FROM FIELD TO FACTORY

HOW SUGAR BEETS ARE RAISED IN GRAND RONDE VALLEY.

Several Processes Through Which the Beet Goes Before It Comes Out Sugar.

LA GRANDE, July 14.—(Special correspondence.)—At this season of the year the Grand Ronde Valley is the scene of a picturesque and at the same time a somewhat arduous and homely task. No phase of the work of raising sugar beets, on a commercial scale, is altogether pleasant, and that of hoeing and weeding and thinning is least so. There are many lines of work, however, which pay less, and which require more skill and entail greater danger. Weeding is a plain and simple task. It can be learned in five minutes, and a boy can do it better than a man. The laborer must get down on his knees or he must bend his body nearly double, and if he is to make any headway he must keep persistently at it. He easily accustoms himself to the work, however, and after the first week the period of rapid resignations ends. The wages are not high, but the fare is good, and the percentage of Japanese and Chinese among the laborers is after all small.

Nevertheless, this question of labor remains the chief problem in the culture of beets. Utah has succeeded better than any other state in sugar beet culture for two reasons. The land holdings are small, rarely exceeding 50 acres, and nowhere else are there so many children to the man as in Utah. The Utah farmer does not have to concern himself with the labor problem, for his work is all done by the family, and done as well as it is usually done by $1 50 per day men. In the Grand Ronde Valley the conditions are just the reverse. There are no small tracts. Farmers generally own from 160 to 640 acres, and often more. They have been accustomed to big figures. If one acre would not yield a profit of $10 they sowed two. When the sugar beet enthusiasm was at its height they sowed large tracts, hired many men and continued to "farm on horseback." As a result they failed, and many now condemn the industry. Some learned their lesson and are now profiting by it. The lesson of all experience in this matter is that beets can rarely be grown with profit in tracts of over 20 acres. Men who have the faculty of organization and of handling men may do it, but the average farmer had better let it alone. With 20 acres of beets added to his other lines of work, the farmer does not notice the expense, and he finds in September a comfortable income from that source. In trying to handle a larger amount many a farmer has cultivated an intimate acquaintance with the mortgage companies.

The sugar beet industry is unquestionably a profitable one. Indeed, there are few crops that will compare with it when it is properly managed. An acre will yield from 4 to 25 tons, 11 tons being the average yield. The factory pays $4 50 per ton. It costs from $26 to $35 to raise an acre of beets. The average net profit to the grower is accordingly $19 per acre. In comparison to this, with wheat at 30 bushels per acre, and at 40 cents per bushel, is $12, and from 40 to 60 per cent of this is necessary for expenses. The relation of beets to wheat then is as 19 to 6.

All ground will not raise beets successfully, and the observant farmer is careful to select such tracts as are of sugar-producing soil. On land that has previously been cropped, about eight loads of manure to the acre are found to be of great advantage. Experience has shown that a rotation of crops produces the best results. If beets are sown this year, another crop, say wheat, should be raised the next, and perhaps potatoes the next. By this means the wasteful practice of Summer fallowing is made entirely unnecessary. Experience has also shown that saccharine matter cannot be rightly developed even in the Grand Ronde Valley without irrigation, and it is now recommended that beets should not be sown on land that cannot be irrigated. It is also recommended that beets should not be grown on lands containing mineral. The beet will become mineralized, as it were, and the quality made less valuable. Every part of salt neutralizes two parts of sugar.

The work of raising sugar beets divides itself into three seasons, planting, weeding and harvesting. The planting depends upon the season, but is ordinarily done in the Grand Ronde Valley about the middle of April. The seed is sown in drills, 18 inches apart, on ground which has been plowed deep the previous Fall. Fifteen pounds of seed to the acre is used. It often occurs, because of insects or unfavorable weather and soil conditions, that a "stand" is not secured, and replanting becomes necessary. This may be done as late as the 1st of June, but most growers prefer a half stand, if it is early, to a good late stand.

Under right conditions, weeding, hoeing and thinning should commence three or four weeks after planting. The beets are thinned to a distance of from four to six inches in the row, though some leave as much as a foot or 14 inches of space. Generally speaking, the distance depends upon the soil. The thinning and weeding is done in this manner: One man does the blocking out; that is, he hoes the weeds between the rows and cuts the beets, leaving a bunch, say, every six inches. If he is an expert he is able to leave but one beet in a place, making the work of the boy who follows easy. With a little experience the weeder is able to keep up with the blocker-out. The amount allotted to the man may be judged from the following figures. There are now being raised in the Grand Ronde Valley about 3000 acres of beets for the La Grande sugar factory. The number of men employed in the various fields is about 300. Young beets do not suffer from too much hoeing, but the rule is one hoeing after the weeding, and after that the horse cultivator; cultivation should cease when the leaves are large enough to break easily.

The harvest begins from September 1 to 10. In August, the company's farmer takes samples of the growing beets to the laboratory for testing, to determine whether the crop needs more water or not. If the beets carry a high per cent of sugar it is best not to irrigate. As soon as enough beets are matured, the company notifies the farmers to begin digging. The factory begins work at the same time on the residue syrup of the preceding year, and is ready for the new crop when a sufficient number of tons has been received.

When digging begins, the beet plow is first used. This is merely a blade which slides under the ground and cuts the top root. This done, it is a simple matter for a boy to grab the beets by the tops and throw them into piles, taking five rows at a time. He thus leaves a windrow of piles for the cutters or toppers. From five piles of un-topped beets, the cutters leave one of top beets containing from 1000 to 2000 pounds, which makes it a simple matter to load the heavy wagons. The top is cut off just below the crown, usually with an old-fashioned sickle. Two boys can keep two men topping.

The beets are hauled from the field direct to the factory and weighed. They are then dumped into the long sheds with trough-shaped bottoms, through which run rapid streams of water. This carries the beets to the beet wheel, with pockets, which lift them into the washer. The washer is an oblong tub with a shaft and augur, which keeps the beets working to one end, from which they fall into the cups of the elevator. From the elevator they drop into the shredder. This is a revolving tub, with a set of knives. The weight of the beets upon the knives causes them to be cut into shreds about the size of a lead pencil. From the bottom of the shredder a long sheet-iron spout, with a hood underneath, extends to a large circular tub called the battery, with a series of cells around the sides. The shredded beets are dumped first into one cell and then another until all are full. A stream of hot water is then turned in, and this passes from one cell to another until all trace of saccharine matter is removed from the beets. After the sugar is removed the pulp is salted and carried out to the silo, to be used later as stock food.

After the juice is measured it runs into the first carbonating tanks, which are in size 6x8x12 feet. There the juice is mixed with milk of lime, and when it has undergone a certain test it passes into the first filter presses, where the juice is strained through coarse canvas. Then it passes to the second carbonater; then to the second filter press; then to the third carbonater, where it is mixed with sulphuric acid, and then to the third filter press. It next passes to a little sheet-iron tank, full of cork shavings, for clarifying. After this, the process of evaportion begins.

In the first stage it passes through coils of half-inch pipe, which in the halslande factory are five miles in length. There the sugar is refined about 60 per cent. From there it passes to the pressroom.

HARVESTING BEETS ON THE FARM OF J. L. CAVINEN.

The sugar is boiled in an absolutely air-tight tank, since in this way it can be boiled at a lower temperature, and the grain is not melted. This work is done by skilled sugar-boilers only, who, by testing, can dump at a fine or a coarse grain. From 12 to 15 tons of what is called melada are thus handled at a time.

After the sugar is boiled, it goes to the mixer, a long, triangular-shaped trough, where it is kept in motion to prevent hardening. Underneath the trough is a set of centrifugals, into each of which 150 pounds of melada runs. Each centrifugal is perforated and lined with a very fine wire screen. The centrifugals are set in motion at the rate of 1500 revolutions per minute, which throws the melaba against the sides. It falls through the holes and into a gutter through which it passes to the receiving tank. As the molasses leaves the sugar it takes on a lighter hue. To hasten the process blueing is used. To cause it to dry rapidly a jet of steam is turned on. When the centrifugals are stopped the sugar is dumped into a worm leading to an elevator, that carries it up to the granulator. The granulator is a long sheet-iron tank that revolves slowly at an incline, and is kept at a heat of 120 degrees. On this the sugar is thoroughly dried, and from it, it passes by means of a chute to the sacking room, the last stage before the marketing.

This is, roughly, a comprehensive description of one of Oregon's chief industries, from the first labors in the production of the raw material to the completed article of commerce. It is an industry which is already successful, and which is bound to expand as the people learn that it means good money for intelligent effort. W. D. DODD.

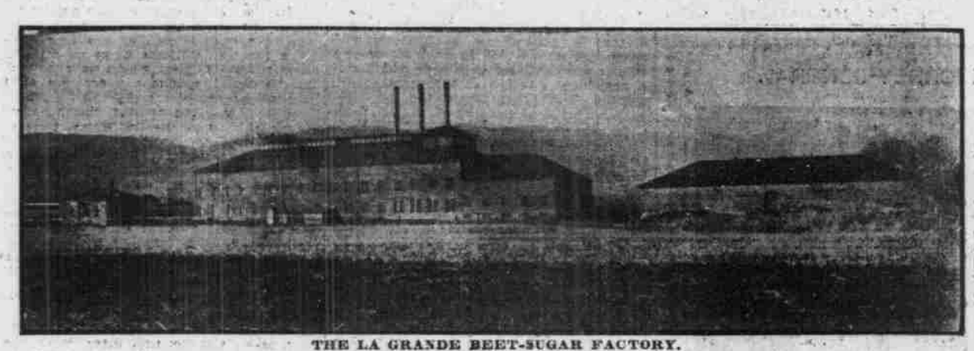
English Work Beginning at 6 A. M.

Cassier's Magazine.

The idea which underlies the supposed necessity in British shops of the 6 o'clock start is, that a long day's work is secured. But if masters were always in their shops at 6, moving about among the men, they would see that this early work is, as a rule, the most unproductive in the day. Those who make a casual early visit once in a moon to their works just to wake up the men and the foremen, might as well save themselves the trouble for aught they learn thereby. They do not see the many leakages that go on, and neither are they qualified by experience to estimate the subtle differences between the men in those early hours and those who start work under better physiological conditions. In these flying visits they see only that time is "put in," and time instead of energy is the common measure of work done in the factory. Very often the writer has observed that men, after losing quarters, have got through more work in the day than others who commenced at 6 o'clock. The loss of time in quarter-days—"knocking off corners"—is obvious; but energy losses do not show directly in the books, nor are they always apparent to those who suffer thereby.

Nor does the mischief consist alone in broken rest. Early rising carries with it exhausting conditions. Men are hungry and slack in consequence of going out into the raw cold without food or warm drink in the stomach, and having to work thus for two hours and a half before breaking fast. Often they get wet, and stand in wet clothes and boots without the fortifying influence afforded by food at the proper time.

A potato famine in Silver City has sent the price up to 8 cents per pound.



THE LA GRANDE BEET-SUGAR FACTORY.

WEEDING SCENE ON FARM OF G. H. WEISINGER.

SOMETHING OF ZEBRAS

A NEW SPECIES DISCOVERED IN A CONGO FOREST.

In Its Wild State It Is a Beautiful Animal—Discussion as to Its Value for Domestic Purposes.

Zebras have always had a great attraction for English feeling, says the London Spectator. We look on them as far the most beautiful wild example of the horse, and the horse is undoubtedly the favorite animal of Englishmen. But the zebras have what no horse has, natural ornament in a very high degree. They are among the most elaborately decorated of all mammals. In the days when no one knew much of their habits, the skins were sold as those of "sea horses," wonderful beings evidently constructed in the salesmen's imagination from the pictures of sea gods drawn by fish-tailed steeds, with attendant sea-blue nymphs.

Recent mails from Africa have again directed attention to the zebras. A new species has been discovered somewhere on the borders of the Congo forest, apparently a quagga with the stripes reversed; that is, instead of being striped on the head and shoulders, it is said to have a tawny head and back, and a striped belly and legs. The latest news as to zebras generally is the discovery of astonishing herds of them on the plains that lie south of Albert Nyanza, Albert Edward Nyanza and the plateaus between the great lakes generally. They are said to be seen feeding like ponies in a field, and to have almost no fear of man, as many of the tribes which inhabit the district are only vegetable feeders, and do not even dig pitfalls for the abounding game. It is this abundance of the natural wild horse of the district which has prompted Mr. R. Stordy, M. R. C. V. S., to write a detailed recommendation to the Foreign Office suggesting the domestication of the animals for draught purposes in the fly country and Central Africa generally. He believed that the wild zebras could easily be taken up in kraals, and the foals regularly broken and used for domestic purposes. From these a tame race might be bred, just as tame ostriches are now perpetuated from a stock which 50 years ago was wild on the African deserts. There is not the slightest doubt that this is the natural and sensible thing to do wherever the climate or the "fly"—the similitude of which enlarged to the size of a rabbit in the Museum of Natural History has instructed the public in its deadly effect on horses in a very thorough manner—makes horse carriage impossible. The first need is that some hardy animal larger than a donkey shall be found.

The constitution of all the zebras is astonishingly robust. They are naturally dwellers on high plains and dry mountains. But they are found in the fly-haunted veldt of East Central Africa, near Mombasa. In this country they live out-of-doors through the winter, and Professor Ewart's zebra hybrids were more hardy than the ponies, and did well out on the Pentland hills. They are thirsty animals, and need to drink twice a day. But they can live on very scanty food, and thrive on the meager plants of the wilderness. Their legs are clean, hard and perfectly formed. "One never finds a crock or a lame one, except from wounds, among a troop," writes Mr. Anderson Bryden, and the feet are models of perfection, small, clean, perfectly shaped and as hard as flint, and are evidently peculiarly adapted to the high dry plains upon which these animals make their homes. Their speed is very considerable, though probably it varies with the condition of the zebras. When the grass is dry and hard they are probably in better condition than when the veldt is covered with green succulent food. Mr. Bryden considers that the Burchell's zebras gallop very fast and very well. "Several times in tail-on chases across the plains I have had to relinquish the pursuit as hopeless, although well mounted for the South African veldt. The Cape hunting pony is, however, always severely handicapped for the occasion, with its burden of man, rifle and equipment. On level terms, I think a fair horse would always beat the fastest zebra that ever scoured the plains. When zebras are charged they do not gallop abreast, but string out into file, like antelopes, with a stallion leading."

All the enthusiastic descriptions of the wild horses on the pampas or on the steppe can be paralleled by the pictures drawn by delighted hunters and travelers, men well used to see and judge the comparative beauty of animals, of the wild zebras. It is natural enough, for the zebra is a far handsomer and better built creature either than the half-wild ponies of the don or the fiddle-headed, dusty-looking broncbos. The mountain zebra, which is really a mountain-living species, appears to even greater advantage. It is at home among the crags and precipices of the high, stony mountains, only not snow-covered because the snow line of the dry and hot South Africa is higher than ours. It is by no means so scarce, as is commonly asserted. It is still found in the greater part of the mountain ranges of Cape Colony, which, now that attention has been drawn to their geography by the evasive Boer commanders, are, it will be admitted, numerous and difficult enough to shelter and preserve them. They are found in the Cedarberg, near Piquetburg, in the Roggeveld in Sutherland, in the Swartzberg (in all of which ranges fighting has been going on quite recently, and of which Piquetberg is unpleasantly near Cape Town), in the Sneeuwberg, near Graff Reinet, and near Cradock, Cathcart and Ultenhage. The mountain zebra is also found in German territory in Damaraland. There it lives in the most inaccessible parts of the mountains in small troops. Sentinels are posted, just as by ibex or chamois, and the herd, when frightened, gallop over the crags and rocks almost as surefooted in their speed as the ibex. It is probably the largest animal inhabiting really mountainous ground. It is 7 feet 4 inches long from the muzzle to the set-on of the tail, and stands 12 hands high. Burchell's zebra varies a good deal in size in different districts. The variety called after Mr. Selous is 8 feet 5 inches long in the body, and stands nearly 13 hands. There is still more difference between the smallest varieties of Burchell's zebra and the big Grevys or Somaliland breed. There is as great a contrast between a large mule and a Norfolk donkey. It is from those large-boned upstanding zebras, if from any, that the draught animals should be selected. Probably they would interbreed with the Burchell zebras, though it is doubtful if the stock would be fertile.

Not a New Idea.

Neither the idea nor the fact of taming zebras is new. In the middle of the last half-century half-broken Burchell's zebras were sometimes seen for sale in Cape Town, with a rider mounted, to show that they were rideable. It is said that they were exported to the Mauritius for draught purposes. If so, it would be interesting to know from the records of the colony whether they were a success, and whether they were bred there. The females are fairly prolific, even in confinement, and the males cross freely with horse mares as well. It is possible that they may have been in Mauritius for some time, as camels were in Jamaica in the very early days of the plantation. The experiment has been tried with complete success in England, and in South Africa. Mr. Walter Rothschild's team, three zebras and a pony, was fairly well broken, though perhaps the animals were not all that could be desired in the stable. At Barnum's show a team of four zebra mares was as quiet as so many sheep. The writer visited them when waiting for their turn in the performance, where they drew a car. They were in pairs, ready harnessed in their stalls. All four were standing quietly with no one near them, not fidgeting in their harness or pawing the ground from ennui, as some of the ponies were. In the Field of March 11, 1893, appeared a photograph of a team regularly driven in the Transvaal. Messrs. Zeederberg, the contractors for the line of coaches which ran from Pretoria to Petersburg, bought eight half-grown Burchell's zebras from a Boer hunter named Grobelaer. Their object was much the same as that which suggests Mr. Stordy's advice, viz., to help in the coaches during the season of horse sickness. They were lassoed when four months old, and broken to harness in a month. They were then run in the coach with six mules. The account given of them describes them as "perfectly quiet and well trained. In harness they pull well, and are willing and never jib. In fact, one of them will do his best to pull the whole coach himself. They are softer-mouthed than the mule. They never kick, and the only thing in the shape of vice which they show is a tendency, when first handled, to bite. But they soon give it up when they understand that there is no attempt to hurt them." This is really a wonderfully good character for animals taken up from absolutely wild stock. Wild asses, for instance, would probably be intractable, though possibly wild reindeer could be trained to act with tame ones. Mr. Bryden chronicles another experiment, which was a failure. Sixteen Burchell's zebras were brought in from the interior by Dutch hunters. They seemed perfectly tame, and were broken in harness and saddle. But it was found that they would not stand regular coach work, and were more trouble than horses and mules. This is very probable. But where horses and mules cannot live, they would probably be less trouble than human porters.

Correct Name.

Buffon has the credit of giving to the animal its present name, but with more correctness than in the case of the other familiar animal whose name begins with "z," "Zebu," which he appropriated to the humped cattle of India, is the common name throughout the East for cattle as distinguished from buffaloes. The name will survive in the Caucasus for the wild bison of the Old World. "Zebra" is adapted by Buffon from what was said by old travelers to be its vernacular name in the Congo region. It is believed to be thoroughly African. The history of the lost zebra, the quagga, is a curious one. It seems to have been a local species, very little distributed, and seems never to have gone north of the Orange Free State. As the Boers used to shoot the quaggas to feed their Hottentots, and later to make leather from their hides, they disappeared as early as 1860, though some were believed to have survived in the Orange Free State till 1878. As the white rhinocerous, none of which were supposed to exist north of the Zambesi, has been found living in a fresh enclave somewhere near Lake Victoria, it is still possible that a separate and surviving branch of the lost quagga mad be discovered there also.

WILL HOLD FIRST PLACE.

This Country Destined in Short Time to Lead the World.

No competent observer can doubt that in wealth, manufactures, material progress of all kinds, the United States, in a very few years, must hold the first place in the world without dispute, says Frederic Harrison in the Nineteenth Century. Its population will soon double that of any nation of Western Europe. That population will have an education second only to that of Germany and Switzerland, and superior to that of any other European nation.

The natural resources of their country exceed those of all Europe put together. Their energy exceeds that of the British; their intelligence is hardly second to that of Germany and France. And their social and political system is more favorable to material development than any other society devised by man. This extraordinary combination of national and social qualities, with vast numbers and unbounded physical resources, cannot fail to give America the undisputed lead in all material things. It is a curious instance of the power of national egotism that Europe fails to grasp this truth—that Germans, with their wretchedly poor country, narrow seaboard and scanty rivers, ports and minerals, still aspire to the first place; that Frenchmen fail to see how their passion for art, rest and home has handicapped them in the race for supremacy in things material; that Britons, in their narrow island and their comfortable traditions, will not recognize that the industrial prizes must ultimately go to numbers, national unity, physical resources, geographical opportunities, trained intelligence and restless ambition.

The ease with which men can pass from one locality to another, from one climate to another, from one business to another, the entire absence of social barriers or class distinctions, the abundant means of technical and scientific education, leave it open to each man and woman to make their own lives. The vast continent, with its varieties of climate and soil, produces almost everything except champagne, diamonds and ancient buildings. With New York and San Francisco, the two grandest natural ports in the world, open to the ships of the Atlantic and the Pacific, with Chicago or St. Louis as the center of traffic, the clearing-house of the boundless trade, the material prosperity of the American Continent must reach in the 20th century a height of which the 19 centuries before it never dreamed. When the Englishman talks about the evils of protection and the benefits of free trade he is reminded that the United States occupies a continent self-sufficing, except for a few luxuries, which has its own free trade on a gigantic scale, over an area far larger than all Western Europe. It seems impertinent to lecture men about their neglect of free trade, when in their own country they can travel in every direction thousands of miles without ever meeting a customs frontier. They insist that they are the greatest free-trade people on earth.

Of course, for the American citizen and the thoughtful visitor the real problem is whether this vast prosperity, this boundless future of theirs, rests upon an equal expansion in the social, intellectual and moral sphere. They would be bold critics who should maintain it, and few thinking men in the United States do so without qualifications and misgivings. As to the universal diffusion of education, the energy which is thrown into it and the wealth lavished on it from sources public and private, no doubt can exist. Universities, richly endowed, exist by scores, colleges by many hundreds, in every part of the Union. Art schools, training colleges, technical schools, laboratories, polytechnics and libraries are met with in every thriving town. The impression left on my mind is that the whole educational machinery must be at least tenfold that of the United Kingdom. That open to women must be at least twentyfold greater than with us, and it is rapidly advancing to meet that of men, both in numbers and in quality. Nor can I resist the impression that the education in all grades is less perfunctory, amateurish and casual than is too often our own experience at home. The libraries, laboratories, museums and gymnasia of the best universities and colleges are models of equipment and organization. The "pious founder" has long died out in Europe. He is alive in America, and seems to possess some magic source of inexhaustible munificence.

Fish workers are in great demand at Astoria.

WINE OF GARDUI
CURES WOMAN'S ILLS

MANHOOD RESTORED "CUPIDENE"
This great Vegetable Vitalizer, the prescription of a famous French physician, will quickly cure you of all nervous or diseases of the generative organs, such as Lost Manhood, Insomnia, Pains in the Back, Seminal Emissions, Nervous Debility, Pimples Unfitness to Marry, Exhausting Drains, Varicocele and Constipation. It stops all losses by day or night. Prevents quickness of discharge, which if not checked leads to Spermatorrhœa and all the horrors of impotency. CUPIDENE cleanses the liver, the kidneys and the urinary organs of all impurities. CUPIDENE strengthens and restores small weak organs.
The reason sufferers are not cured by Doctors is because 90 per cent are troubled with Prostatitis. CUPIDENE the only known remedy to cure without an operation. 5000 testimonials. A written guarantee given and money returned if 6 boxes does not effect a permanent cure. $1.00 a box, 6 for $5.00, by mail. Send for FREE circular and testimonials.
Address DAVOL MEDICINE CO., P. O. Box 2079, San Francisco, Cal.
For sale by S. G. SKIDMORE & CO., 151 Third Street, Portland, Oregon.

Downing, Hopkins & Co.
ESTABLISHED 1893.
WHEAT AND STOCK BROKERS
Room 4, Ground Floor Chamber of Commerce

TRAVELERS' GUIDE.

Burlington Route

Make a Holiday of It.

You don't go East every day.
When you do go, go comfortably—via the Burlington Route.
Choice of three routes—through St. Paul, Denver and Billings, Mont.
The St. Paul line is famous for its fine service Denver for its fine scenery, Billings for being the through car line to Kansas City and St. Louis.
Drop in and see us—we'll take pleasure in giving you all the information you need.

TICKET OFFICE: Cor. Third and Stark Sts. R. W. Foster, Ticket Agent.

NORTHERN PACIFIC
Time Card of Trains
PORTLAND

	Leaves.	Arrives.
"North Coast Limited"	2:00 P. M.	7:00 A. M.
Twin City, St. Louis & Kan. City Special	11:30 P. M.	8:00 P. M.
Olympia, Tacoma, Seattle, South Bend and Gray's Harbor Exp.	8:35 A. M.	5:15 P. M.

Two trains daily to Spokane, Butte, Helena, Minneapolis, St. Paul and the East.
A. D. CHARLTON, Asst. Gen'l Pass. Agt.
255 Morrison St. Portland, Or.

THE GREAT NORTHERN
Ticket Office, 122 Third St. Phone 680

LEAVE		ARRIVE
No. 4 6:00 P. M.	The Flyer, daily to and from St. Paul, Minneapolis, Duluth, Chicago and all points East.	No. 3 7:00 A. M

Through Palace and Tourist Sleepers, Dining and Buffet Smoking-Library Cars.

JAPAN - AMERICAN LINE
STEAMSHIP KAGA MARU
For Japan, China and all Asiatic points will leave Seattle
About July 23rd

Pacific Coast Steamship Co.
For South-Eastern Alaska
Leave Seattle 9 P. M.
Steamships QUEEN, COTTAGE CITY, CITY OF TOPEKA and ALASKI, July 5, 9, 12, 14, 19, 22, 24, 29; Aug. 1, 3, 8, 13, 14, 18, 23, 25, 28.
For further information obtain company's folder. The company reserves the right to change steamers, sailing dates and hours of sailing, without previous notice.
AGENTS—N. PORTUN, 249 Washington st., Portland, Or.; F. W. CARLETON, N. P. R. R. Dock, Tacoma; Ticket Office, 618 First ave., Seattle, M. TALBOT, Comm'l Agt., C. W. MILLER, Asst. Gen'l Agt. Ocean Dock, Seattle; GOODALL, PERKINS & CO., Gen'l Agents, San Francisco.

DOMINION LINE
Record Voyage 6 Days, 7 Hours, 22 Minutes.
BOSTON to LIVERPOOL via QUEENSTOWN
Commonwealth, Twin Screw, 13,000, July 31
New England, Twin Screw, 11,600, Aug. 14
PORTLAND to LIVERPOOL via QUEENSTOWN
Vancouver....July 27 Cambroman ..Aug. 17
Dominion.....Aug. 10 Vancouver ...Aug. 31
THOMAS COOK & SON, P. C. Gen'l Agents, 621 Market St., San Francisco, Cal.

For Vladivostock and Port Arthur Direct
The Northern Pacific Steamship Co.'s
ss. "Queen Adelaide"
Will sail from Tacoma, Wash., on or about AUGUST 12 for Vladivostock and Port Arthur direct.
For freight rates and cargo space apply to
DODWELL & CO., Ltd.,
General Agents.....252 Oak Street

WHITE COLLAR LINE
STR. BAILEY GATZERT.
DALLES ROUTE.
Daily round trips. Leaves foot Alder street every morning at 7 o'clock, except Monday. Arrive at The Dalles 3 P. M. Leave The Dalles 4 P. M. Arrive Portland 10 P. M. Landings—Cascade Locks, Hood River, White Salmon, Lyle and The Dalles.
ASTORIA ROUTE.
STR. TAHOMA (Alder-street dock).
Leaves Portland daily every morning at 7 o'clock, except Sunday. Returning, leaves Astoria every night at 7 o'clock, except Sunday. Oregon phone Main 351. Columbia phone 351.

Oceanic S.S.Co. NEW TWIN SCREW 5000 TON S.S. SIERRA, SONOMA & VENTURA
SS. ZEALANDIA, for Honolulu, Saturday, July 20, 2 P. M.
SS. SIERRA, Honolulu, Auckland and Sydney, Thursday, August 1, 10 A. M.
SS. AUSTRALIA, for Tahiti—Aug. 6, 10 A. M.
J. D. SPRECKELS & BROS. CO., General Agents, 327 Market St. Gen'l Passenger Office, 643 Market St., Pier No. 7, Pacific St.

TRAVELERS' GUIDE.

O. R. & N.
OREGON SHORT LINE
AND UNION PACIFIC
THREE TRAINS DAILY FOR ALL POINTS EAST

UNION DEPOT.	Leave.	Arrive.
CHICAGO-PORTLAND SPECIAL. For the East via Huntington.	9:00 A. M. Daily.	4:30 P. M. Daily.
SPOKANE FLYER. For Eastern Washington, Walla Walla, Lewiston, Coeur d'Alene and Gt. Northern Points.	6:00 P. M. Daily.	7:00 A. M. Daily.
ATLANTIC EXPRESS For the East via Huntington.	3:00 P. M. Daily.	8:10 A. M. Daily.
OCEAN AND RIVER SCHEDULE.		
FOR SAN FRANCISCO. Str. Columbia sails July 6, 16, 26; str. Elder sails July 1, 11, 21, 31.	8:00 P. M. From Ainsworth Dock.	4:00 P. M.
FOR ASTORIA and way points, connecting with str. for Ilwaco and North Beach, str. Hassalo. Ash-St. Dock.	8:00 P. M. Daily ex. Sunday. Sat. 10 P. M.	5:00 P. M. Daily. Ex. Sun.
Str. T. J. Potter, for Astoria and Ilwaco, leaves Ash-street Dock daily except Sunday and Monday. For time of departure and arrival see a-side schedule, to be obtained from O. R. & N. agents.		
FOR SALEM and way points, str. Elmore. Ash-St. Dock.	6:45 A. M. Mon., Wed., Fri.	3:00 P. M. Tues., Thurs., Sat.
FOR DAYTON, Oregon City and Yamhill River points, str. Modoc, Ash-st. Dock.	7:00 A. M. Tues., Thurs., Sat.	3:00 P. M. Mon., Wed., Fri.

TICKET OFFICE, Third and Washington. Telephone Main 712.

PORTLAND & ASIATIC STEAMSHIP CO.
For Yokohama and Hong Kong, calling at Kobe, Nagasaki and Shanghai, taking freight via connecting steamers for Manila, Port Arthur and Vladivostock.
INDRAVELLI SAILS JULY 28.
For rates and full information call on or address officials or agents of O. R. & N. Co.

EAST VIA SOUTH
SOUTHERN PACIFIC COMPANY
SUNSET OGDEN & SHASTA ROUTES

Leave	Depot Fifth and I Streets.	Arrive
*8:30 P. M.	OVERLAND EXPRESS for Salem, Roseburg, Ashland, Sacramento, Ogden, San Francisco, Moj've, Los Angeles, El Paso, New Orleans and the East. At Woodburn (daily except Sunday), morning train connects with train for Mt. Angel, Silverton, Brownsville, Springfield and Natron; and Albany Local for Mt. Angel and Silverton.	*7:45 A. M.
*8:30 A. M.		*7:20 P. M.
*4:00 P. M	Albany passenger	*10:10 A. M.
‖7:20 A. M.	Corvallis passenger	‖5:50 P. M.
‖4:50 P. M.	Sheridan passenger	‖8:25 A. M.
8:00 A. M.	For Maygers, Hamner, Clatskanie, Westport, Clifton, Astoria, Warrenton, Flavel, Hammond, Fort Stevens, Gearhart Pk., Seaside, Astoria and Seashore Express, Daily.	11:10 A. M.
*3:55 P. M. 12:30 P. M.	Astoria Express, Daily.	9:40 P. M.

*Daily except Saturday. ‖Saturday only.
Ticket office 255 Morrison st. and Union Depot.
J. C. MAYO, Gen. Pass. Agt., Astoria, Or.

COLUMBIA RIVER SCENERY
The Dalles Route
REGULATOR LINE STEAMERS
Steamers daily, except Sunday, between PORTLAND, CASCADE LOCKS, HOOD RIVER and THE DALLES.
Leave Oak-street dock night and day at 7 A. M. and 11 P. M.
M. V. HARRISON, Agent, Portland. W. C. ALLAWAY, General Agent.

For Oregon City, Salem AND Way Landings
Steamers Altona and Pomona, for Salem and way landings, daily except Sunday, 6:45 A. M. Steamer Leona, for Oregon City, leaves week days 8:30, 11:30 A. M., 3 and 6:15 P. M.; Sundays, leaves 8, 9:30, 11 A. M., 1, 2:30, 4, 5:30, 7 P. M., Oregon City, round trips 25c. Office and dock foot Taylor st.

Northern Commercial Co.
Nome---St. Michael---Yukon River
Sailing dates approximate only.

	From San Francisco.	From Seattle.
Portland	.....	July 13
St. Paul	July 17	.....
Conemaugh	July 17	July 25

Connecting at St Michael for Dawson City and all intermediate points.
For rates of passage, freight and other particulars apply to
Empire Transportation Co.
Puget Sound Agent.
Seattle, Wash.

Astoria & Columbia River Railroad Co.

LEAVES	Depot Fifth and I Streets.	ARRIVES
8:00 A. M.	For Maygers, Hamner, Clatskanie, Westport, Clifton, Astoria, Warrenton, Flavel, Hammond, Fort Stevens, Gearhart Pk., Seaside, Astoria and Seashore Express, Daily.	11:10 A. M.
*3:55 P. M. 12:30 P. M.	Astoria Express, Daily.	9:40 P. M.

*Daily except Saturday. ‖Saturday only.
Ticket office 255 Morrison st. and Union Depot.
J. C. MAYO, Gen. Pass. Agt., Astoria, Or.