



FROM a great producer of raw materials Oregon has sprung within a few years into the ranks of great manufacturing states. She is no longer content to raise wheat and other grain and ship it to other countries to be milled. She no longer saws her timber into rough lumber to be put in finished shape in other states. Not satisfied with shipping trainloads of livestock East to be slaughtered and

- 100-Painting, house and sign.
- 5-Paints.
- 5-Paper and wood pulp.
- 10-Paper-hanging.
- 20-Paint medicines and compounds.
- 20-Paving and paving material.
- 2-Perfumery and cosmetics.
- 100-Photographers.
- 5-Pickles, preserves and sauces.
- 2-Plastering and stucco work.
- 20-Plumbing, steam and gasfitting.
- 2-Pottery and fire clay product.
- 20-Printing and publishing, book and job.
- 180-Shooting and publishing, newspapers and periodicals.
- 10-Roofing and roofing materials.
- 10-Saddlery and harness.
- 20-Ship and boatbuilding, wooden.
- 10-Shirts.

their expectations that their facilities are admittedly unequal to the task of handling the products of the state East and South. A recent statement by R. Koehler, manager of the Oregon lines of the Southern Pacific Company, shows this. He states that the number of tons loaded one mile on the Oregon lines has increased from 83,625,000 in the year 1898, to 224,115,000 in the year 1903, or 184 per cent, while the percentage of increase on the entire Southern Pacific system was but 66 per cent.

Opportunities Still Open.

Despite this enormous growth, there is unlimited room for further increase, as other articles in this edition will show in more detail. The woolen, tanning, boot and shoe, furniture, clothing industries are yet in their infancy, when their present development is compared with the opportunity for their expansion. Of other industries not discussed in detail, trucks could be made here without fear of competition, for lumber is the basis and the fittings could be brought in from the east. The factories at a great saving over the cost of shipping completed trucks. Whenever the tanners begin to tan light hides, gloves can be made in the state as well as anywhere else. The woolen industry is the home production of cloths should not grow as people live down the delusion that a cigar must be made in Havana or Key West in order to be fit to smoke. When one compares the present development of the manufacturing interests of Oregon with its possibilities, manufacturing in Oregon is but an infant—a lusty infant, it is true, but still only an infant.

wool scoured to remove the dirt and grease and thus reduce the weight on which they have to pay freight. For this purpose a scouring plant has been erected at The Dalles. The weight of Eastern Oregon wool is reduced 60 to 75 per cent and that of Western Oregon wool 40 to 50 per cent by scouring and a material saving in freight is thus effected. Eastern manufacturers have to pay about 7 per cent on the purchase price as commission to dealers and storage. They are also handicapped in doing business in the West by having to pay freight East on the raw material and West on the finished product. Very few of them do business on a large enough scale to send their own buyers West to deal directly with the grower and thus save the dealer's commission and storage. These factors mean a saving of 4 to 5 cents a pound on the uncleaned, or 10 to 12 cents a pound on the scoured wool to the Oregon manufacturer. He also has the opportunity to buy at any time of the year and in dealing direct with the grower to suggest means of bringing about an improvement in the raw product. As he is dealing with the grower, he will be able to make soap and fertilizer of the grease extracted in scouring, as is done in Germany.

Men of long practical experience in the industry declare that the climate of Oregon is the best in the world for manufacturing woolen goods. It is warm and moist, like that of the woolen manufacturing districts of England and Scotland, where nearly all the cloth used in this country until 50 years ago was made. So essential are these properties in the atmosphere to the proper manufacture and drying of wool that two Englishmen have recently invented a system of producing an artificial Oregon climate in the districts of Lancashire and Yorkshire, a system of hot water pipes. The absence of electricity in the atmosphere is a great advantage in spinning, for electricity makes the thread brittle, so that it breaks frequently. It is not necessary in Oregon, as in other sections, to use

cloth can also be scoured with much less soap than in the East, and in this respect Oregon has a great advantage over California, for in that state scouring takes twice as much soap as in Oregon.

Should Make Fine Fabrics.

Oregon woolen goods have already solved the problem of finding a market and so rapidly is the demand for them growing that, although the Portland mill was only established two years ago, it had to double its capacity within seven months after; the Union mill has increased its capacity in the year 1903, and all the Oregon mills are working full time and some of them double shift. Oregon blankets and flannels are in demand for one reason because they are more honestly made, and for another reason because of the fine quality of the wool of the four Northwestern states, all of which naturally will gravitate to Portland as its market. Hitherto the mills have confined themselves mainly to the production of the coarser fabrics, but as the home supply of labor becomes more skilled, they are branching out into the making of finer fabrics. The wool of Western Oregon is admirably suited for Scotch tweeds, chevots and blankets, while that of Eastern Oregon is of finer texture and will make the finer cloth, such as melton. The two grades can also be mixed, that of the West to give strength and that of the East fine texture. In fact, Oregon can make of her own raw material all kinds of woolen goods from the best down, including not only those mentioned, but underwear and carpets. The making of the different fabrics is only a question of different systems of handling the material and training the employees to apply these systems.

So rapidly has the demand for the coarser goods grown among the loggers, fishermen and miners of the Coast that the mills have been kept busy supplying it and they have had no opportunity to turn to the finer fabrics. The Eastern demand for Western blankets

is the scarcity and high price of skilled labor, but the extra labor cost is only 10 to 15 per cent higher in the large cities, and in the smaller towns of Oregon it is no higher, while the net saving over the East is estimated at 25 per cent. When the industry was in its infancy in this state, the local labor had to be trained by skilled men from the Eastern centers. The difficulty was increased by the fact that the people are so well paid in other lines of employment that they did not care to go to factory work. All the lines of departments in the several mills are brought from the East or from Europe and they are training up a home labor supply, so that the labor difficulty is gradually settling itself.

There is scope for the unlimited extension of the industry in Oregon and those now engaged in it recognize the fact and are ready to welcome others. The field available on the Pacific Coast alone is not nearly filled, so that newcomers would not be regarded as competitors of those already on the ground. On the contrary, there are advantages all in the extension of the industry on the Coast. One of these is the creation of an ample home supply of skilled labor. With only a small number of mills and these engaged only in what may be termed the primary branches of woolen manufacture, the only course open to a manufacturer who wishes to extend his operations into the higher branches is to send East for men. When a man employed in the branches already established leaves, the only means of filling his place is to send East for a new man.

When the Pacific Coast becomes established as a large wool-manufacturing center, it will become such an important market for woolen goods that the present conditions will be reversed and the buyer will have to seek the manufacturer instead of the manufacturer seeking the buyer. The expense of keeping salesmen in the field to find a market will then be avoided and the manufacturers will have opening days in the Spring and Fall at Portland and other trade centers, when the season's new styles of goods will be displayed and the buyers will come from all directions to make their selections and give their orders. This is the method of doing business in the Eastern centers.

Oregon Should Make Clothing.

While much of the cloth now made enters into general consumption, it is only a small percentage of the goods manufactured in the East, who ship much of it back in the shape of ready-made clothing to be sold in the Portland retail stores. There is no reason why the industry should not go a step farther in Oregon, to include the manufacture of clothing on a large scale. What economy would be made to the consumer and what increase would be made in the amount of wealth produced in the state may be seen by one illustration. A lot of Oregon woolens was sold in San Francisco, shipped thence to New York, manufactured into clothing there, again shipped in that form to Portland and sold in a retail store in this city. These suits sold for \$12 to \$17 each, of which sum only about \$3 a suit went to the manufacturer. Suits made and sold in Philadelphia for \$12 to \$15, cost \$9 and more in Portland, a large part of the difference being the freight Eastward and back. There is one factory in Portland for this purpose, but

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TOTAL PRODUCT OF STATE AND CITY, NATURAL AND MANUFACTURED.

Year.	State.	Portland.	State outside Portland.
1900	\$40,000,587	\$23,451,132	\$22,549,455
1902	50,023,000	37,725,500	23,198,500
1903	54,134,500	40,437,000	24,697,500
1903, increase over 1902.	23,017,000	11,711,500	11,500,000

The value of manufactured products for the state and city is the gross value, and not the net or true value. The finished product of one factory is often the raw material of another. In such cases the value of the former reappears again in other estimates.

dressed, she does all this herself; not only this, but she tans the hides, many of them, makes the leather into harness and saddles, boots and shoes; she spins the wool and makes it into clothing, which finds a ready market, not only at home, but all over the land. She even turns the tables by importing pig iron from abroad and the East and South, and making it into steel castings, stoves and all kinds of iron castings. She packs her surplus fruit and vegetables, and through them, is fast winning fame not only in the United States, but in Europe.

Thus Oregon is doing her part to make the Pacific Coast States industrially independent, and to make good their claim to be an empire. That is, according to the 20th century definition of an empire as a land which contains within itself all the essentials of life to comfort, produced from its own soil by the labor of its own people, aided by the accumulated capital which they have gathered in their own treasure-houses.

Statistics, dry reading in themselves, prove this. The annual report of C. H. McLean, secretary of the Portland Manufacturers' Association, states that the manufactured products of the state have grown from \$40,000,587 in the year 1900 to \$54,134,500 in 1903, an increase of \$14,133,913 in three years. That this increase is not confined to Portland, the commercial metropolis of the state, is shown by the increase from \$23,451,132 in 1900 to \$40,437,000 in 1903 in the value of manufactured products of the five cities next in rank.

What Oregon Manufactures.

There are now 450 factories of all kinds in the state, representing an invested capital of \$40,000,000, employing 3000 salaried officers and clerks, and 3,000 wage-earners, to whom is paid a total of \$13,000,000. These factories are divided as follows among the different industries:

- 8-Awnings, tents and sails.
- 4-Bags, other than paper.
- 10-Bicycle and tricycle repairing.
- 60-Blacksmithing and wheelwright.
- 10-Blackbinding and blankbookmaking.
- 10-Boots and shoes, custom work and repairing.
- 2-Bottling.
- 12-Boxes, wooden, packing.
- 10-Boxes, casing and brass finishing.
- 7-Bread and other bakery products.
- 5-Bricks and tiles.
- 5-Brooms and brushes.
- 20-Carpentering.
- 15-Carpets, rag.
- 2-Carriages and wagons.
- 2-Cars and general shop construction and repairs by railroad companies.

Manufactures of Oregon, 1903.

No. of manufacturing and mechanical industries.	450
Capital invested.	\$40,000,000
Value of land and buildings.	\$12,000,000
No. of officers and clerks.	3,000
Wage-earners employed.	3,000
Total wages paid.	\$13,000,000
Value of product of State.	\$54,134,500
Portland.	
No. of establishments.	200
Capital invested.	\$23,451,132
Wage-earners employed.	3,000
Total wages paid.	\$4,043,700
Value of product.	\$40,437,000

- 75-Cheese, butter and condensed milk factories.
- 15-Clothing, men's, custom work and repairing.
- 5-Clothing, men's factory.
- 10-Clothing, women's, dressmaking.
- 10-Clothing, women's factory.
- 1-Coffee and spice, roasting and grinding.
- 10-Confectiionery.
- 15-Cooperage.
- 20-Dyeing and cleaning.
- 5-Electrical construction and repairs.
- 5-Engraving and plate printing.
- 5-Fish canning and preserving.
- 15-Flour and grist mills.
- 5-Foundry and machine shops.
- 10-Fruit and vegetable canning.
- 10-Fruit goods.
- 10-Furniture, cabinet-making, repairing and upholstering.
- 15-Furniture factories.
- 15-Lace, artificial.
- 10-Leather, tanned, curried and finished.
- 10-Liquors, malt.
- 10-Lock and gunsmithing.
- 10-Looking-glass and picture frame.
- 60-Lumber mills.
- 10-Marble and stone works.
- 5-Masonry, brick and stone.
- 5-Mattresses and spring beds.
- 10-Millinery, custom work.
- 2-Mineral and soda water.
- 2-Monuments and tombstones.

MANUFACTURES OF WOOL.

Oregon's Progress Towards Consuming Her Own Raw Material.

WHAT the South has done in manufacturing its own raw cotton into cotton cloth, Oregon has begun to do in manufacturing its own wool. Of the wool grown in Oregon in 1903, estimated at 21,000,000 to 22,000,000 pounds, not quite 8,000,000 pounds was manufactured in the mills of Oregon into blankets, flannels and other shapes. There are nine mills in the state, all of which are working full time, and there is every promise that more will be added. The existing mills are at Portland, Oregon City, Union, Pendleton, Bandon, Salem, Albany, Eugene and Ashland. The production of woolen goods has grown from \$957,824 in 1900 to \$1,000,000 in 1903.

The same economic advantages which are transmuting the cotton industry from New England to Georgia, where the cotton is grown, are working to transplant the woolen industry to Oregon. These are the saving in the cost of raw material due to lower freight rates and buying direct from the grower; the favorable climate; the pure water; a rapidly growing home market, which is protected by Eastern competition; the 300 miles of distance; the opportunity to compete with the Eastern mills in the Eastern market; and the foreign market across the Pacific Ocean.

The bulk of the wool grown in Oregon is sold to dealers in the East, who send buyers to the Western markets for the purpose. The dealers have most of the

OUTPUT OF 16 LEADING INDUSTRIES OF OREGON IN 1903.

Timber and forest products—logs, poles, ties, cordwood, etc., hardwoods and all timber cut (not included in statistics of manufacture).	\$30,000,000
Lumber.	18,000,000
Flouring and milling.	5,000,000
Meat packing and slaughtering.	5,000,000
Brick, casing and preserving.	2,500,000
Cars and shop repairing.	2,000,000
Butter and cheese, factory product.	2,000,000
1-Product of the wool.	2,000,000
Saddlery and harness.	2,000,000
Foundry and machine shop product.	1,700,000
Patent medicines and compounds.	1,500,000
Furniture, cabinet making and upholstering.	1,500,000
Malt liquors.	1,500,000
Ships and boat building.	1,200,000
Crackers and bread product.	1,000,000

Panama or lard oil as a lubricant for the flume in this process.

The water of Oregon is pronounced the best for the purpose. It is free from lime and magnesia and lime salts, which are the worst drawbacks to spinning and weaving woolens. The water of Western Oregon has been analyzed by Eastern chemists and they say that with it they can save at least 5 per cent in the amount of dyestuffs used. Wool and

has somewhat fallen off, largely in consequence to delays in shipment, which in some instances have caused orders to be canceled in transit. The cloth for men's clothing, so far as it is made in this state, is shipped east to the great manufacturing centers, by whom the manufactured goods are sent back West.

To set against the advantages enumerated, the only important disadvan-

GREAT OUTPUT OF FACTORIES IN THE YEAR 1903

OREGON MANUFACTURES BY SPECIFIED INDUSTRIES

1900.	1903.	1900.	1903.
Awnings, tents and sails.	71,708	Lumber, planing mill products, including sash, doors	\$ 651,547
Bags, other than paper.	323,300	Marble and stone work.	39,940
Bicycle and tricycle repairing.	133,582	Masonry, brick and stone.	1,028,857
Blacksmithing and wheelwrighting.	724,538	Mattresses and spring beds.	2,500,000
Blackbinding and blankbookmaking.	60,923	Meat packing and slaughtering.	5,000,000
Boots and shoes.	124,541	Millinery, custom work.	399,149
Buttling.	8,000	Mineral and soda water.	200,000
Boxes, wooden, packing.	172,070	Monuments and tombstones.	123,679
Brass casting and brass finishing.	27,685	Painting, house, sign, etc.	474,658
Bricks and tiles.	227,141	Patent medicines and compounds.	151,517
Brooms and brushes.	46,934	Paper and wood pulp.	1,305,096
Carriage and wagon body construction.	128,425	Paper hanging.	368,748
Steam railway companies and street-car companies.	1,024,169	Paving and paving materials.	154,593
Butter and cheese, factory products.	630,222	Perfumery and cosmetics.	38,992
Clothing, men's custom work and repairing.	678,809	Pickles, preserves and sauces.	65,800
Clothing, men's factory product.	165,204	Plastering and stucco work.	31,527
Clothing, women's dressmaking.	317,818	Plumbing, steam and gas fitting.	37,718
Coffee and spice roasting and grinding.	67,947	Pottery, terra cotta and fire clay products.	96,837
Coffee work.	349,548	Printing and publishing, newspapers and periodicals.	1,073,337
Cooperage.	72,043	Roofing and roofing material.	114,800
Dyeing and cleaning.	30,180	Saddlery and harness.	2,000,000
Engraving, steel, including plate printing.	11,038	Ships and boat building, wooden.	1,200,000
Fish canning and preserving.	1,788,589	Shirts.	43,000
Flouring and milling.	6,984,023	Shoes, custom work and repairing.	1,358,490
Furniture, cabinet making, repairing and upholstering.	818,200	Soap and candles.	127,812
Gas illuminating and heating.	141,485	Tinsmithing, copper-smithing and sheet iron working.	746,352
Ice, artificial.	116,031	Tools, not elsewhere specified.	17,440
Leather, tanned, curried and finished.	174,212	Trunks and valises.	17,900
Liquors, malt.	36,225	Upholstering material.	28,919
Lumber, planing mill products, including sash, doors	10,322,107	Umbrellas and canes.	200,000
Marble and stone work.	39,940	Wagon and carriage bodies.	1,000,000
Masonry, brick and stone.	1,028,857	Wool, turned and carved.	38,005
Mattresses and spring beds.	2,500,000	Woolen goods.	1,000,000
Meat packing and slaughtering.	5,000,000	All other industries.	3,926,155
Millinery, custom work.	399,149		
Mineral and soda water.	200,000		
Monuments and tombstones.	123,679		
Painting, house, sign, etc.	474,658		
		Totals.	\$40,000,587

MANUFACTURES IN PORTLAND BY SPECIFIED INDUSTRIES

1900.	1903.	1900.	1903.
Awnings, tents and sails.	71,708	Paints.	141,559
Bags, other than paper.	323,300	Paper hanging.	368,748
Bicycle and tricycle repairing.	133,582	Patent medicines and compounds.	151,517
Blacksmithing and wheelwrighting.	724,538	Photography.	110,232
Blackbinding and blankbookmaking.	60,923	Pickles, preserves and sauces.	65,800
Boots and shoes.	124,541	Plastering and stucco work.	31,527
Buttling.	8,000	Plumbing, steam and gas fitting.	37,718
Boxes, wooden, packing.	172,070	Pottery, terra cotta and fire clay products.	96,837
Brass casting and brass finishing.	27,685	Printing and publishing, newspapers and periodicals.	1,073,337
Bricks and tiles.	227,141	Roofing and roofing material.	114,800
Brooms and brushes.	46,934	Saddlery and harness.	2,000,000
Carriage and wagon body construction.	128,425	Ships and boat building, wooden.	1,200,000
Steam railway companies and street-car companies.	1,024,169	Shirts.	43,000
Butter and cheese, factory products.	630,222	Shoes, custom work and repairing.	1,358,490
Clothing, men's custom work and repairing.	678,809	Soap and candles.	127,812
Clothing, men's factory product.	165,204	Tinsmithing, copper-smithing and sheet iron working.	746,352
Clothing, women's dressmaking.	317,818	Tools, not elsewhere specified.	17,440
Coffee and spice roasting and grinding.	67,947	Trunks and valises.	17,900
Coffee work.	349,548	Upholstering material.	28,919
Cooperage.	72,043	Umbrellas and canes.	200,000
Dyeing and cleaning.	30,180	Wagon and carriage bodies.	1,000,000
Engraving, steel, including plate printing.	11,038	Wool, turned and carved.	38,005
Fish canning and preserving.	1,788,589	Woolen goods.	1,000,000
Flouring and milling.	6,984,023	All other industries.	3,926,155
Furniture, cabinet making, repairing and upholstering.	818,200		
Gas illuminating and heating.	141,485		
Ice, artificial.	116,031		
Leather, tanned, curried and finished.	174,212		
Liquors, malt.	36,225		
Lumber, planing mill products, including sash, doors	10,322,107		
Marble and stone work.	39,940		
Masonry, brick and stone.	1,028,857		
Mattresses and spring beds.	2,500,000		
Meat packing and slaughtering.	5,000,000		
Millinery, custom work.	399,149		
Mineral and soda water.	200,000		
Monuments and tombstones.	123,679		
Painting, house, sign, etc.	474,658		

PACKING OF MEAT.

Increase in Output Only a Hint at the Possibilities.

GREAT progress has been made by Oregon in the slaughter and packing of the meat grown on her own ranges within her own borders. Time was when every animal fattened on the ranges of Eastern Oregon was loaded on the railroad and hauled to Chicago or some of the Missouri River packing centers to be slaughtered and put in shape for the consumer. The stream of cattle shipments has been turned Westward to the Pacific Coast. To what extent this has taken place is shown by the increase in the output of Oregon packing houses from 1900 to 1903. The value of the product in 1900 is given by the United States Census Bureau as \$1,538,680, while the figures given in the annual report of C. H. McLean, secretary of the Manufacturers' Association, for 1903, are \$3,000,000. In other words, the product has more than doubled in three years. The number of animals slaughtered for food at the wholesale packing houses in Oregon in 1903 was from 20,000 to 25,000 cattle, about 75,000 sheep and about 100,000 hogs. This is exclusive of the large number of animals killed by local butchers and farmers, of which no returns are obtainable.

Meat slaughtered and packed in Oregon is sold all through the Pacific states as far east as Idaho, and some of it goes across the Pacific to Honolulu and foreign countries. The largest industry of this class is at Troutdale, where the payroll amounts to \$90,000 a month. A new packing house for hogs exclusively has been established in Portland and a third doing a general business has been long in existence in South Portland.

Success in Packing Hogs.

The new venture in packing hogs has proved highly successful, for the people of the Northwest appreciate the superiority of the wheat-fed hogs of the Willamette Valley over the corn-fed hogs of the interior and they buy the Portland product readily. The market extends to Alaska, but not much is sold there, because Oregon, Washington and Idaho consume almost the entire output of the plant. The raising of hogs has been found highly profitable by the farmers of the Willamette Valley, for the price is 1/4 to 1/2 cent a pound higher in Portland than in Chicago. Almost all farmers raise a small number, kill them at home and sell the meat to the Portland butchers, but the larger herds are sold at the packing houses. Hog-raising is a business which will bear great extension, for the Coast market is not fully covered and is fast expanding with the growth of population, and there is much more business to be had in Alaska, Hawaii and the Orient, where the Coast can compete with the