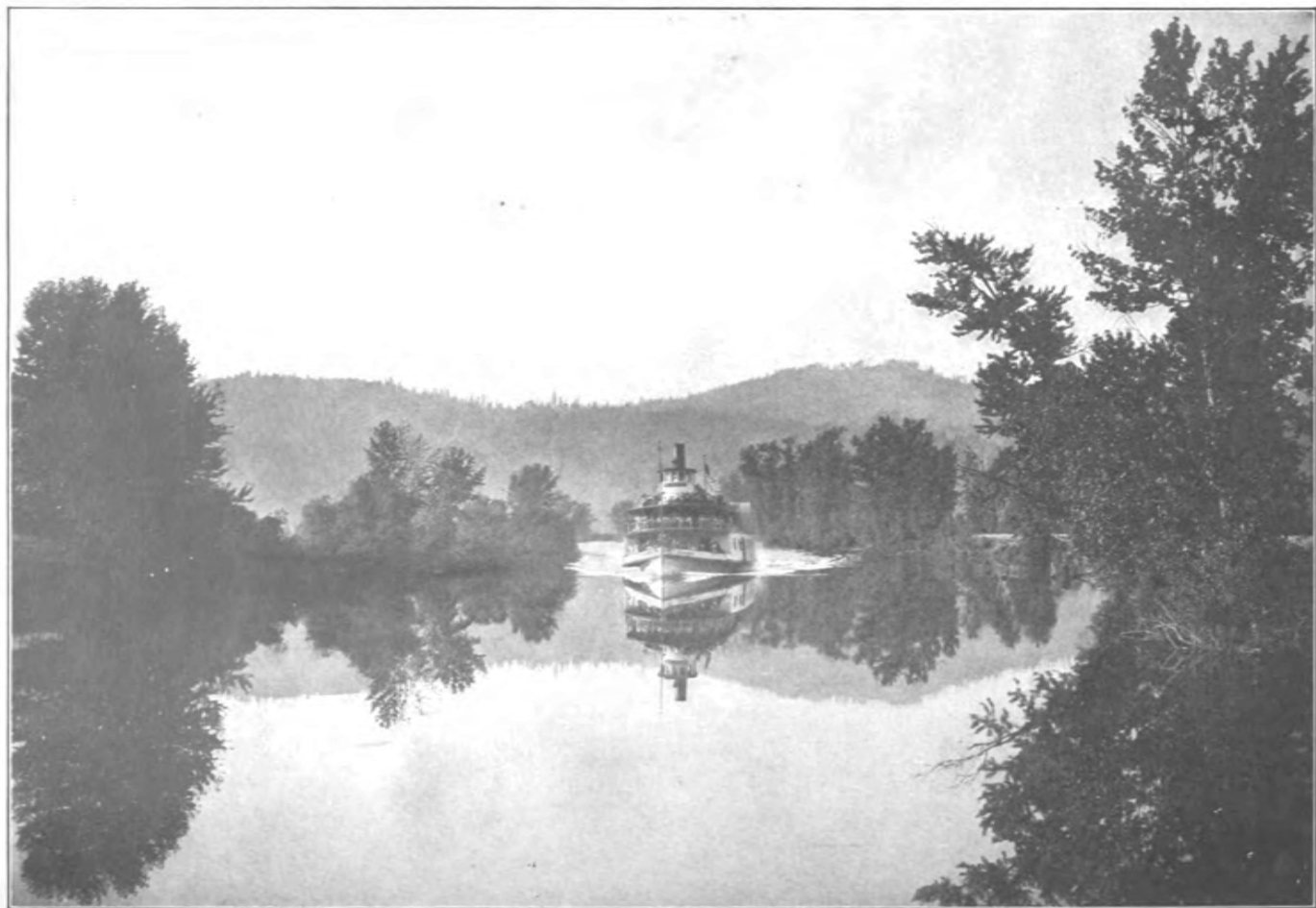




CŒUR D'ALENE LAKE, NEAR ST. JOE CITY, IDAHO, IN THE REGION TRAVERSED BY THE CHICAGO, MILWAUKEE & PUGET SOUND RAILWAY

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OPENING UP THE NORTHWEST

A RECORD IN RAILROAD BUILDING BY THE LATEST
LINE TO THE PACIFIC COAST

By ELLIOTT FLOWER



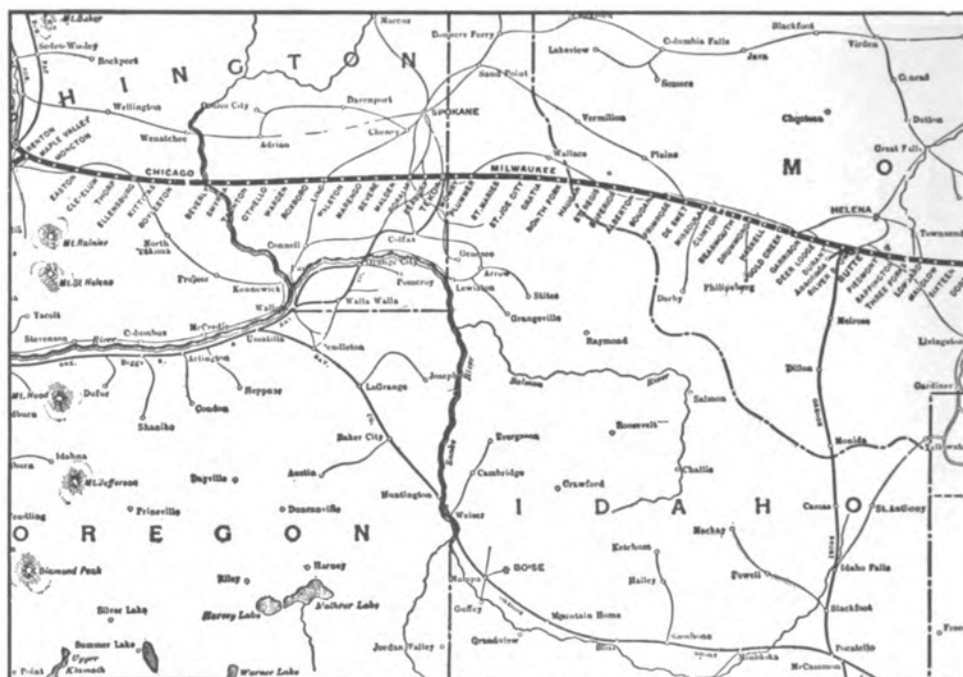
ABOUT the time this article meets the eye of the reader—possibly a little earlier—a fourteen-hundred-mile railroad will be in operation that had no existence three years ago. Fourteen hundred miles is some distance—about half again as far as from New York to Chicago,—and three years is no great stretch of time. Put the distance and the time together and you will have a record in railroad building.

Further, this new road crosses three mountain ranges and two large (not to mention several small) rivers; and mountains and rivers are not conducive to ease or rapidity of railroad construction. At its highest point, the road reaches 6350 feet above sea-level, and has twenty miles of bridges and thousands of feet of tunnels. If you care for any more figures, to give an idea of the magnitude of

the undertaking, consider these: It required 200,000 tons of rails to build the road; 60,000,000 cubic yards of earth and rock were excavated; the cost was approximately \$85,000,000; and it was built during a period of financial depression when most of us, and especially the great corporations, were cutting down expenses. This last fact, it should be said, had something to do with the rapidity of construction.

The railroad is the Chicago, Milwaukee & Puget Sound, otherwise known as the Pacific Coast Extension of the Chicago, Milwaukee & St. Paul; and it extends from Mobridge, S. D., to Seattle and Tacoma. Note, please, that it has western termini—always termini, never terminus; and that the title of the road itself, without mentioning either, practically includes both. There is a story in that. If you can find anywhere in the literature of the road a mention of Tacoma without a corresponding mention of Seattle, or *vice versa*, you will

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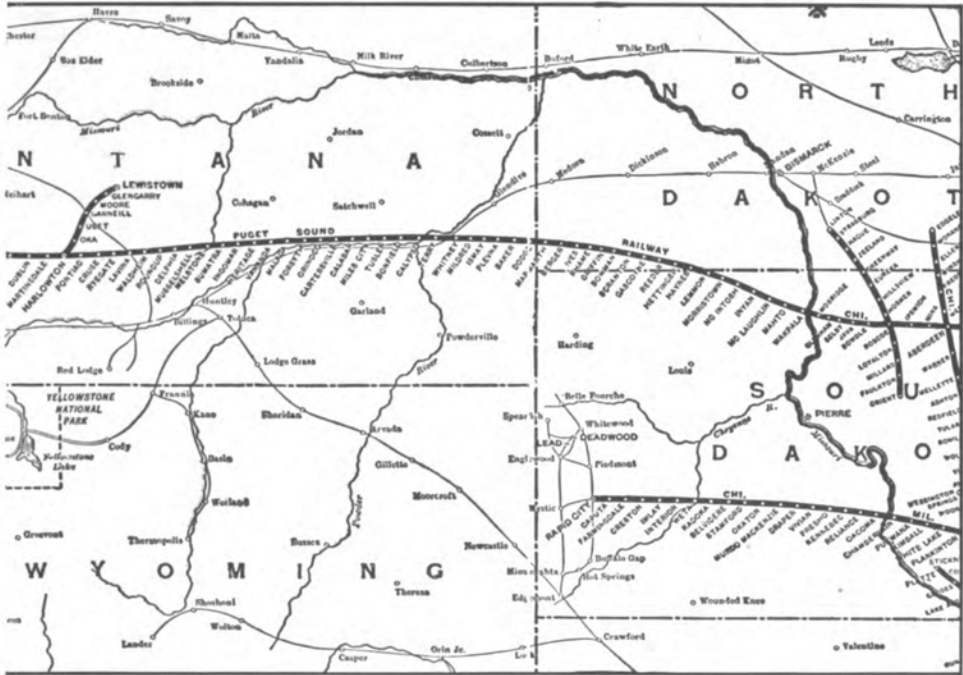
THE NEW RAILROAD TO

The Chicago, Milwaukee & Puget Sound Railway begins at Mobridge, South Dakota, at a point that point of the Chicago, Mil-

be entitled to a prize. If you can get any officer of the road to mention one without mentioning the other, you will be entitled to an even greater prize. Indeed, it is currently reported that, to avoid possibility of error, no one is allowed to write the name of either, but that rubber stamps, combining both, are provided for use whenever mention is to be made of the two points at which the road ends; and that these stamps are equally divided between those that read "Seattle and Tacoma" and those that read "Tacoma and Seattle." For, as is well known, there is rivalry between these two Puget Sound cities beside which the rivalry of St. Paul and Minneapolis or Fort William and Port Arthur is a mere kindergarten rumpus. The road divides at a point about equally distant from both, and a branch—no, not a branch, but half of the main line—runs to each.

This, merely to show one of the problems that beset the builders.

The road was begun April 15, 1906; it was in operation from Mobridge to Butte (over half the total distance to the coast) in September, 1908; the last rail was laid March 29, 1909; and the entire line will be in operation about the time this is published. But not for through passenger traffic. It will be quite useless to plan any through trips for some time to come. The road is as perfectly constructed as possible, but every new road is rough. The ballasting is not completed, and the road-bed must be given time to settle. There is an innovation in waiting until everything is in perfect condition before putting on through passenger trains, and the idea has much to commend it from the company's point of view. The man who rides on a new road, immediately after completion, usually ends by remarking, with some heat, "Well, I'll be hanged if I ever ride on that roller-coaster again! I had to strap myself into my berth." And the



SEATTLE AND TACOMA

three quarters of an inch to the left of the right-hand edge of the map, and is a continuation from waukee & St. Paul Railway

road gets a reputation that is quite undeserved, but that may, nevertheless, stick to it for years. So there will be no haste in putting on the through trains in this case. It will be freight first, then local passenger, and then through passenger.

The road crosses the Missouri and Columbia rivers and the Rocky, Bitter Root and Cascade mountain ranges, and these five obstacles naturally presented the great problems of construction. The Missouri is spanned by a \$2,000,000 steel bridge, just west of Mobridge. (Divide that name, by the way, into "Mo." and "Bridge" and you will have the derivation.) The bridge is 1270 feet long, has a steel approach on one side of 128 feet, and an approach that is 281 feet steel and 1289 feet timber trestle on the other. The timber trestle, of course, is filled in with earth and rock.

The Columbia River bridge cost much less (\$840,000), but is longer

than the other, having a total of 2900 feet of steel work and 1623 feet of trestle. It required two years to build this bridge, so it was under construction during almost the entire time that the rest of the road was being built.

The longest tunnel on the line is the one known as the St. Paul Pass tunnel in the Bitter Root Mountains, which is 8751 feet. The St. Paul Pass tunnel is near Taft, Montana, a town that will call for more extended attention later. The tunnel was worked from both ends, of course, and so perfect were the plans that the bores were only $\frac{1}{16}$ of an inch out of the way when they came together. Two other tunnels, of 2268 and 1148 feet respectively, are in the Rockies.

Considering these obstacles, the rapidity of construction was truly remarkable. It required about ten years to build the Union Pacific and Central Pacific, which together reach

from Omaha to San Francisco, and the distance that they cover on this main line was not much greater than is that of the Chicago, Milwaukee & Puget Sound. Furthermore, they had every incentive for rapid construction, there being Government subsidies with bonuses for speedy work. But this more recent road, of course, while lacking Government aid, had many other advantages. For instance, the Union-Central Pacific was built from both ends toward the middle. That was the best that could be done at that time, as there was no way of getting material to any intermediate point. The Puget Sound road, on the other hand, could forward material by the Northern Pacific and begin building at points in the middle as well as at each end; and this is what it did.

Then, too, it had facilities that were altogether lacking in the earlier days: the track-laying machine and other appliances to do work that was formerly done by hand; improved tools of all kinds; every device that modern invention has contributed for expeditious building. And it used all of the labor-saving devices. Fifteen years ago a mile a day was considered rapid track-laying, but much of the space between Mobridge and Tacoma-Seattle was covered at the rate of five miles a day.

And the effect of the financial depression must not be forgotten. At first glance, that would seem to introduce only another obstacle, but a second thought will show that the trouble is merely to get needed cash. If a man has it, or can get it, he can do more at such a time than at any other: he has a clear field with the shopkeeper or the manufacturer or any one else whose attention he desires to claim. They are going to do just about the best they know how for him, and do it in the quickest possible time. And there will be a dozen applicants for anything in the way of an odd job that he wants done, when, at another time, he might have to skirmish to get it done at all. Well, that is a modest illus-

tration of the position in which the Puget Sound road found itself. There could have been no better time to secure quick work. It had the money and was spending it—eighty-five million dollars of it—at a time when no one else was spending a cent more than he could help. Labor was plentiful, as it always is in times of depression. The road could not only get all the labor it needed, but it could get the best, and to be able to pick your labor obviously counts for much. In many similar ways the corporation that was spending this enormous sum reaped advantage. So, having the money, the depression was helpful rather than hurtful and contributed much to the speed record made. Still, it made the record, which is the main thing.

Labor, however, contributed some problems, even if the usual one was lacking. Taft, Montana, was both the scene and the cause of one of these problems. Before the President rises to bow his acknowledgment of the honor of having this town named after him, let me hasten to say that it has been described as "a town of eighteen saloons and not much else." This was during the construction period, however. Taft, as I have already explained, is near one entrance to the St. Paul Pass tunnel, and tunnel-workers do not move along as rapidly as track-layers or graders. Wherefore, Taft had a construction camp of about three hundred men in its immediate vicinity for a long, long time. Perhaps that may explain the presence of the eighteen saloons. Men want some diversion, and there is n't much in a construction camp. Nor are railroad laborers noted for their abstemiousness. Taft provided the diversion, and liquor was a leading feature of it. There was also music, but that was only a lure. Men, wearied by the monotony of work in the tunnel and dreary nights in camp, drifted to Taft and neglected to get back to work the next day. After a holiday there were sometimes as many as fifty or a hundred absentees. The "fame" of

Taft spread among railroad men from St. Paul to Seattle, for Taft presented quite a problem in the construction of the road. Other

The former was of the opinion that the men were not so anxious to get drunk as they were to find diversion, relief from monotony, and the Taft



STARTING A TUNNEL ON THE CHICAGO, MILWAUKEE & PUGET SOUND RAILWAY

camps moved on, but this tunnel camp, owing to the nature of the work, remained anchored in one place.

Thus it happened that the news of Taft came to the ears of a travelling secretary of the Railroad Branch of the Y. M. C. A. He has told of it in the *Christian Herald*, and says he heard of Taft in both St. Paul and Seattle. So he journeyed to the town and interviewed the superintendent of the construction camp. The latter was pessimistic as to any influence holding his men in check.

brand of amusement was the only kind available. This theory was at least worth testing, and the secretary was instructed to go ahead at the expense of the company.

A building was constructed, and a man was sent out from Y. M. C. A. headquarters to take charge of it. It was brilliantly lighted and provided with writing-desks, comfortable chairs, games and a phonograph. Even the lure of the "canned" music was not overlooked; for the music had much to do with taking the men to Taft. And

arrangements were made to cash their pay checks, which removed another Taft lure. It was a success. The day following Christmas, when the company would ordinarily have figured on a hundred absentees, there were only two. Furthermore, it paid in a business sense, aside from any humanitarian advantage, for the increased efficiency and reliability of the men more than compensated the company for the outlay.

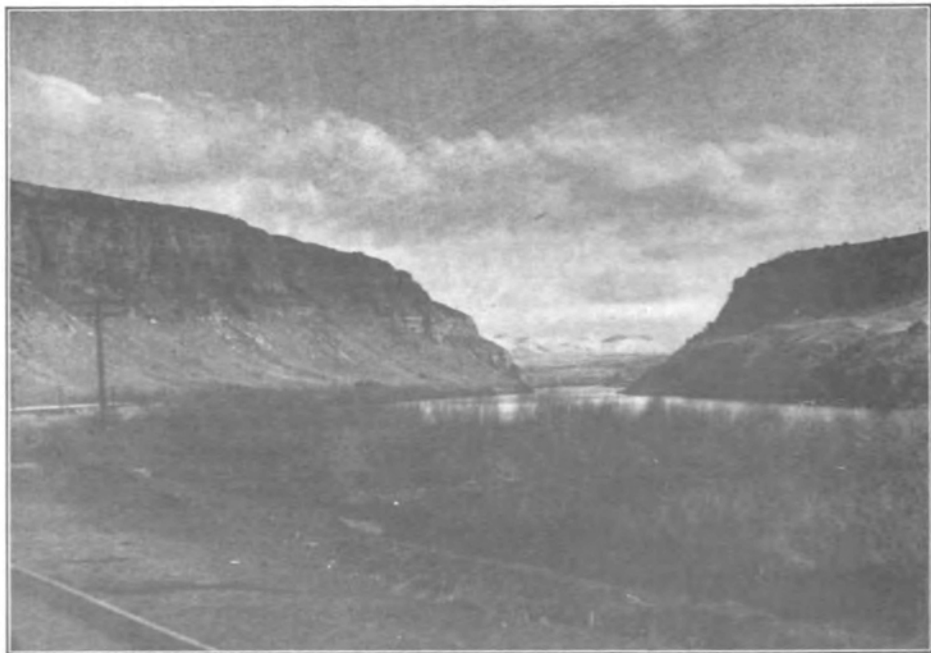
Aside from the conveniences provided by the Y. M. C. A. building at this camp, perhaps there was a big idea in the phonograph. Club or recreation buildings are out of the question for constantly shifting camps but "canned" music is easily portable. At least one other camp had it. A correspondent of the *Anaconda Standard* thus describes the scene:

On a visit to one of the camps in the Hell Gate Valley, not long ago, the writer was impressed by one sight that further illustrates the change in conditions in railroad construction camps. The day's work was over, and the men had just come from the cook house after their evening

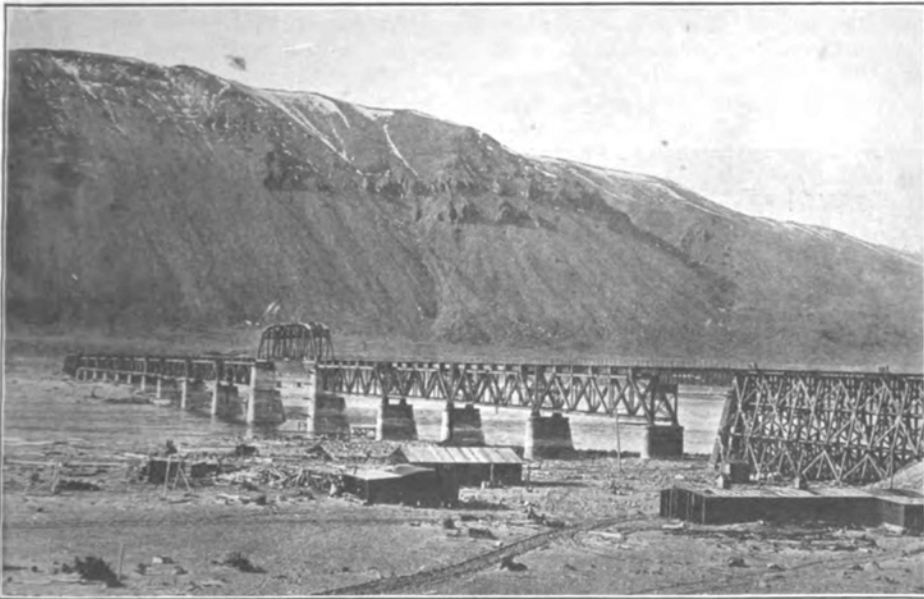
meal. On a grassy plot near by they gathered smoking, while one of their number brought out a graphophone and for an hour delighted his audience with the reproduction of the latest music, both popular and classical.

This becomes more significant when it is coupled with the plaint of the superintendent at Taft previous to the establishment of the club building. The notes of a saloon piano were wafted to his ears, and he remarked, "That's what draws them. These men get so restless for amusement that when they hear that music they can't keep away from it."

Possibly music in some portable form may be accepted as a regular and necessary detail of construction-camp equipment before long. If it will keep the men contented, or even help materially to that end, it will be a good investment, for the human problem is one that occasions much trouble in all such enterprises. Men will get restless in such circumstances, even as the superintendent observed, and restless men are hard to control. They are also likely to be irritable,



MISSOURI RIVER GAP AT LOMBARD



THE CHICAGO, MILWAUKEE & PUGET SOUND RAILWAY BRIDGE ACROSS THE COLUMBIA RIVER
AT BEVERLY, WASHINGTON

and irritable men are prone to welcome trouble, even going so far to search for it or make it. Contentment is the best assurance of peace and good work. If music will assure contentment, a full orchestra would be a profitable investment on some jobs. The company, in this instance, did everything possible to make the men comfortable, so far as the equipment and provisioning of the construction camps were concerned; but comfort, to such a degree as could be furnished, does not always mean contentment. Witness the trouble at Taft. The company, however, had no serious human problems to solve during the progress of the work, so it must have managed to keep the men reasonably contented.

To return to the road itself, the reasons for its building are naturally of interest and importance. Railroads are not built for sport; there must be paying traffic. There is much traffic in this northwest country of course, but two roads—the Northern Pacific and the Great Northern—already run through it to Puget Sound; and when it comes to the ocean trade

reaching the North Pacific coast, there is the Canadian Pacific to be considered also. The new line will be a scenic line, as its route shows. It passes through four Indian reservations, many beautiful and fertile valleys, and has mountain scenery to spare. But scenery does not attract freight, and railroad profits do not lie in passenger traffic alone. So wherein is the excuse for the road?

Well, it passes through much new territory—new from a railroad point of view, that is. It parallels the Northern Pacific for some distance, but the rest of the way it has a territory that is pretty much its own and to which settlers are already flocking. By way of illustration: It began operation as far as Butte, Montana, last September, and in March of this year it carried eight hundred cars of immigrant movables into that district. Immigrants, for sake of economy, combine and charter entire cars when moving their household goods—sometimes two and sometimes three or more families using a single car. It has been estimated that the average for these cars is two-and-a-

half families, which would mean about two thousand families for a single month, with the road in operation only to Butte. As a further illus-

Another promise of new traffic lies in the Indian reservations. These are the Standing Rock, Flathead, Cheyenne and Cœur d'Alene. Indians



A RAILWAY SURVEYORS' CAMP IN THE WILDERNESS

tration of the possibilities of new traffic, from a thousand to fifteen hundred letters of inquiry from possible settlers are received at the main office in Chicago daily; and this takes no account of letters that go to offices in other cities.

On January 1st of this year Three Forks, Montana, gave a sort of housewarming, just to let people know that it was on the map. This was deemed necessary because it was not on the map until the new road began running trains in September. Therefore, it was just about three months old; but it already boasted of a depot and some eighty business and residence structures, and the road itself was building a roundhouse and machine shops. That shows how towns grow. Three Forks is near Bozeman.

do not produce much traffic, but their reservations do, when opened for settlement, and it is expected that the first three of these will be opened within a year. In fact, negotiations to that end are in progress now.

For a little better understanding of the possibilities, it may be well to describe the route briefly. Leaving Mobridge, South Dakota, it crosses the Missouri River, passes through the Standing Rock Reservation, runs to Marmarth, in North Dakota, to Terry, Montana, on the Yellowstone River, where it crosses the line of the Northern Pacific, follows the Yellowstone to Miles City, Montana, passes through the Musselshell River valley to Harlowton, crosses the Northern Pacific again at Lombard, proceeds to Butte, then through the Deer Lodge

valley to Garrison and Missoula, Montana, to Haugan, then through the Cœur d'Alene district to Beverly, Wash., where it crosses the Columbia River, passes through the timber lands of Snoqualmie Pass in the Cascade Mountains, and follows the Cedar River to Maple Valley and Tacoma—Seattle.

All in all, there would seem to be plenty of new traffic to be developed without materially encroaching upon the business of the other roads. But, as a matter of course, the new line is also looking beyond Seattle and Tacoma. Herein it will come into direct competition with the Great Northern, Northern Pacific, Canadian Pacific, and, later, with the Grand Trunk Pacific of Canada. The last is not yet completed to the coast, but it is pushing along rapidly and must be considered in all plans. All of these roads are, or will be, after the trade with the Orient—at least, so much of it as comes by way of the north coast points; but the men who have put the new line through believe there will be enough for all. Anyhow, they expect to get their share and will have direct steamship connection with the Orient. James J. Hill has no more roseate visions of what this trade should and ultimately will be, than have they.

Alaska is expected to furnish as much or more. The development of Alaska, it is claimed, has hardly been begun as yet, in spite of the fact that, since its purchase by the United States, it has produced approximately \$300,000,000 in gold, silver, fish, fur, and other products. Its trade with the States in 1908 amounted to \$46,000,000 and is the greatest *per capita* that any country on earth can boast. This, however, is held to be only an indication of what may be expected in the future. It has one of the greatest quartz mining properties in the world, with assurance of many more. It has, according to government geological experts, the greatest copper deposits in the world. It has, according to Geological Survey reports, large areas of the best

coal discovered west of the Allegheny Mountains. It has a better soil and climate than Finland, which has a population of 3,000,000 and exports annually \$3,000,000 in agricultural products.

All these facts were considered in building the road, it being held that, in addition to its mineral deposits, there was no reason why it should not do as well as Finland agriculturally. What it most lacks for the development of its undeveloped resources, including copper, coal and agriculture, are facilities for transportation—not necessarily railroad or water transportation, but mere wagon-roads that will open up some of the valleys of the interior. It is largely because of the lack of these, it is claimed, that Alaska's exports, except along the coast, have been confined to precious metals that do not call for heavy freighting. But all necessary facilities for getting whatever may be of value to man come in time, and in time Alaska is certain to increase largely the traffic at North Pacific ports.

A consideration of the resources of Alaska may seem to be wandering rather far afield from the building of the Pacific Coast Extension of the Chicago, Milwaukee & St. Paul, but it is one of the things that justified the expenditure of the tidy sum of \$85,000,000, and, as such, is certainly entitled to some attention in an article on that enterprise. One always likes to know why a thing is done, and when you want to know why a railroad is built, you must look for the traffic possibilities.

The new road has two advantages that are worthy of note: It shortens the railroad distance between Chicago and Puget Sound, and it has easier grades. The latter point is of the utmost importance in operation. The hardest grade on a division is the "ruling" grade on that division. In other words, you cannot send over it a train that is heavier than the engine can drag up the steepest grade, no matter how easy the rest may be, so the grade counts for

much in economy of operation. It has been customary in road-building, especially through the mountains, to build rather roughly at first. The expense was bound to be heavy at best, and this not only reduced the first cost but was also a saving of time. Furthermore, in many cases, the early traffic was sure to be light, and heavy grades and sharp curves did not make so much difference: the main thing was to put the road through and get it in operation. But in the long run economy of operation beats economy of construction. A heavy grade means short trains or extra engines at the difficult points—and these mean additional expense. So some of the older roads had to spend much time and money later in easing the grades and straightening the curves, and it cost them more than it would have cost to do this in the first instance. The Puget Sound road, profiting by these experiences, has preferred to spend the money necessary to eliminate grades and curves, so far as possible, during construction. The figures of these grades would be meaningless to the average reader, so it is only necessary to say that they show an easier "haul" through the mountains than the older roads have. That counts for much with a line that crosses three ranges.

The Chicago, Milwaukee & St. Paul system, which, of course, includes the new line, is the second to

extend its tracks all the way from Chicago to the Pacific coast and the first to reach the North Pacific. The only other system that covers the entire distance is the Santa Fé, which runs to Los Angeles and San Francisco. All other roads send their trains over connecting lines, as the St. Paul has done heretofore, and as it will continue to do, so far as through passenger traffic is concerned, until freight and local passenger traffic have put its roadbed in what it considers satisfactory condition. It will be quite useless to plan a trip to the Seattle Exposition over the Puget Sound extension, for the exposition is likely to be over before any attempt is made to run through trains over that line. If you choose to go by the St. Paul road, your train will still run over one of the other lines after leaving the city of that name.

One noteworthy feature of the building of this extension has been the absence of brass-band methods of exploitation. As a matter of fact, very little has been said about it during the progress of construction—no more than the magnitude of the undertaking compelled. There was not even a "golden spike" provided for the laying of the last rail at a point two miles east of Missoula, Montana. There was no celebration, and no speech beyond the superintendent's remark to the foreman, "Well, Bill, that's a good job!"



CHICAGO, MILWAUKEE & PUGET SOUND STATION AT MUSSELSHELL, MONTANA