: Geoffrey and Mary Garland stood on the lower step, Gracie's hand in her father's and Harry's in his mother's. Behind these, stood old Jabez Long and his wife, and it is said that although it was Christmas day, and her heart was over-

flowing with gratitude to the Giver of every good and perfect gift, there was even a severer look in her kindly old face, as she surveyed Mrs. Becky in her shining wraps, than when she put a quietus on her insolence in the Garland sitting room.

Garland's partner walked slowly to the carriage containing this worthy pair, and made a short speech. "Mr. Wintermute," said he, "Owing to reasons which will doubtless suggest themselves to you, Mrs. Garland finds herself compelled to deny herself the pleasure and honor of dining with you to-day. Mr. Garland desires me to thank you for the solicitude you have manifested for the welfare of his family, and to say that to-morrow his legal advisor will call on you for the purpose of arranging for the reconveyance, to Mr. Garland, of the homestead and appurtenances. And now, wishing you and Mrs. Scrimgeour a merry Christmas, I will bid you good day." And the faithful friend and partner turned on his heel and went back to the house, the doors of which were soon closed upon the Garland party, who, one and all, were shut up in measureless content.

Shall we follow the fortunes of the conspirators any farther? Poor old Obed! He ordered

the driver to return home forthwith. Not a word, during the drive, did he speak to Mrs. Becky. And not a word did the baffled termagant venture to address to him. Obed walked quietly to his snugery and drew a check for six months' salary in advance, in favor of his housekeeper, and tapped his bell. She answered the summons. "Take this," said he, handing her the check. "I shall not need your services any longer." Mrs. Becky seemed to be about to go into tantrums, when, with a degree of sternness, of which nobody who knew Obed Wintermute, would have supposed him capable. He simply said, "Not a word," and pointed to the door. Mrs. Becky left the neighborhood. What became of her, I do not know. She is a fair type of a class who leave the malodorous shine of their trail in many a home. Happy the home where such as she are powerless! Let her pass. As for Obed Wintermute, the lesson was a good one to him. He apologized in manly fashion to Garland, through his lawyers, for his folly. Whether he will ever be their guest again, is questionable; but it is rumored that his will has been altered in such a manner that Gracie and Harry will have quite a nest egg when he is gathered to his fathers.

A. J. HAWLEY.

YELLOWSTONE PARK AND ITS FLORA.

THE Yellowstone National Park, with the exception of a narrow strip, two miles wide, on the north and northwest in Montana, and on the southwest in Idaho, lies in the extreme northwest corner of Wyoming. It has a length, north and south, of sixty-two miles, and a breadth of fifty-four miles, containing about three thousand three hundred and fifty square miles. Aside from the wonderful geyser basins and hundreds of boiling springs, but few regions can compare with it in the variety of its topographic features. Plateaus, diversified by deep canyons, lakes and ponds of the greatest beauty of outline, mountain ranges of every possible description, from the rounded, massive form, to those of the rugged and precipitous character.

The central and southern portion of the park is, for the most part, with the exception of the isolated Red Mountain range, in the extreme south, a high, rolling, heavily timbered country, mainly plateau from seven thousand and five hundred to ten thousand feet in altitude,

the latter height being reached only on the high volcanic plateaus in the extreme southeast.

In the northwest rises the Gallatin range, culminating in Electric Peak, eleven thousand feet above the sea level. On the eastern border lie the rugged volcanic peaks of the Absaroka or Yellowstone range, reaching elevations of ten thousand and eight hundred feet on the northeast, and over eleven thousand feet on the southeast. The continental divide crosses the park in the southwestern part, and is generally broad, ill-defined and heavily timbered throughout. It has an elevation of from eight thousand to nine thousand five hundred feet, and at one point but one hundred and fifty feet above Yellowstone lake.

On the western slope of the divide, are the tributaries of the Snake river—the Lewis fork of the Columbia—and on the eastern, those of the Missouri; the latter including the Madison and the east Gallatin on the west and northwest, the Stinkingwater, a tributary of the Big Horn, on the southeast, and the Yellowstone river.

The latter, which drains more than half (two thousand square miles) the area of the park, enters at the southeast corner at an elevation of about seven thousand nine hundred feet, and flowing about northwest through Yellowstone lake and the Grand canyon, crosses the northern boundary at an altitude of five thousand three hundred feet. Yellowstone lake (seven thousand seven hundred and forty feet), the largest lake at great elevation in North America, has a length and breadth, respectively, of twenty and fifteen miles, a depth of three hundred feet, and an area of one hundred and fifty square miles. The shore line, indented by several large bays, is over one hundred miles.

The beautiful curves of the sandy beaches and crystal purity of its waters, make it an object of unusual interest. With the exception of the Yellowstone range, rising from its eastern shore, it is surrounded by a generally low, heavily timbered country. A few miles southwest, on the opposite slope of the continental divide, are the little gems of Heart, Lewis and Shoshone lakes, varying in length from three to six miles.

The Yellowstone river, from the southern boundary to the lake—fifteen miles—is a sluggish, tortuous stream, bordered by meadow and swamp two miles in width. The slopes down to the valley are bold and precipitous, the surrounding country being a high, volcanic plateau of over ten thousand feet altitude. The spurs of the Yellowstone range making down to the lake are heavily timbered, becoming less so toward the south. Pelican creek, draining the south end of Mirror lake plateau, enters the lake near the outlet. Meadows from a half to a mile in width, border the lower portion of its course. At the outlet of Yellowstone lake, on the west, abuts the heavily timbered plateau of the Elephant Back (eight thousand five hundred feet), which, running westward a few miles, splits into two parts, one merging into the continental divide, on the southwest, and the other, turning to the northward, forms a narrow divide between the Madison and Yellowstone, and broadening out, again divides, one branch sweeping around to the head of the Grand canyon, and the other, much broken by lateral and transverse drainage, continuing northward, nearly to the Mammoth hot springs. The low, semicircular depression thus formed on the west bank of the Yellowstone, is known as Hayden valley, and has formed a portion of the ancient Yellowstone lake. It is drained, mainly, by Alum creek.

At the head of the Grand canyon are the Upper and Lower, or Great, falls of the Yellow-

stone, half a mile apart. They are one hundred and eight and three hundred and nine feet in height. East of Alum creek is the region of Sour creek, broken by low, heavily-timbered ridges, extending to Mirror lake plateau, on the east. North of the Grand canyon is the crescent-shaped Mt. Washburne range, the opening toward the Yellowstone river, and drained by Tower creek. The interior slopes of this crater-like area, and the rhyolite plateau along Tower creek, are densely timbered, except near Antelope creek. Broad and Deep creeks, which have cut deep canyons in the plateau, enter the Yellowstone east of Mt. Washburne, and north of these are the slopes of Amethyst mountain and Specimen ridge. The East Fork, the main branch of the Yellowstone, joins it from the east, about twenty miles above where the Yellowstone crosses the northern boundary of the park, at its junction with the Gardiner river. This portion of the main river is called the Third canyon. It has little of the well-defined walls of the Grand canyon. On the east rise precipitous granite slopes, several thousand feet. On the west the country is much lower and has more of a plateau character, and about Black-tail Deer creek and on Mt. Evarts are large grass-covered areas, interspersed with groves of timber, and extending, in some cases, up the northern slopes of the Mt. Washburne amphitheatre. The East Fork, from its junction with the Yellowstone to Cache creek—about sixteen miles—runs through an open, grass-covered valley, from one to one and a half miles in width. Its main branches—Slough, Soda Butte, Cache, Calfee and Miller creeks—flow from the east, draining the Yellowstone range. On the west it receives numerous small drainages from Specimen ridge and the Mirror lake plateau. On both sides, as far as Cache creek, and above it for a few miles on the east, the adjacent slopes are only partially forest-covered. Above Cache creek the East Fork runs in a well-timbered canyon. The short streams from the Mirror lake plateau head in beautiful grassy parks, often of a hundred acres in extent. The valleys of the main stream and its principal tributaries—Slough and Soda Butte creeks—are low within the boundaries of the park, ranging in altitude from six thousand eight hundred to seven thousand five hundred feet, but the more immediate slopes in the northeastern portion rise precipitously to ragged and bare peaks and ridges, ten thousand to ten thousand eight hundred feet in altitude. North of Slough creek is an area of high, sparsely-timbered plateau. On the Gardiner river, four miles south of the northern

boundary, is located the terraced group of the Mammoth hot springs. About here, and nearly around Swan lake and Indian creek, are large, open, grass-covered areas. The slopes of the Gallatin range are well clothed with forest up to the timber line, which, in the park, varies from nine thousand four hundred to nine thousand seven hundred feet. The tops of the long ridges sloping westward are, in some cases, bare.

From the Gallatin range southward, along the western border of the park, extends the Madison plateau. Its southern limit is the Pitchstone plateau (eight thousand seven hundred feet), at the base of which, on the north and east, lie Shoshone and Lewis lakes. The very flat top of the plateau is more than half covered with grassy parks, but the sides are heavily timbered. To the westward it slopes down to the low, open, swampy area of the Falls river basin, in the extreme southwest corner of the park. On the Madison plateau, as elsewhere throughout the region, are scattered small, open parks and meadows, but, taken as a whole, it is heavily timbered, and is cut by numerous dry, rocky canyons. It has an average altitude of about eight thousand five hundred feet, and from Shoshone lake it is traversed, in a north-westerly direction, by the continental divide. At the foot of the abrupt eastern slope of this plateau lie the Upper and Lower geyser basins, in a wilderness of forest. The Fire-hole river, draining these areas, flowing northward, meets the Gibbon river, from the northeast, the latter draining the Norris geyser basin, and heading on the plateau northwest of the Washburne range. These two streams, uniting, form the Madison, which, in its course westward, has cut a gorge two thousand feet deep through the Madison plateau. Within the park the Madison river has a drainage area of about seven hundred square miles.

The region of the Yellowstone park has been the scene of great volcanic activity, the rocks being mainly of igneous origin, with the exception of the Gallatin range, which is, in a great part, sedimentary. The plateaus have been formed by great lava flows, principally rhyolite. The rugged Yellowstone range is mainly composed of volcanic breccias and conglomerates. The principal geyser areas are those of the Upper and Lower geyser basins, Norris geyser basin, Shoshone lake geyser basin, and the Heart lake geyser basin. Hundreds of boiling springs are scattered over the whole region, and have formed extensive deposits, mainly calcareous, while those of the geysers are a form of silica, called geyserite. The great quantities of silici-

fied wood, and size of many of the specimens, would lead us to suppose that the ancient forests were of much greater magnificence than at present.

The Yellowstone park, like most mountain regions where terrestrial radiation is great, has, during the summer months, great extremes of diurnal temperature, although the day temperature is low—not generally above seventy-five degrees, Fahrenheit. Frequent summer frosts are a characteristic feature. This coolness of climate, coupled with a high relative humidity, that is, for the Rocky mountain region, accounts for the fact of its being densely timbered. A very copious rainfall is shown in marsh, spring, stream and lake. From observations taken at Yellowstone lake (seven thousand seven hundred and forty feet), from July 15th to August 15th, 1885, we obtained the following: Average of readings of minimum thermometer, which, practically, is the temperature at sunrise, twenty-nine and seven-tenths; average of two o'clock p. m. readings, sixty-five and six-tenths; average of readings of maximum thermometer, from August 1st to August 15th, sixty-eight and three-tenths. The greatest recorded temperature was seventy-eight degrees, and the lowest, twenty-two degrees. The growing season, over the main area of the park, is from about May 1st to September 1st. The lower and dryer portions, up to seven thousand feet, are in their greenest garb about July 1st, and the subalpine and alpine regions early in August. When in vigorous growth, vegetation does not seem to be affected in the least by a temperature of ten degrees below freezing, but a little later in the season its effects are apparent, when the plants have lost much of their vitality. The change from the luxuriance of August to the decay of September is abrupt. Generally, by September 15th snow has fallen, to lie upon the ground for a day or two.

The park has suffered, at various times, from the ravages of fire. There are probably one hundred square miles of burnt forest. Over a large portion of the region will be found masses of fallen timber in the green and standing forest. There are some areas of considerable extent which are not forest covered, and at lower elevations are covered with a luxuriant growth of grass and more or less sage brush. The most extensive of these are in the northeast portion, in the vicinity of the Mammoth hot springs, about the mouth of the East Fork, and along this stream. The former, including the greater portion of the region of Mt. Evarts, Blacktail Deer creek, Swan lake, and the Upper West

Gardiner, generally covered with local drift, has an area of forty square miles, and is the southern extension of the dry, timberless region of the valley of the Yellowstone. This, with some interruptions, extends to the East Fork. The latter, comprising the valley of the East Fork to Cache creek, and the slopes on each side, the northern portion of Specimen ridge, and across the Yellowstone river about Antelope creek, has an area of about fifty square miles, twenty of this belonging to the valley of the East Fork. Besides these are Hayden valley, eighteen square miles; Upper and Lower

geyser basins, and East Fire-hole river, fifteen square miles; Pitchstone and Madison plateaus, and Falls river basin, forty square miles; valley of the Upper Yellowstone, thirty square miles. Add to these about eighty square miles for all minor areas, parks, meadows, regions above timber line, etc., and one hundred and eighty square miles for lakes and ponds, and we have a total of four hundred and eighty-three square miles, or about fourteen per cent. of the area of the park. We can, therefore, safely say that eighty-six per cent. of the park is forest covered.—*F. Tweedy, C. E., in Building.*

GLIMPSES OF IDAHO.

THOUGH not the least in features of interest and importance among the states and territories of the West, Idaho is the least presented to the public through the press.

Having traveled somewhat extensively through the interior in the pleasant portions of the seasons for six years past, and by observation, investigation and inquiry become thoroughly acquainted with the general features and facilities for development, I desire to record the result of my observations for the benefit of those seeking information on this subject. I will not encumber the reader with a delineation of boundary lines, since reference to a map will render sufficient information as to the position of the territory, relative to the states and territories on the Pacific slope. Nor do I consider a presentation of historical facts as possessing any relevancy to the objects here in view. An outlining of the external features is of paramount importance in acquiring a suitable understanding of the climate, agricultural, fruit growing, stock raising and other resources.

The territory of Idaho occupies, principally, the best portion of intermountain country between the Blue and Sierra Nevada and the Rocky mountains. The portion particularly referred to is confined to the valleys and low hills along, and near to, all the streams which have their outlets, directly and indirectly, toward the West, whence come the warmer breezes of the Japan current. The most of this better country is found along Snake river and its branches. This great river, sweeping around through the southern part, coils over four hundred miles of its length between the eastern and western limits of the territory. On either side, with the ex-

ception of the lava beds, it is bordered by extensive plains and bench land plateaus, occasionally broken by groups of hills. On these plains rye grass and white sage grow luxuriantly, which, together with the more temperate climate found here, afford an excellent winter range for large herds of deer, cattle and horses. Bunch grass grows profusely over all the hills and in the higher valleys, reaching each way from the majestic river back to the distant mountains. This grass is also found in abundance everywhere in the open or untimbered parts among the mountains. Along Snake river and all the tributaries which glide in from north and south, the winters are comparatively mild and of short duration. This is evidently caused by the soft winds mentioned, which, following up the Columbia, find their way up the minor streams, and, wandering back over the plains and hills and up the gulches, melt away the snow and temper the cold breath of winter.

Idaho partakes largely with Oregon and California in possessing a variety of climates; yet her best is the best in the world. This is proven by observation, experience and scientific inference. The milder portion is sufficiently elevated to escape the prolonged winter rains common to the more western portion of the coast, and still the altitude is not so great as to catch the full rigor of winter. We can, therefore, readily see that suitable altitude and a westerly direction of the main water courses tend to produce a mild and even climate. Although the snow falls to a great depth in the mountains, the weather never becomes extremely cold. Large flocks of sheep and vast herds of horses and cattle find, as yet, unlimited summer pas-

turage in the hills receding from the high mountains, and, as winter approaches, move into the low lands along the river.

The valley soil, where the sage brush and rye grass grow, is generally a rich loam of aluvial deposit, is deep, and with irrigation, will yield ample returns of anything grown in the temperate climates. But leaving the Snake river country and going north or south we are soon confronted with lofty mountains. While Idaho is of itself a "gem of the mountains," these are gems of Idaho. They are so interlaced and tangled up among themselves as to often baffle the most traveled and careful mountaineer to designate which is which. Aside from the Snake river plains and a few valleys extending back for a short distance from the mouths of smaller streams, and an occasional remote valley, Idaho is hills and mountains. The central, northern and northeastern portions are so crowded with crags and peaks jutting up above the timber line, as, in many places, to resemble groups of turkeys, each tip-toeing in striving to elevate his head a little higher than his neighbors'. The early nomenclators soon exhausted their scanty vocabularies on these mountain peaks, and later comers could think of no other names suitable, or considered the residue not worth naming. Far away, nestled in remote recesses of these lonely mountains, where the sylvan shade is never lifted, isolated from each other, are many beautiful clear-water lakes, which pass the centuries of solitude in rippling to the breezes and reflecting the glory of the heavens and giant images of mountain and wood. Several of the principal rivers find their sources in these secluded lakes, and, after meandering about through beautiful valleys and plunging down through deep gorges, flow out upon fertile plains, where they are partly utilized in watering orchard, garden and field.

Numerous hot springs occur along these rivers in the mountain passes, carrying in solution large percentages of sulphur, soda and iron. However, in a few of them there is an entire absence of sulphur. Many of these springs have become summer resorts for pleasure seekers and invalids, who testify to having derived much benefit and enjoyment from bathing in them. Several of these springs have become established as popular watering places, elaborate accommodations having been provided by enterprising landlords. There are a few hot lakes of small area in the far interior, but being very remote are seldom visited by any except the most venturesome mountaineers. These lakes are certainly features of great interest,

constantly seething along the shores, quietly shifting the white and green sands, boiling in various places at the bottoms and in tributary springs, remaining always at the same temperature, no difference what the condition of the atmosphere. In the cold air of autumn and winter mornings, they steam up like great boiling pots, the faithful fireman, fire and fuel never seen. The shores are, in most places, encrusted with alkali, where many deer and elk come during the nighttime to lick and sip from the warm springs along the banks. Large herds of both are supposed to winter there on the fresh green rushes which grow in rich profusion in the soft, warm earth.

Mining is the leading industry of the territory, and is being slowly and surely developed. A very large majority of these mines are located in the mountain districts, and many of them are very rich and extensive, the lodes being long and wide. Much of the quartz bears paying quantities of silver and gold. Copper, antimony and mica are found in great abundance in Washington county, in the mountains bordering on Snake river. This region only needs developing to become one of the largest copper bearing fields on the continent. Many thousands of tons of good ore have been taken out with comparatively little labor. Unwarrantable market and lack of capital have retarded progress in this particular. I believe the mining interest is far more extensive than has yet been ascertained, and, perhaps, is only in its infancy; for the majority of the mines are new, and the greater portion of the territory is comparatively unknown. The total product of gold and silver, for the year 1885, as given by the U. S. assay office at Boise City, was \$5,755,602.00. This estimate is probably much less than the actual amount, since, as all are aware, a large portion goes out of the territory without coming to the knowledge of the assay office. The progress in working many of these mines is greatly retarded by the difficulty of access. Some of the very best are long distances from such centers of trade as are enjoyed in Idaho; and the greater part of the journey to them must be made with pack animals over steep and rocky trails. However, these impediments will probably be lessened in the near future, since it is believed by all intelligent persons concerned that the expense of constructing wagon roads, though in many instances enormous, will be amply repaid in the advantages gained.

The next resource in point of interest, will, perhaps, be the lumber trade. The expense of a few thousand dollars in clearing the Weiser,

Payette and Boise rivers of obstructions, will open to the world one of the best timber belts in the country. We are only waiting for the capital and demand for this new enterprise. From the crown of the nameless range, south of Big Salmon river, trending southeast and dividing the tributaries of the Salmon and Snake rivers, however ill defined, the slopes are nearly covered with forests of pine, cedar and fir. From the southwestern slope the logs can be floated down the rivers, sawed into lumber near the railroad, and find a way to more Eastern markets by way of the Oregon Short Line. This system of lumber making is now being carried on to some extent, but supplies the local demand only. With the exception of the open country bordering on Snake river, a portion of the branches, and a minor portion of Clearwater, the territory is nearly all forest, and more than fifty per cent. of this area produces excellent timber. Railroads will find it when demanded.

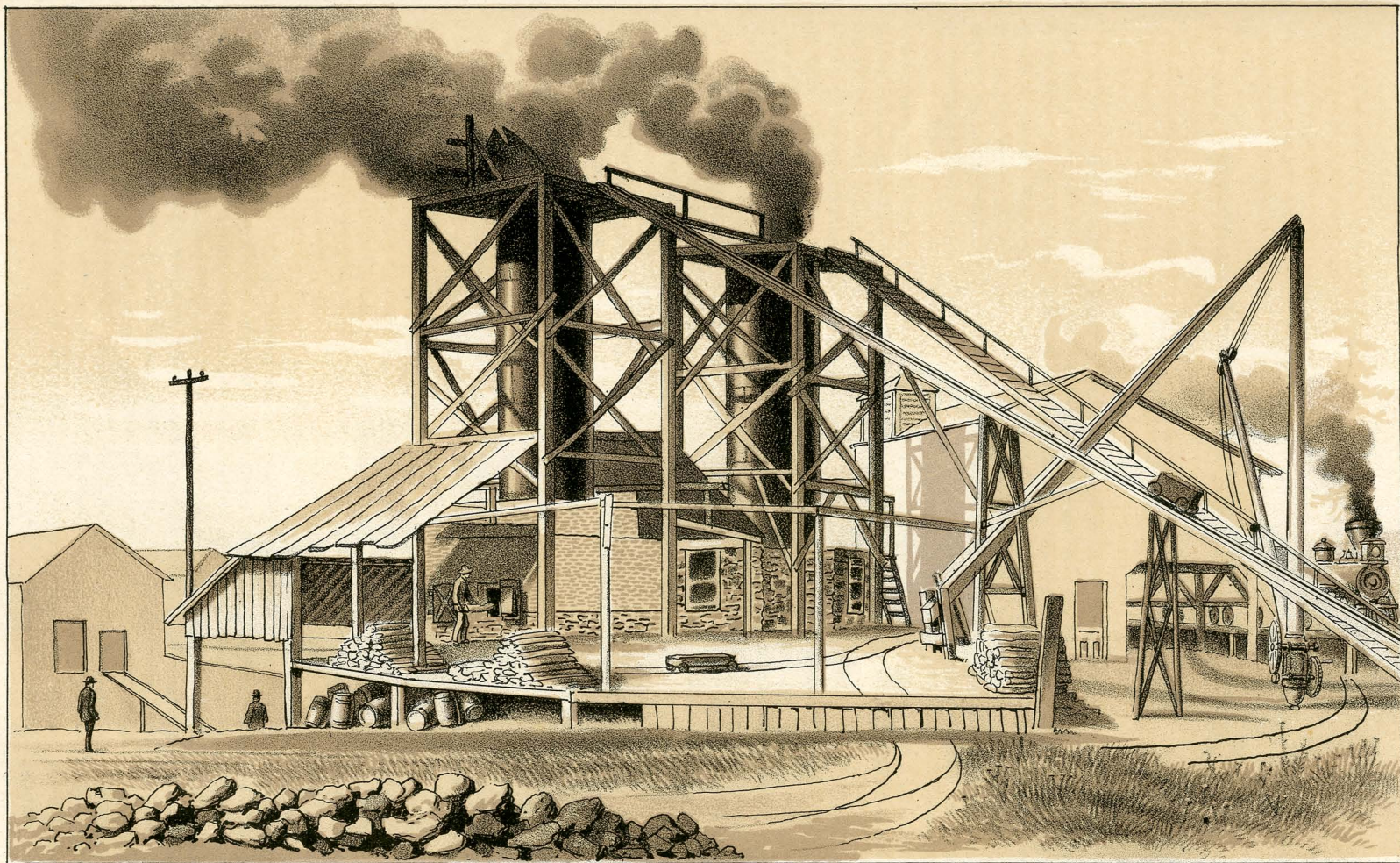
Stock growing in all its branches has long received special attention. Every year brings

many more strangers, who are investing in cattle, horses, sheep and hogs, and there is room for many more. The range is principally in the southern part, through which the Oregon Short Line passes, providing convenient transportation.

Agriculture does not yet supply the home demand. Many more will soon be engaged in this pursuit. Crops are as sure here, and the husbandman as well rewarded, as anywhere else in the world. Capital is very much needed to construct irrigating ditches, since there are many thousands of acres yet untilled which will some time be made to "blossom as the rose." Wherever fruit growing has been tried in Southern Idaho, the efforts have been crowned with success. Many of the mountain gulches are adorned with thrifty young orchards and gardens, and many more soon will be. The more tender varieties of trees will not do well in the greater altitudes, but the hardier kinds, and every species of berry, produce abundantly, even near the line of perpetual snow.

L. L. SHEARER.





OREGON.—WORKS OF THE PORTLAND LIME AND CEMENT CO. EAST PORTLAND.

Northwestern News and Information.

O. R. & N. EXTENSION.—Right of way is now being secured for a branch line of the O. R. & N. Co., to run from Prescott, between Walla Walla and Waitsburg, to the celebrated Eureka Flat wheat fields, a distance of fifteen miles. It is understood that the branch will be at once constructed.

SPOKANE AND PALOUSE RAILROAD.—Surveys for the extension of this feeder of the Northern Pacific have been made, running from Belmont, W. T., to Genesee, Idaho, and passing through Garfield, Palouse City, Pullman, Colton and Uniontown. This will take it to within a few miles of Lewiston, Idaho.

CANNERY AT THE DALLES.—There will be a cannery, costing \$50,000.00, erected early in the spring, at The Dalles. During the salmon season the cannery will be engaged in putting up fish. When the season closes it will work on vegetables and fruit, thus keeping busy a large portion of the year. This industry will be quite an addition to the city's business.

TACOMA STREET RAILWAY.—Nelson Bennett, the well-known railroad contractor, and a number of other gentlemen, have been granted the right to construct a street railway in the city of Tacoma. The franchise will be invalid unless work is commenced within four months. Thus will another metropolitan feature be added to Tacoma. A new shingle mill will soon be added to the industries of that city.

THE OREGON PACIFIC.—The railroad bridge across the Willamette at Albany has been completed, and trains of the Oregon Pacific now run from that city to Yaquina. Contract for grading thirty miles of road bed east of Albany has been let, and the officers of the company state that the work of construction across the Cascades will be pushed vigorously. The road is now in a position to give an outlet to the San Francisco market for a large portion of the Willamette valley.

RAILROAD TO JACKSONVILLE.—The citizens of Jacksonville, Or., have opened a subscription book for the purpose of raising \$25,000.00 capital stock for the Jacksonville branch of the Oregon & California Railroad, to run from that city to the main line, a distance of four and one-half miles. This is a necessary step for the business men of that city. The Rogue river country is making rapid progress, and Jacksonville can no longer afford to be deprived of railroad facilities.

PUGET SOUND POTATOES.—The potato crop of Puget sound is always a large one. The potato is cultivated on the largest scale on the rich, high prairie lands of Whidby island, where the tubers are planted early in January. The rainfall is much less there than at other points on the sound, and as the ground does not freeze this early planting produces an early and prolific crop. The yield on Whidby island is enormous, both in the number of bushels per acre and the total crop.

SPRAGUE AND BIG BEND.—Citizens of Sprague, W. T., have incorporated the Sprague & Big Bend Railroad Co., with a capital stock of \$100,000.00, for the purpose of building a railroad from Sprague into the rich agricultural region to the westward. The Big Bend country has made rapid progress in settlement during the past three years, and it is only a question of a year or two when one or more railroads will penetrate it. A preliminary survey for the proposed line will be made at once.

PINE CREEK MINES.—The new mines of Eastern Oregon are attracting considerable attention in Denver, Louisville and other cities. The basin mines in the Pine creek district, with the exception of the Red Boy, have been sold to Denver capitalists for \$60,000.00. Machinery for development will be put up in the spring. The famous Red Jacket has also been sold for a large amount to Denver parties. Snow is now ten feet deep, and as it does not disappear un-

til late in the season, work will not be well progressed before next June; but from that time to the close of the season, great developments are looked for on Pine creek.

THE WHEAT CROP.—The acreage of wheat in Eastern Oregon and Eastern Washington is much greater the present season than ever before, and the transportation facilities for marketing the coming crop will be far better than they have been in the past. It is estimated that four hundred thousand tons of wheat will be sent to tide water from the crop of 1887, which is one-third more than the surplus crop of that region in 1886. Under the influence of the constantly increasing railroad facilities, the yield will increase every year, since there is almost no limit to the quantity of wheat the great inland empire can produce.

MONTANA TIN MINES.—The Montana Tin Mining Company has been engaged for five months in developing the immense deposits of tin ore on Sweetwater creek, thirty miles from Dillon. The tin ledges crop out in great masses, rising from twenty to thirty feet above the surface of the ground. One of these great ledges has been pierced by a tunnel nearly four hundred feet long, more than one-half of which is in ore, three hundred and fifty feet below the surface. This proves the quantity of ore almost inexhaustible. Assays range from one to twenty-two per cent. of tin, which is considered highly satisfactory. Developments on other claims in the vicinity also give satisfactory results.

UMATILLA RESERVATION.—The Umatilla Indians have finally agreed to accept lands in severalty and sell that portion of their reservation not needed for their actual occupation. The surveys will be made in the spring, and the Indians will then be located in such a manner as to have the lands allotted them in a compact body. There will be a remainder of more than one hundred thousand acres, which will be opened for purchase and occupation by actual settlers, and as much of it is equal in quality to the best wheat lands in Umatilla county, there will be a great increase in population and production in the region lying between Pendleton on the one hand and Adams, Centerville and Weston on the other.

A RAILROAD FOR SEATTLE.—Right of way in Seattle has been granted to the Seattle, Lake Shore & Eastern Railroad Co., an organization which last year secured terminal facilities on

Smith's cove, in that city, and made surveys for a route across the Cascades by Snoqualmie pass. The company has sufficient capital to push work, and will at once begin construction on the first section of forty miles. The prime object to be accomplished is to build a line through the magnificent timber lying east of Seattle, to the iron mines near Snoqualmie pass. This will be accomplished the present season. The ultimate purpose is to extend the line across the Cascades and through the Kittitas and Big Bend regions to Spokane Falls.

ROCKY MOUNTAIN TELEGRAPH CO.—Capitalists of Butte City, Montana, have incorporated the Rocky Mountain Telegraph Co., with a capital stock of \$500,000.00, for the purpose of constructing lines of telegraph, as follows: From Butte to Portland and Victoria; from Butte to Medicine Hat, on the Canadian Pacific, by way of Fort Benton, with a branch to Grand Forks, Dakota; from Butte, by way of the Yellowstone valley, to Fargo, Dakota; from Butte southward, to Cheyenne, Salt Lake and San Francisco. These lines will touch every town of importance in Montana. The first line to be constructed will be the one giving Butte connection with the East, by way of Helena, Benton, Assiniboine, Medicine Hat and the lines of the Canadian Pacific.

BUTTE CITY STATISTICS.—There were employed in the mines and mills of Butte, during the year 1886, four thousand and five men, with an average pay roll of \$400,500.00. There were shipped by rail, two hundred and thirty-six thousand six hundred and forty-four tons of copper ore, sixteen thousand eight hundred and nine tons of copper matte, and nine hundred and ninety-seven tons of silver ore. Freight receipts were in excess of one hundred and forty-seven thousand tons, an increase over the previous year of thirty-eight thousand tons. There were three hundred and ten stamps employed in crushing ore. The total value of bullion and copper produced was \$13,246,500.00. The city is lighted by eighty-five electric lights, and claims a population, inclusive of the contiguous mining camps, of twenty-five thousand.

BRIDGING THE COLUMBIA.—The citizens of The Dalles are considering the question of bridging the Columbia at a point about two miles above that city. The approaches to the river are at all times above the high water mark, and it is estimated that a bridge, with a span of three hundred and fifty feet, which is considered all

last summer, provides that the Helena assay office shall be, in all respects, similar to mints, except that bars only, and not coin, shall be manufactured. This would effect a state of things which would allow Montana's gold and silver product to leave the territory ready to be transformed into coin. It would also provide a home market for bullion.

OREGON CITY WATER POWER.—The great falls at Oregon City have been purchased by a syndicate of Portland and Oregon City capitalists, who propose to promote the establishment of manufactories. The company has purchased the locks and adjacent water power, on the west side of the river, and seven hundred and fifty acres of the land adjoining. This land will be laid off into blocks for residence purposes. The company proposes to donate ground for mills and factories, and supply water power ten years free, as an inducement for the location there of various industries. The scheme for improvement also embraces a bridge across the river below the falls, for which purpose the city has voted to contribute \$1,000.00. The water power at Oregon City is the greatest and most accessible in Oregon, but it has hitherto been in the hands of parties who held it too high. Now there is every prospect that the power will be utilized, and that Oregon City will become the seat of many manufacturing industries.

TACOMA STATISTICS FOR 1886.—During the year 1886, there were shipped from Tacoma, fifty-four million eight hundred and sixty-three thousand and twenty-eight feet of lumber, and two hundred and nineteen thousand five hundred and fifty-six tons of coal. The output of the Carbon Hill and South Prairie mines was two hundred and thirty-one thousand two hundred and fifty tons. The mines at Wilkeson were not in operation. The company is putting in one hundred coke ovens there, twenty of which will be in operation in a few days. Twenty-two stores and public buildings were erected, the aggregate cost being \$80,000.00. The total expended for building improvements was \$195,000.00. Two electric light plants were put in at a cost of \$30,000.00. The city spent \$36,000.00 on streets, the Tacoma Land Company \$12,000.00 on harbor improvements, and the Northern Pacific \$30,000.00 for terminal facilities. Contemplated improvements include \$50,000.00 for a smelter, \$100,000.00 for brick buildings on Pacific avenue, \$100,000.00 for a large grain elevator, \$10,000.00 for a hospital, \$40,000.00 for a

hotel, \$100,000.00 for harbor improvements, and \$15,000.00 for a saw mill.

REDUCTION WORKS.—Besides the reduction works in Portland—described and illustrated elsewhere in this number—arrangements are being made to erect similar works in Tacoma and Ellensburg, W. T. The Tacoma Smelting and Refining Works has been incorporated for the purpose of constructing smelting works with a daily capacity of fifty tons. No work has been done as yet, but the chief promoter of the enterprise is a capitalist thoroughly in earnest in the matter. The Ellensburg Mining, Milling and Smelting Co. has been incorporated, and is now engaged in selecting machinery for a sixty-stamp mill and a smelter of eighty tons daily capacity. The erection of such works is a prime necessity in the development of mining in this region. So many rich ledges have been discovered, in widely separated localities, numbers of which have been worked sufficiently to demonstrate the extent and character of the ores they contain, that there need be no fear of a lack of sufficient ore for the works contemplated, even were their capacity doubled.

IRRIGATING CANALS IN IDAHO.—There are now no fewer than a dozen enterprises under consideration in Southern Idaho, covering over a million acres of land. The land so covered is sage brush land, and comprises some of the richest soil in Idaho. The main body of land to be so covered, lies between Boise and Snake rivers, and from four miles east of Kuna to the mouth Boise river, seven hundred and fifty thousand acres. The ditches to cover this large body of land are the Settlers' ditch, New York canal, two by the Idaho and Oregon Improvement Company, the canal of the Nampa Improvement Company, and an extension of the Strahorn ditch near Caldwell. The Settlers' ditch will cover what is known as the Five Mile creek and the Ten Mile creek country, and it is being constructed by the settlers under it on these creeks. The others are enterprises by capitalists, who will construct the ditches as an investment to sell water. The one in Lower Boise, on the north side of the river, is also an enterprise by the settlers, and will cover fifty thousand acres. At Emmettsville there are two ditches contemplated—one on each side of the river, to be taken out at the canyon near Squaw creek butte. No work has yet been done on these ditches, except to make the preliminary surveys. They will cover from fifty thousand to seventy-five thousand acres. Another one is to take water

out of the Bruneau, and will cover fifty thousand acres or more. Other and smaller ditches are talked of and will be constructed in the near future, but the above named are the most important ditch enterprises, and will be carried to completion in the near future.

OREGON STATISTICS.—The assessment valuation of Oregon, for the year 1886, shows the following totals by counties:

Multnomah	-	-	-	\$18,761,610.00
Linn	-	-	-	5,235,898.00
Marion	-	-	-	4,957,396.00
Umatilla	-	-	-	4,300,662.00
Yamhill	-	-	-	4,038,697.00
Lane	-	-	-	3,989,695.00
Polk	-	-	-	2,931,054.00
Douglas	-	-	-	2,802,484.00
Union	-	-	-	2,795,407.00
Grant	-	-	-	2,760,220.00
Washington	-	-	-	2,601,680.00
Wasco	-	-	-	2,518,146.00
Clackamas	-	-	-	2,515,020.00
Baker	-	-	-	2,349,256.00
Jackson	-	-	-	2,214,316.00
Benton	-	-	-	2,210,750.00
Clatsop	-	-	-	2,099,105.00
Lake	-	-	-	1,635,062.00
Crook	-	-	-	1,347,721.00
Coos	-	-	-	1,288,673.00
Gilliam	-	-	-	1,179,722.00
Morrow	-	-	-	840,354.00
Columbia	-	-	-	720,188.00
Klamath	-	-	-	709,236.00
Josephine	-	-	-	618,924.00
Curry	-	-	-	441,667.00
Tillamook	-	-	-	285,089.00
				\$78,148,022.00

THE TOUTLE VALLEY.—In the northeastern extremity of Cowlitz county, W. T., is a valley fifteen miles long by four in width, lying along the Toutle, a tributary of the Cowlitz. The soil is of the beaver-dam and black alluvium character, so well known in this region for its great fertility. There is room in the valley for two hundred families, and for as many more on the adjoining slopes and branches. There are but few settlers there now, and they will be glad to welcome new ones. Extending westward for many miles over the highlands between the north and south branches of the Toutle, is an immense body—some say thousands of acres—of red pine timber of great girth and tallness; also spruce, tamarack, and a quantity of soft kinds of timber, somewhat resembling the cot-

tonwood, but of a much larger growth. This valuable timber should be turned into money before the fires of the settler turn it into ashes. Many thousand dollars' worth of the best cedar has been destroyed in this manner already, and the pine will meet the same fate if not taken out in the near future.

UPPER WHITE RIVER VALLEY.—East of Tacoma and southeast of Seattle, lies the Upper White river valley, consisting of one hundred square miles of agricultural and grazing land, lying between the Cascade mountains and the confluence of the White and Green rivers. The line of the Cascades division of the Northern Pacific crosses the valley, and the station of Enumclaw has been established. This gives the settlers a good outlet for their stock, hay, hops and grain. The timber found throughout all of this Upper White river valley on the bottom lands, is not near so dense as on the Lower White and Puyallup valleys. It consists, generally, of a small growth of vine-maple and alder. Much of this land has been cleared at an expense of but \$10 per acre. That the soil is rich, is attested by the crops produced. In yield and quality, the hops raised in this valley are second to none, except those raised in the Stuck. In vegetables, hops and grain, the yields are larger than in any portion of the Puyallup valley. The foot-hills of the Cascade mountains furnish an almost unlimited range for stock. Nearly all the government and railroad land has been taken, but immigrants desiring to purchase land and engage in agricultural pursuits, can find here cheaper lands than in the Stuck or Puyallup valleys—easier to be cleared, in a neighborhood of enterprising Americans and thrifty Germans, and located accessible to market. A considerable portion of the fruit and vegetables raised in this valley find their market at the coal mines north of Green river and south of White river. There are no valley lands on Puget sound more easily drained. Springs are abundant, and water easily obtained by digging wells.

NAMPA, IDAHO.—Nine miles north of Snake river, and twenty miles from Boise City, is the town of Nampa, a station on the Oregon Short Line. It lies on a great plain embracing about three hundred and seventy-five square miles, or two hundred and forty thousand acres of good farming land. Nearly all of this land is fertile soil, ready for the plow as soon as the sage brush is cleared off and irrigating ditches dug. One man can clear an acre in a day. It

has been left unsettled because of the expense of bringing water upon it being too great for individual settlers. Three months ago, the Nampa Improvement Company laid out the town of Nampa and began the construction of irrigating ditches, consisting of a main canal, from Boise river, and a number of distributing ditches. When completed, these will furnish a never-failing supply of water, sufficient to supply the entire tract, which can be had by contract with the company at small annual cost. Logs and wood can be floated down Boise river, through the canal, to Nampa, where they can be converted into lumber and fuel. Already forty thousand acres have been entered in the land office at Boise City, and upwards of one hundred town lots have been sold by the company. The town is so situated that it will become the shipping point for quite a number of outlying districts, and is the point on the Oregon Short Line nearest to Boise City, and, consequently, the probable point of junction with a branch line to that city. The soil of that region is fertile, and will produce all the fruits, cereals and vegetables of the northern and middle states. Irrigation will render the crop a sure one, since all danger from drouths is thus avoided, and the dry weather of summer insures the harvesting of the crop in good condition. With water supplied, as in this instance, there are no better locations to be had in the West, than these fertile plains and valleys of Idaho.

MONTANA MINES.—The twelve leading incorporated mines of Montana have paid the following dividends to date:

Alice, - - -	\$ 775,000.00
Amy and Silversmith, - - -	235,000.00
Boston and Montana, - - -	520,000.00
Elkhorn, - - -	150,000.00
Granite Mountain, - - -	1,700,000.00
Hope, - - -	158,241.00
Lexington, - - -	565,000.00
Drum Lummon, - - -	795,000.00
Hecla Con., - - -	1,047,500.00
Helena Mg. and R. Co., - - -	192,000.00
Moulton, - - -	320,000.00
Original, - - -	117,000.00
Total - - -	\$4,758,741.00

Four-fifths of the above dividends have been earned and declared within the past eighteen months, but still the sum represents but a fractional part of the profit made from the development of Montana mining properties, and but a tithe of the gross output. Some of the mines of the territory are owned by private individuals,

and many others which are incorporated are not listed on the stock boards and their earnings are, therefore, not made public. Among them are the Cable and Pyrenees gold mines, the Anaconda, Parrot and many other copper mines, and the Bluebird, Colorado and Silver Bow companies' silver mines.

STOCK SHIPMENTS.—During the year 1886, the Northern Pacific handled the following quantity of live stock freight:

Cattle from Montana, - - -	61,430
“ “ Washington, - - -	2,280
“ “ Dakota, - - -	22,140
“ “ Or. and W. T. to Montana, - - -	21,210
Total, - - -	107,060
Sheep from Washington, - - -	16,340
“ “ Oregon, - - -	17,850
“ “ Montana, - - -	76,335
“ local shipments, - - -	34,960
Total, - - -	145,485
Horses from Washington, - - -	5,960
“ “ Idaho, - - -	60
“ “ Montana, - - -	2,520
“ “ Dakota, - - -	280
Total, - - -	8,820
Total live stock shipments, - - -	261,365

There is a marked increase in the number of horses shipped, and indications point to a time, not far distant, when Montana, Idaho, Oregon and Washington will be the breeding ground for all classes of horses required in the Eastern markets. The climatic conditions are highly favorable, and experience has shown that the business of breeding and rearing horses for market on a large scale can be made highly profitable in this region.

SUN RIVER CANAL.—One of the greatest irrigating enterprises in Montana is that of the Sun River Canal Company, composed of Helena capitalists, who are constructing an elaborate system of ditches to irrigate an immense tract of land lying between Sun river and the town of Great Falls. More than seven hundred thousand acres of fertile land will be covered by the ditches of this company. During the past summer, the Sun River Canal Company has built and completed about twenty-six miles of canal and one mile of flume. This has been done on what will hereafter be called the Teton canal and flume, a part of the Sun river canal system. It carries, at the head, seventeen thousand miner's inches of water, and about half this

amount at the lower end, the surplus being diverted for use *en route*. The water is taken from the Teton river and Deep creek, at a point near the mountains above Choteau, and is carried by this canal across the Teton basin. It discharges itself into Big Muddy creek, near Freeze-out station, on the Sun river and Choteau road. The water uses the channel of this creek down to the head of Lake creek, and is there diverted into Big lake, near Lake station on the Benton road. This lake will be used as a reservoir, and when completed, will form a body of water ten miles square, with an average depth of twenty-five feet. From here the water will be carried by numerous small ditches, upon the extensive lands below. Only a small portion of the land under this system is yet taken up, and the company want to see it all settled upon. There is an immense quantity of it, which, in quality, can not be surpassed for agricultural purposes. The company's object is to furnish water to irrigate this land, and they will do this at a low rental. Settlers are coming in rapidly, and there is a demand for all the water the company has to rent. But they will have a large surplus as soon as the tunnel and cut, which form the outlet to the lakes, are completed.

NEW RAILROADS IN MONTANA.—In all probability the present year will witness great activity in railroad construction in Montana. The lines projected and under survey are numerous, and as nearly all of them are, practically, extensions or branches of trunk lines, the necessary capital for their construction is probably at hand. Governor Hauser, in a recent interview, made the following positive statements:

"As for general railroad building in Montana, it is my opinion that as much as \$10,000,000.00

will be expended in construction work during the coming year. Since I have been away I have made contracts for the extension of the Boulder valley road to within five or six miles of Butte, and it will be built into Butte as fast as possible. In a few days contracts will be let on the Helena & Northern to Marysville, and a little later to the coal fields on the Dearborn. The articles of incorporation of that company permit building to the Canadian line, and it is practically a settled fact that the road will be completed to Fort Benton before construction closes. Branches will also be built from Drummond to Phillipsburg and from Missoula up the Bitter Root during the coming year. All these plans are settled and will be carried out without any shadow of doubt. I saw several of the directors of the Union Pacific railroad, and from them learned that their company will certainly build from Butte to Helena, next summer, and that they will also build other branches in the territory in 1887. The Manitoba extension and the Montana Central will keep on work, and altogether the sum named is no excessive estimate for operations next year."

Two new companies have recently been incorporated. The Missoula & Bitter Root Valley Railroad Co., and the Drummond & Phillipsburg Railroad have both been organized by Governor Hauser and other capitalists of Montana, to construct feeders for the Northern Pacific. The former proposes to construct a line from Missoula up Bitter Root valley, with several branches to reach various sections of southwestern Montana. The line of the latter company will diverge from the Northern Pacific at Drummond, and will run up Flint and Camp creeks to Phillipsburg, and up Douglas creek to Granite.

Thoughts and Facts for Women.

What an enlargement of the horizon bounding woman's plane of action the last century has witnessed! Once, "To knit and sew, to pray to God, and to love man" made up the sum of life's possibilities and duties for the mothers of all mankind; but now, how changed, her sphere! To-day the circumference of her world is almost, if not quite, as large as that of her brother; and while each retains its special characteristics, hers offers almost as many possibilities and opportunities as his. To point out these wider possibilities, to suggest modes and

avenues of activity, to bring to the attention of the sex a multitude of thoughts, ideas and facts, useful, instructive and entertaining, will be the province of that portion of *THE WEST SHORE* over which is placed the heading, "Thoughts and Facts for Women." As the materialized world is the crystalized thoughts of the Creator, so, in a great part, woman's world, whose center is the home and whose circumference is as large as humanity, is the product of her materialized thoughts. It will be the aim of this department to focalize here the thoughts of women

upon the nursery, the kitchen, the parlor, the library, the boudoir, the social circle, the multitude of objects which appeal to her charitable promptings, and the various doors of business and professional life now slowly turning open to her on their rusty hinges, never more to be closed. In this work we call for the aid of our sisters on every hand. Send us in the results of your thoughts, your experience and your work in every avenue of activity. Let your light shine for the guidance of your sisters. It will interest and benefit you as well as them. Have you a new recipe, a new style of fancy work, a new contrivance for the adornment of your home or the relief of toil, a new idea for the social or industrial advancement of your sex? Let us know it, and we will endeavor to place it where it will be of benefit to others. Letters on such subjects should be addressed to "THE WEST SHORE, Portland, Oregon, Woman's Department."

How sadly neglectful of the art of conversation we are becoming. It is one of the happiest means by which we make our presence cheerful, increase our influence, and interchange and advance thought. But many of our thinkers, with superlative selfishness, will sit in company more like Grecian statues than like social beings. Everyone needs, and should have, his own hours in which to think for himself, but these hours should not embrace all his time. To be a good conversationalist, much painstaking and practice is needed, as well as to become skilled in any other art. He who would be a penman must practice many hours upon a single curve; he who would be a musician must practice long upon a single exercise before his touch brings out the correct musical sound; so the art of conversation, inferior to neither of these, should receive like attention.

To talk well one must think well. Thoughts are clothed in language when unuttered. Here lies the secret of good conversation. The thinker should have his sentences complete and connected, also grammatically correct. Then in conversation, if the thought wording be used, there will be no error. To secure good attention when talking, good attention must be given. There are some things in which giving and receiving are inseparably connected, and this is one of them. Nothing is more discourteous than to talk in an absent-minded manner, as though the person or persons to whom the words were directed were unworthy the entire attention. Among the most common errors of conversation, is either talking too much or too little, both of which should be avoided. The social powers

may be quite lost by disuse, and they may become tiresome and offensive to the possessor and all persons within hearing distance by overuse. Good, pure, refining and elevating thoughts should be expressed, but there should not be constant talk without anything being said. He has good judgment who knows and strikes the "golden mean" between talking too much and too little.

As a means of improvement in the art of conversation, experts recommend that there be special preparation, not only as to the substance, but as to the wording, of the sentences, and, as nearly as possible, their arrangement and order; then, when opportunity presents itself, skillfully guide the conversation in the desired channels. Madame De Stael is said to have thus prepared for her most brilliant repartees. This plan is a very commendable one for special occasions, when something of the circumstances may be known; but often there is no opportunity for such preparation. Then is when self, in all its simplicity and unequipped, must come forward to supply the demand. Yet, to be successful at such times, self must be forgotten, and such topics talked of as are familiar to the person or persons with whom the conversation is being held. When they talk freely and without restraint, a degree of success has been achieved. No rules can be given by which we may at all times be guided in conversation; but this much may be said, that we are usually interested and pleased when talking to good thinkers, who use real judgment and good common sense, and convey their ideas in grammatical and interesting language.

"By my troth, Nerissa, my little body is aweary of this great world." Thus the great dramatist introduces Portia in his "The Merchant of Venice." This character, like others of the great poet, is a true one. It pictures one of the many forms of discontent prevalent in life. "Aweary of life," yet surrounded by everything that wealth could procure to please, or friends invent to satisfy. Childhood and youth have simple ambitions which cling about everyone, and urge the powers of being to reach out, grasp and hold. So does every period in the life of the unfettered child of nature. But let there be a "surfeit with too much," or a "starving with nothing," each extreme is alike a canker in the heart.

The lovely Portia was surrounded with those most miserable conditions, ability to do, wealth depriving of all need to do, and, consequently, dictations denying all right to do, while at the

same time, she is possessed of a strong desire to do. She is able neither "to choose nor refuse," but must wait and see. What is harder than to wait while others do, or do not do, that which is of vital moment to yourself and yours? Yet this was Portia's lot. Happy all like her who are fortunate enough to have things turn out well, for the vehicle of events does not always drop results so favorably in real life, but often, along with a gnawing discontent, is bitter misfortune, with all its attendants. However, for the fair Portia, there came a successful wooer and a happy chooser. Alas! ere the marriage rites are over, comes trouble for Bassanio. Hastening to the church, their fortunes are made one and the bridegroom takes a loving departure for a brief time, to thwart adversity and redeem his honorable name. Immediately we see developed in Portia's character the noblest trait of woman—the power to rise equal to emergency. No longer listless and weary of the world, but with a determined purpose, she bends every faculty to its attainment. "I never did repent of doing good," she said, "and shall not now." Disguising themselves, she and her maid repair to the scene of Bassanio's trouble, where, with surprising ease, Balthazar frees the defendant and convicts the plaintiff. How often it happens that women, living in retirement, are unknown until something occurs to draw them out, when it seems as though the heart develops the brain.

As with Portia, so with many in real life; discontent comes through aimlessness and inactivity, and can be overcome only with removal of the cause. Let useful activity take the place of idle passiveness; let purpose supplant listlessness; and weariness and discontent

Shall fold their tents like the Arabs,
And as silently steal away.

The kitchen should be one of the brightest, cheeriest rooms in the house, especially if there are children in the family and the mother does the cooking, dish-washing and many other little things which must be done daily. A bright, cheery room imparts these qualities to its occupants; but a dark, dismal one renders its inmates nervous and foreboding; and this is no more true of any other room than the kitchen. The kitchen should also be sufficiently large and commodious to allow the presence of half a dozen persons in it at one time without interfering with each other. A nicely growing vine or two in the windows adds much to the cheer of the room, and such articles as are needed for use, which are not a few, should be pretty

and attractive. But let the room be ever so pleasant and attractive, and the person who is to occupy it be ever so pretty and fascinating, if she have not knowledge required to perform the work, the kitchen is a failure. This is a day of books—books on painting, books on fancy work, books on dress-making, books for the nursery, and books for the cook. The last named are in every complete kitchen. Cooking, is the chief art of the kitchen and the most useful art of the home, for health and good nature depend upon it as upon nothing else. The good cook is progressive, wide-awake, tries new recipes and studies the chemical qualities of food, that she may know what is nutritious and desirable.

—
Beauty! thou pretty plaything! dear conceit,
That steals so gently o'er the heart,
And gives it a new impulse unknown before.

Woman seeks to make home beautiful because of the refining, pleasing, quieting effect of beauty upon the occupants of home. When the master of the house comes in nervous and tired, he finds rest in the change of his surroundings, and the more pleasing the change the more perfect the rest. Then the boys—the boisterous, romping boys—step lighter when they enter a beautiful home. They love it better because it pleases them, and seek not so soon to spend their evenings away. Girls, too, are more refined and winsome in a beautiful home. Naturally, and often of necessity, woman uses the arts, whether great or small, to which she has attained. Not the least among these is fancy work—the most abused and most adored of all home arts. It is abused, however, because it is overdone; not because it has no merit in itself. It is wrong to do fancy work to the exclusion of necessary reading; to the barring out of needed work outside of home, a certain portion of which every woman owes to humanity. However, there often come times in the experience of every home-keeper, when a diversion from daily routine is needed. At such a time, a pleasing piece of fancy work relieves the mind of care and revives the spirits.

—
What is more fitting and right than that woman's pen should defend woman's cause? Woman alone can put herself in woman's place. A Hindoo lady, who some months ago had a letter on infant marriages published in the *Times*, of India, has recently sent in another thrilling contribution to the same paper on "Enforced Widowhood." Strongly and bitterly she speaks of "brutalized human nature" in this regard.

She tells how, directly after the husband's death, the widow's hair is cut off and her ornaments taken away; how she must thenceforth wear the coarsest clothes and eat the most unsavory food. Her presence is shunned, and she becomes the leper of society, doomed to pass her life in seclusion. She goes on to give a striking illustration of the venerable head of a Hindoo family sending out his creatures to hunt down a girl of ten to bless his remaining years, and then turning to his widowed granddaughter of fifteen and telling that her widowhood is a punishment for the loss of her husband, which can only be expiated by a life of austerity, devotion and purity.

The Queen Regent of Spain, despite prophecies to the contrary, still maintains her authority, and has done many wise and kindly acts which ought to keep her in power until her son is of age, or the Spanish people desire to establish a republic. A rebellion against her authority broke out in Madrid, but it was suppressed and its leaders condemned to death; she, however, pardoned them. This was followed by a decree, freeing the slaves in Cuba from their remaining years of servitude. This class comprises those negroes born in slavery before 1870 and not yet sixty years of age. Practically, slavery is extinct in the island of Cuba. There is some apprehension that both of those benevolent acts will get her into trouble. Her ministry resigned because of her clemency to rebels, and the planters of Cuba are anything but pleased at her interference with the slavery on that island. It will be remembered that for some years past all the children of Cuba, born of slave parents, have been freed.

This is the fiftieth year of Queen Victoria's reign, a fact which will be commemorated in a suitable manner by the people of the British Isles. To signalize the event, the Prince of Wales has proposed that an institute should be established to keep on permanent exhibition the arts and manufactures of the queen's colonial and Indian empires. Money is being raised to erect buildings in London to thus commemorate the fiftieth anniversary of a not inglorious reign. Say what men will, the fact remains that women have made better sovereigns than men. Comparing the rulers of all nations, there have been far more wise women monarchs, relatively, than of the other sex. But, curiously enough, the influence of women, when indirect, has usually been pernicious. The female favorites of kings have generally brought disgrace

upon the monarch whose councils they influenced. Victoria has already reigned longer than any other female sovereign in history.

A very convenient and ornamental music rack or paper holder may be fashioned from an ordinary saw-buck. The wood is first made perfectly smooth with sand-paper, and then ebonized or gilded. The ebonizing material comes in liquid form, and is put on with a brush and then rubbed smooth with a piece of coarse flannel. Two coats treated in this manner will give it a beautiful finish. A piece of pasteboard is folded together and cut to fit in the top, and this is covered on one side with satin, and on the other with plush. The edges of each end are turned in and overhanded together, and a plush cord sewed on the edge. Tack it in place. Broad satin ribbon is tied in a bow on each side where the pieces cross. Small castors are fastened on the legs, so it can be moved about the room easily.

The maurandya makes a beautiful hanging basket plant, but, to obtain the best results, put only one plant in a pot and give it plenty of root room. Then, with part of the branches twining around the wires which suspend the pot, and part of them hanging beneath it, you will have a lovely plant. The leaves become quite small in winter, and there are no blossoms at that season. We meet with success in the culture of plants in proportion to our knowledge of the requirements of each one, and they seem to possess as many idiosyncrasies as human beings. Pilogyne is another beautiful climbing plant, with leaves shaped like grape vine leaves, and small, fragrant flowers. It is a quick grower and easily raised.

A very pretty case for silverware may be made of a piece of ticking, thirty inches wide and the length of your cupboard, the length to be taken lengthwise of the goods. Turn up one-third for the pockets and stitch to the back, making the pockets the width desired, with a depth of ten inches. Bind with braid and work the stripes with a fancy stitch to suit the taste. Tack the case between two of the shelves, to the back of the cupboard. For occasional silver, make the case ten inches wider for a flap at the top. The pockets should be only large enough for one spoon, knife or fork.

Who has not noticed that that the world looks as different, when we are in different moods, as when we look through variously colored glasses?

This morning we were bright, cheerful, hopeful; the world was gay, happy and full of promise; our feet were light, our hands quick; our spirits bubbled forth into merry peals of laughter; so full of ambition and strength were we, that we felt equal to the accomplishment of titanic feats. But to-night, this world has sadly changed in one day; it is gloomy and morose; there seems to be a constant strife among its elements, and a tinge of blue is over all; it is a tired, work-a-day old world at the best. Let us change glasses; such scenes should be brief.

The old-timed custom of an ornamented basket has been revived, and is now in use on reception days, to contain the exquisite flowers, instead of putting them in stiff vases. The basket is made of straw and mounted on a tripod of canes. Any lady can make it. No earth should be introduced, only wet moss, and the flowers should be stuck in loosely here and there. Care should be taken not to make it top heavy. The canes and exterior of the basket, which may be of any shape desired, may be ornamented to suit the taste of the designer.

Who has not noticed that food which looks nice usually tastes good? There seems to be a close sympathy between the eyes and the stomach. Fruit crystalized in the following manner is very beautiful: Take one pound of loaf sugar, dip the lumps into water and place them in a kettle. Let boil, skimming carefully until it candies. Dip fruit into this while it is very hot, then put the fruit into a cool room. Stems of raisins and bunches of grapes may be treated in this way. Halves of pears crystalized are delicious.

To make a crochet bead watch chain, take a spool of black silk—B. String a lot of beads on the silk without breaking it from the spool; wind it on the spool. Make a chain of eight or ten stitches, then put the hook through the first

stitch of chain and pull the thread through, then slip one bead up to the work, and take up the thread again and pull it through both stitches you have on the hook. All the stitches and rounds are alike. Hold inside of chain toward you.

If you want a beautiful rustic hanging basket, take a number of round or square sticks, about one inch in diameter and varying in length from eight to fourteen inches. In constructing, begin at the bottom and build up, log-cabin fashion, using the shortest sticks first, thus making an inverted pyramid. Chink the openings with green moss, and line the whole basket with the same. This can easily be kept moist, and the plants twine over it very gracefully.

Riced Potatoes make another nice looking dish. Have a flat dish and a colander hot. With a spoon, rub mashed potatoes through the colander on to the hot dish; be careful not to allow the colander to touch the potato on the dish. A spoonful at a time is easily worked and they will resemble rice or vermicelli. They serve as a pretty accompaniment to a rolled rib roast of beef or venison.

A very pretty edging may be made by the following directions: Cast on sixteen stitches; knit across once plain; slip one, knit one, thread over, narrow, thread over, narrow, thread over, narrow, thread over, narrow, thread over, narrow, thread over, narrow, thread over, knit two, thread over, knit rest plain. Slip one, knit rest plain. Bind off two, knit rest plain.

Three and one-half pounds of round steak, chopped fine; one cup of rolled crackers; two eggs, one cup of milk, one teaspoonful of pepper, one tablespoonful of salt, a piece of butter the size of an egg, all thoroughly stirred together and baked three and one-half hours, will make an excellent beef loaf.

Useful, Entertaining and Instructive.

A NEW ILLUMINATOR.—Wood oil is now being made in Sweden on a very large scale. It is abstracted from the refuse of timber cuttings and from stumps and roots in forest clearings. It can not be burned in ordinary lamps, on account of the large amount of carbon it contains, but in lamps of special construction it is said to

give an excellent light, and to be the cheapest of all illuminants.

INVISIBLE NAILS.—For attaching mouldings and other light lumber, a new kind of nail has been contrived, which leaves no nail holes. It is made with a point at each end, and with an

outwardly projecting head, or shoulder, midway between the points. The nail is driven into the wood by means of a punch, which straddles the protruding point and bears on the head. When enough have been driven in, the moulding is placed over the nails and driven down.

CROSS OF WHEAT AND RYE.—A successful attempt at crossing wheat and rye is mentioned in Biedermann's *Centralblatt*. The grain capsules of the wheat were carefully opened and the stamens removed before they were developed. The pollen from the rye was afterward placed on the stigmas, and the whole head carefully tied up. The seeds resulting from this process were planted and readily germinated, producing plants that partook of the natures of both parent forms, though with those of the wheat predominating. Some of the ears had long glumes, while others had short ones. The seeds themselves showed a resemblance to rye, but less than to wheat.

LAUNDRY HINTS.—A spoonful of oxgall to a gallon of water will set the colors of almost any goods soaked in it previous to washing. A tea-cup of lye in a pail of water will improve the color of black goods. Napkins should lie in lye before washing; it sets the colors. A strong tea of common hay will preserve the color of French linen. Vinegar in the rinsing water for the pink and green calicoes will brighten them; soda answers the same end for both purple and blue. To bleach cotton cloth, take one large spoonful of sal soda and one pound of chloride of lime for thirty yards; dissolve in clean, soft water; rinse the cloth thoroughly in cold soft water that it may not rot. This amount of cloth may be bleached in fifteen minutes.

BUFFALO BREEDING.—In Manitoba there is organized the Northwest Buffalo Breeding Company, which is striving to preserve the useful points of that almost extinct animal. By crossing them with ordinary cattle, a half-breed has been produced, possessing, largely, the characteristics of the thoroughbred, differing in color, which will make the robe more valuable on account of its novelty. By judiciously crossing the thoroughbreds with half-bred cows, there has been produced three-quarter-breds which closely resemble the buffalo, the heads and robes being quite equal, if not superior, to the best now in the market; and a beef possessing the venison-like taste and nutritious qualities of the pure stock of the plains. The three strong points of

the new animal are: His noble head, his pelt, and his flesh.

TEN MILE CANNON.—The two largest breech loaders ever made, and, at the same time, the largest naval guns, are those for the English war ship *Benbow*. Each weighs two hundred and forty-seven thousand eight hundred pounds, or rather over one hundred and ten tons, and will probably carry ten miles. The shell weighs eighteen hundred pounds, and the charge of powder, not yet decided upon, will be about eight hundred pounds. The "proof" carriage, for guns from forty-three to one hundred and ten tons, has two four-wheel bogies like those of a locomotive, and four other wheels, braked, between them. The recoil is taken up by a hydraulic cylinder, and there is a loading derrick above the breech. Ships armed with these guns might form a position outside of the Columbia river bar and throw shells into Astoria.

THE BEE'S STING A USEFUL TOOL.—The most important office of the bee sting is that which is performed in doing the artistic cell work, capping the comb, and infusing the formic acid, by means of which the honey receives its keeping qualities. The sting is really a skillfully contrived little trowel, with which the bee finishes off and caps the cells when they are brim full of honey. This explains why honey extracted before it is capped over does not keep well. The formic acid has not been injected into it. This is done in the very act of putting the last touches on the cell work. As the little pliant trowel is worked to and fro with such dexterity, the darts, of which there are two, pierce the plastic cell surface and leave the nectar beneath its tiny drops of the fluid which makes it keep well. This is the "art preservative" of honey. A most wonderful provision of nature, truly! Herein we see that the sting and the poison bag, with which so many of us would like to dispense, are essential to the storage of our coveted product, and that without them the beautiful comb honey of commerce would be a thing unknown.

CHICAGO'S NEW OPERA HOUSE.—The great opera house at Congress street and Michigan avenue is now said to be as good as an accomplished fact. The design of the building has been fixed and over \$2,000,000.00 assured, with \$750,000.00 pledged. The ground of the proposed site has been leased upon the usual terms for ninety-nine years. The edifice will be ten stories high, with the main entrances on Mich-

igan avenue and Congress street, the latter being the principal passageway to the auditorium. A tower three hundred feet high, rising above the Congress street entrance, will complete the building, its lower section being square and decorated with carved fac-similes of the pyramids. The interior of the building has been almost entirely given up to the great hall of the European hotel, which accompanies it. The auditorium, on all ordinary occasions, will seat five thousand people, but the capacity can be enlarged to eight thousand for conventions and other great public gatherings. At present the design contemplates two balconies and fifty-one private boxes, with room for three thousand sitting on the main floor. The stage will be seventy by one hundred and twenty feet—dimensions which are only surpassed by those of La Scala, at Milan. The hotel portion will comprise five hundred rooms for guests.

TWINE FOR BINDERS.—Few persons have any idea of the enormous consumption of twine in this country. One of the greatest demands for the article comes from the farmers, who consume thirty-five thousand tons annually upon the self-binding harvesters. Allowing one mile to five pounds, it would be equal to a string long enough to go more than six times around the earth. It takes a length of about three feet of twine to tie a bundle of straw. The farmer sits on his machine, drives alone through his grain field, and without any assistance cuts, bundles and ties twelve acres of wheat grain per day. To such perfection as this has that unconscionable patent monopolist, the American inventor, reduced mechanism for doing farm labor. The twine used on the self binder is generally made either of Sisal or Manilla hemp. For binder purposes, the twine should have sixteen turns to the foot, and a length of three feet should have a breaking strength of not less than seventy pounds. The twine must be made carefully, free from swells or knots, or it will not run freely through the knotting device of the binder. The average consumption of twine on a binder is two pounds per acre. It costs the farmer about twenty-five cents an acre for his twine. The raw material costs more than Sisal hemp, and its twine sells for more, but the Manilla twine goes farther, and is actually cheaper in use for the farmer; but this fact, however, is not appreciated by him, and he sticks to the Sisal twine because offered a little less per pound than the better article of Manilla. Then, again, the Sisal twine breaks much oftener while running through the binder than the Manilla. At

every break the farmer must stop his machine and spend ten or twenty minutes to fix it up. He never thinks of charging his lost time against his poor twine. As long as he gets it for a cent or two less than the better article he is perfectly satisfied, no matter if it does bother him.—*Scientific American*.

POISONED BY A COBRA.—The *Morning Star*, of Jaffna, in Ceylon, reports the death of a taxidermist of the Victoria museum, in that town, from the bite of a cobra, under curious circumstances. While feeding a cobra, which he believed to be harmless from previous extraction of the poison bag, it suddenly bit his hand. For a few minutes he took no notice, thinking the bite harmless, but pain and nausea soon began. Carbolic acid was applied, ligatures were bound round the arm, an incision was made at the bite and the blood of the arm was wholly removed. Various antidotes were used, but the unfortunate man lost the power of speech, and soon after every muscle seemed to have become paralyzed, and breathing entirely ceased. Artificial respiration was, therefore, resorted to, and this operation was unceasingly continued for nine hours, when at last the patient made an attempt to breathe, and soon regained consciousness sufficiently to make his wants known. He steadily improved until Friday, the accident having occurred on Wednesday, and then astonished those around him by stating that during the severe operations of Wednesday night he was conscious of all that was taking place, but was unable to make his feelings known, not having power over a single muscle. It would seem that the poison paralyzed the nerves of motion, but not those of feeling, for he could see and hear and feel, although the physician, even by touching the eyeball, could get no response either of feeling or consciousness. His partial recovery was, however, followed by a high fever and inflammation of the lungs, and he died, perfectly conscious, on the following Sunday.

NEW AUSTRALIAN MINES.—Those who are continually on the lookout for new gold fields, and who, as is usually the case, are prone to give credence to wonderful stories in proportion to the distance of the new discovery, or the difficulty of reaching it, will be interested in the news from Australia, where a genuine "stampede" is now in progress. For several years, the government of Western Australia has offered a reward of \$5,000.00 for the discovery of paying gold deposits. This reward has recent-

ly been earned by two explorers in the Kimberley district, in the extreme northern end of the colony. The port of that region is Derby, on King's sound, at the mouth of the Fitzroy river, and the news from that place is that great numbers of people, the majority of them totally unfitted, by nature and experience, for the rough life of the mines, are thronging the route to the new gold fields. The roads are rough, the water supply scanty, and provisions and supplies of all kinds are held at exorbitant prices; yet, as has always been the case in mining excitements, thousands of "pilgrims" start for the promised land without an adequate supply of either money or provisions. The auriferous region is quite extensive, and the discovery of quartz ledges is by no means improbable. The

Kimberley district is a country about four and a half times the size of Scotland, with splendid rivers, and with millions of acres of pastoral and agricultural land. The climate has been commended by explorers as one of the finest and most healthful in the tropics. Last year the population numbered only about one hundred white men; the blacks, who are not numerous, are tractable. Sheep, cattle and horses thrive well, so that, whether or not the gold fields fulfill the expectations of those who seek their fortunes at the gold fields, there is a fine country to develop. Derby consisted lately of but a few huts and tents, and is the station of the government residents. Should the rush to the gold fields continue, doubtless this will be changed.

Editorial Comment.

With this number, *THE WEST SHORE* enters its thirteenth consecutive year of publication, and the first in its present form. The radical change in its size, style and general appearance has not been made without much careful consideration of all reasons which could be advanced for or against such a step, nor without a full knowledge of the great additional expense of publication in the new form. As the quantity of reading matter and illustrations is increased over one hundred per cent., the change involves a like increase in the amount paid contributors, compositors and artists, and for presswork, binding, paper and postage. The publisher, however, feels justified in taking this advance step, since the rapid increase in the subscription list indicates the wide and spreading popularity of the magazine. The numerous evidences of this esteem constantly being received are exceedingly gratifying, and earnest efforts will be made to so improve the magazine in every particular that it will receive, and merit, even wider popularity. There is room for a magazine that will represent the best there is in the West, either in its intellectual, social, industrial or natural features. *THE WEST SHORE* will be an "Illustrated Western Magazine," and as such, will endeavor to keep a little in advance of, rather than behind, the progress of the country. It will seek to be and do more, rather than less, than is expected of it, and in this way, be-

come an accepted representative of the West, for which no one will be called upon to apologize.

The question of school books, now that it is before the people, ought to be considered carefully and in a practical manner. That the published text books are deficient in such matter as pertains especially to the history, physical and political geography and geology of Oregon, is admitted; and this fact is the fountain head from which proceeds the movement to create a distinct series of text books. There is a practical method of supplying this defect without embarking in the manufacture of text books on a large scale. Let a volume be compiled, which will embrace, properly arranged, all the special information desired to be taught in our schools, and let this one volume be in the hands of every pupil of a certain grade, to be used in connection with the other text books, and made a part of the regular course of study. In this way the study of history can be made to include the history of Oregon; that of geography, the geography of Oregon; that of geology, the geology of Oregon. For convenience and economy these subjects may all be combined under one cover, and yet be kept as distinct as though each was given a special volume to itself. In this way the desired end may be quickly and economically attained. This volume can be produced at

home, and in a manner which will put no one to the blush. If there is a more practical method of accomplishing this result, let it be suggested at once.

Now that there is probably, to be a department of agriculture added to the executive branch of the government, it is a fair question for those interested in mining to ask, why "and mining" should not be added to the title. The annual value of mineral products of the United States is \$425,000,000, and about \$800,000,000 are invested in the business. Fully half a million men find employment through it, and it is one of the leading industries in nearly one-half the states and territories, and in some of them it overshadows all others in importance. Yet this great industry meets with almost no recognition by the government. With the exception of the reports of the United States geological survey, there is no official information of the character and extent of our mineral resources, which is of real value, since the director of the mint has no reliable information upon which to base his report. The amount appropriated for the geological survey is too small to carry on the work in as exhaustive and thorough a manner as it should be done. An industry so productive, so wide spread and capable of such great development, should receive greater official recognition.

Mossbackism is the bane of Oregon. It seems to be in the air, to be diffused like the germs of zymotic disease in the atmosphere, ready to seize upon any and all exposed to it, and, at times, to develop into a pestilence, an epidemic of stubborn opposition to advancement in any direction. The constant cry is that "it will not pay" to do here what is done elsewhere; that "it can't be done;" that we must "send East" for this thing and that thing. So accustomed are we to this, that, ordinarily, we pay little heed to it; but when the leading daily paper of the Northwest joins its voice to the mossback chorus, it is time to make a vigorous protest. Editorially, in an article opposing the proposition to create a set of Oregon text books for our schools, the *Oregonian* scouted the idea that work in that line could be produced here, which would compare with the text books made in the East. This is the same old argument which has been used as a club to beat down every attempt to establish new industries in this region, and it is certainly a surprise to see it wielded by so progressive a paper as our leading daily. There are three distinct features to be consid-

ered in this text book question—the compilation of the series, the artistic and mechanical work, and the average cost per volume. Whether we can compile a series *de novo*, equally as good as those now on the market, which are a development of years of experience, is doubtful. It is also doubtful whether, owing to the comparatively small edition required, we could make the average cost per volume less than the present selling price of those now in use. But it is not doubtful whether we can do the artistic and mechanical work in a manner to compare favorably with those of Eastern production. We have printers here who understand their business thoroughly, and so far as the making and printing of the illustrations are concerned, any facilities not now possessed by them could, and would, be added, were such a job as the publication of these text books offered them. THE WEST SHORE does not advocate this text book measure, however, since, as before stated, it is doubtful whether as good a series could be compiled, and whether the books would not cost as much, or more, per volume, as those now in use, owing to the limited number printed. It simply desires to protest against this reiteration of the old cry that "it can't be done," which is the greatest in the pathway of our industrial progress.

The current year will be one of activity and rapid and substantial progress in the Northwest. There will be more road construction than at any time in our history. The development of legitimate industries, as distinguished from stock speculation and wild cat schemes, is progressing more rapidly than ever before. Railroads are being built on every hand to reach both our agricultural and mining districts. Gold, silver, coal, and other minerals are being developed, and are being provided with facilities for transportation never before enjoyed. There will be expended for the improvement and material great sums of money, and the increase in our population and the expansion of the limits of our markets, will call for a corresponding increase in production, as well as enlargement of the variety of our products. It is evident that 1887 will be a year of great and substantial prosperity for the great Northwest than ever before enjoyed, the more so that we have, in a measure, turned our attention from speculation in corner lots to more productive and enduring industries.

A Chance for All to Smile.

THE WILLAMETTE BRIDGE.

In an article on page 19, describing the bridge being constructed across the Willamette river, at Portland, a verse of this somewhat celebrated Oregon poem is quoted, and the circumstances under which it was written are related. The poem is so original in style, and carries such a humorous vein of mock tragedy, that it is here given in its complete form for the amusement of the readers of THE WEST SHORE.

Behind the pines had sunk the sun,
And darkness hung o'er Oregon,
When on the banks o' Willamette
A youth was seen to set and set,
And set and sing unto the moon
A wild, yet sweet, pathetic tune—
"They're going to build, I feel it, yet,
A bridge across the Willamette."

"The boat drifted slowly o'er
Reached, at last, the other shore;
Stain—brave, courageous soul—
Or to land with fishing pole.
"Look! from o'er the waves a strain—
"That voice! that wild refrain—
"Are going to build, I feel it, yet,
A bridge across the Willamette."

"The night, the south wind blew;
The Oregonian dew;
In sides the torrents pour'd,
As rose, the rivers roar'd—
At youth with webbed toes,
Drearily, in rubber clothes—
"Are going to build, I feel it, yet,
A bridge across the Willamette."

"The chief, in pure Chinook,
"Klahowyah, tumtum, mamook;
Tye yeh muckamuck,
Tika nika tika cumtux;
The same white man, nika klonas,
Am stick mamook, skookum hyas;"
But silent grew his savage tongue,
For high above his war whoops rung—
"They're going to build, I feel it, yet,
A bridge across the Willamette."

"The citizen from Yarmany,
Who heard him from the brewery,
Sang out, "Young fellow, shtop dot shout!
Dot pridge, you bet, vas pout blayed out;
Some dings I know I doid you soonas,
Dem land agents vas d— shmart coons;
Dot eye vas in my pridge, you bet!
Dot pridge agross dot Willamette!"

So winter rains and summer flowers
Passed on, with sad and pleasant hours;

Yet still sat on the river bank,
A man, bald-headed, lean and lank,
Grown old, still singing the same tune—
" 'Tis coming, coming, coming soon!
They're going to build, I feel it, yet,
A bridge across the Willamette."

Years pass'd—there came a traveler roun'
To visit our East Portland town;
As on the river bank he stood
He saw a sight that froze his blood—
Right there, beneath the glowing sun
There sat a glowing skeleton,
Which turned its hideous, fleshless head,
And grinned most horribly, and said:
"They're going to build, I feel it, yet,
A bridge across the Willamette."

Again the trav'ler came to see,
And stood upon the granite quay,
Gazing long and silently
Upon the river rushing by.
A monster bridge now spanned the stream,
And murmuring, as in a dream—
"They've built a bridge, that's it, you bet,
A bridge across the Willamette."

Mistress.—Patrick, I gave you that alcohol
with which to clean the mirror—not to drink.

Patrick.—Yis, mum, but its a dale betther to
drink the alcohol, and thin blow me brith on
the glass.

"Will you have some tonic with your oysters,
Mamie?"

"Yes. Get me some ginger ale."

"Ginger ale?"

"Yes; that pops, I believe, when you open it."

"I must have order in this court room," sternly
demanded a justice of the peace. "I must
and will have less noise and confusion here.
I have already disposed of three important
cases without being able to hear a word of the
evidence."

"Who was that tall gentleman your daughter
was walking with last evening, Mrs. Wiggins?"

"I don't know exactly, but he's a literary
man and lives in Chicago. I know he must be
well off, too, for he knows such a lot about nice
horses."

"Are you sure he is a literary man?"

"Oh, yes! he said he was a bookmaker,"

PUBLISHER'S ANNOUNCEMENTS.

ESTABLISHED 1875.

THE WEST SHORE.

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

Subscription price, per annum,	-	-	-	-	-	-	-	-	-	\$2.50
To foreign countries, including postage,	-	-	-	-	-	-	-	-	-	3.00
Single copies,	-	-	-	-	-	-	-	-	-	.25

Subscriptions can be forwarded by registered letter or postal order at our risk. Postmasters and News Agents will receive subscriptions at above rates.

L. SAMUEL, Publisher, 171-173-175 Second Street, Portland, Or.

Entered for transmission through the mails at second class rates.

Under this heading the publisher of THE WEST SHORE will make the public acquainted with matters of interest concerning the magazine.

Bound volumes for 1886 are now ready, and 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 1883 and 1885 can be had at \$2.50 for 1885 in stiff paper covers, and \$2.00 for 1883 in flexible paper covers.

The large holiday issue is now exhausted, but there are on hand a quantity of the elegant colored engravings 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.

Attention is called to the editorial on page 102 in regard to the new form of the magazine. Owing to the extra time and labor required in making the change of form, the publication of the January number has been unavoidably delayed. The time lost will be made up as rapidly as possible. The February number will be ready by the twentieth, the March number by the tenth and the April and all succeeding numbers will be ready for distribution on the last day of the preceding month.

We have in course of preparation a large bird's-eye map 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.

The February number of THE WEST SHORE will be one of special interest. It will contain an illustrated poem, "In Memory of the Pioneers," by O. C. Applegate; the first installment of a deeply interesting story by O. W. Olney, entitled "Blue Dirt and Bedrock Pitching;" an entertaining description of Dunfermline, the ancient seat of Scottish royalty, with illustrations, by C. M. H.; historical and descriptive articles on the Columbia river and Puget sound, accompanied by numerous beautiful engravings of the scenery which greets the traveler's eye. The various departments, especially that for ladies and that giving the facts about the resources and development of the Northwest, will be complete and valuable.

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To be agreeably served, buyers must perform their part thoroughly and well, state their wants clearly and fully, omit nothing, such as the size of hose, gloves, etc., the color desired, or their NAME or address, and must allow sufficient time for the transit of letters and goods. They must remember, also, that the merchant is limited in what can be procured, that all things are not possible with him, and that the supply of any kind of goods may be quickly exhausted. It is, therefore, not always possible to send just what was ordered, no more than it is to find it by a tour through the stores of so large a city as this, and possibly, here lies a principal cause of dissatisfaction. For illustration: certain kinds of goods may become extremely popular after samples have been sent almost broadcast, and may be sold before the orders from such samples can be received; as it required months to produce the stock already sold, it is out of the question to manufacture more; what shall be done?—if the purchasers live within a day's mail route of the city they can be notified that such is the case, and other samples submitted; but if they be far away much time would be lost in doing this; were they at the counter similar goods would be shown them from which to make another choice; as they are absent, the difficulty is overcome by making the choice for them and sending it subject to their approval, they having the same opportunity to reject as though present, for their money will be refunded if they return the goods, which they are at perfect liberty to do.

That those who live away from town may stand on the same footing with those who come to our stores, samples of nearly all kinds of goods are sent without charge; these samples are not scraps, odd pieces and remnants, but are cut from the rolls of goods as received from the manufacturer, and are sent freely and willingly. Mistakes occur in spite of the utmost care, but when made known are corrected and made good.

As letters are sometimes lost, a failure to receive a reply indicates that the letter never reached us or our answer has gone astray; if you do not receive a reply in due season, write again. Confidence in the merchant is the key-note to success in shopping by mail. The reputation of our house is a guaranty that its principles and dealings are correct, and open and above board, and that it is worthy of confidence; if we sell goods subject to their being returned, for which we must refund the money, it is evident that it is for our interest to send only the goods wanted; and as it is desirable to retain the same customers year after year, it is proof that the general treatment must have been satisfactory to have resulted in so large a business.

Our catalogues of information will be sent without charge to any and all who may desire.

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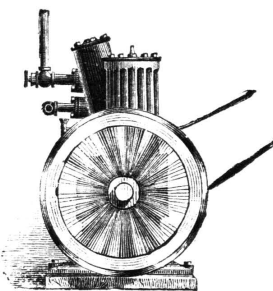
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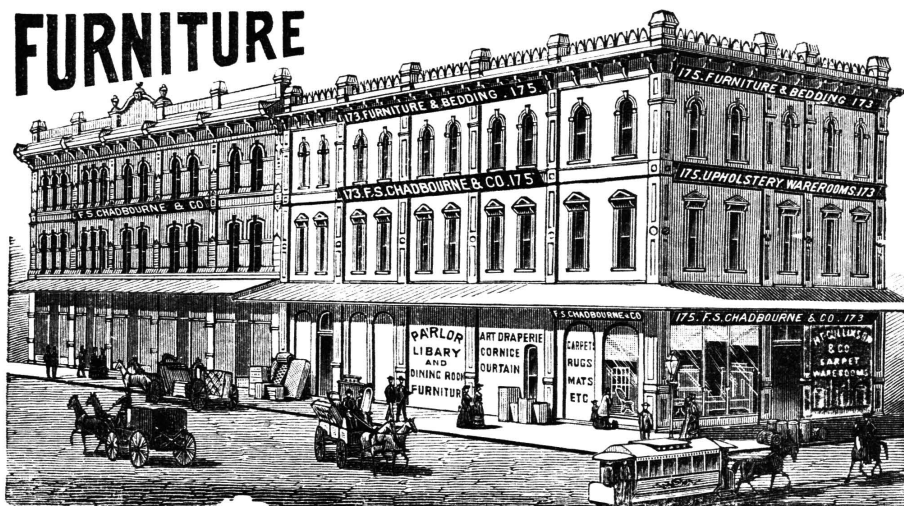
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Santa Maria...	Wed.	Feb. 2	Santa Maria...	Fri.	" 28
Yaquina City...	Tues.	" 8	Yaquina City...	Thu.	Feb. 3
Santa Maria...	Mon.	" 14	Santa Maria...	Wed.	" 9
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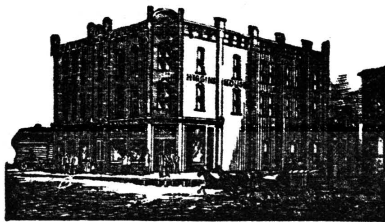
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