

commerce will never be realized. Nothing is more certain, however, than that there will soon be some radical changes in the routes of Pacific commerce.

WHETHER it is that "The wish is father to the thought," or because their mental vision is bounded by the narrow horizon of local prejudice and self-interest, or whatever other cause may, in charity, be assigned to it, the fact remains undeniable that it is impossible for the citizens of one section of the West to recognize the palpable advantages and future prospects of a rival, or to admit the existence of facts and conditions which seem clear and indisputable to a stranger who has no local interest to warp his judgment. Daily we hear the remark made that when certain events happen they will "lay out" this or that place "cold." The party making these assertions is certain those events will happen, for no better reason than that he desires them, and that they will have the predicted effect because his supposed interests lead him to feel antagonistic to the place doomed in his imagination to be blotted out. On the contrary, through the same process of reasoning, a citizen of the place referred to is equally positive no such events will occur, or, if they do, will not have the disastrous effects ascribed to them. He even goes further and sees in his mind another train of events that will bring inevitable ruin to the home of the individual first spoken of. To one not influenced by local pride or personal interest it is plainly apparent that both parties are deceiving themselves. Whoever believes that the completion of the Cascades branch, the opening of the Upper Columbia River, the construction of a line across the mountains from Yaquina Bay, or any or all of a dozen mooted projects, will be a death-blow to Portland; that the lease of the O. R. & N. Co. will prevent the completion of the Cascades branch; that a failure to build that branch will be a mortal stroke to Tacoma; that its completion to Tacoma will kill Seattle, or will prevent any other road from seeking a Puget Sound outlet; or that by the happening of any of a number of possible events their town will be placed in the lead in the race for metropolitan honors and their rivals "squeezed," is a sadly mistaken individual. His judgment is warped by prejudice; he is reasoning from false premises to a wrong conclusion; he has not given the subject dispassionate investigation; he has not sufficiently informed himself of the great resources of this region, nor of the commercial history of older communities. If he had he would know that each section has its elements of strength; that none are dependent solely upon the happening of any future event or series of events; that all are established and will grow as the country becomes better developed, and that in no case will either the lugubrious predictions of the croaker nor the rose-tinted visions of the enthusiast be realized. We are all here to stay, to grow and thrive, and it would be more seemly, as well as of more profit to us all, to view this subject in the light of common sense, friendliness and that community of interest which, whether we realize it or not, our position gives us.

SCIENCE APPLIED TO AGRICULTURE.

AGRICULTURE involves all physical science. Earth, air, light, heat and moisture are ever factors in vegetable germination and growth. Natural laws direct and control the operations of the husbandman, however ignorant, and his practice, if wise and judicious, is an unconscious formula of the results of science applied to agriculture. Thus we find in every rural community, however primitive and unlettered, peculiar methods and traditional practices, which are crystalized common sense and unwritten science.

Statistical research shows that a crude agriculture is not abundant in product, that it is deficient in working capital, and that it is compelled to pay high interest on borrowed money. A low grade of farming is cursed with mortgages and mildews, with insects and ignorance. Uncertainty broods over its harvests and famine decimates its people. Famine is unknown in a country of advanced agriculture, though a fourth of its people only may be engaged in rural production. On the contrary, millions famish in India, while most of its people are in agriculture. It is said that in 1270, in England, "parents ate their children when wheat rose to 336 shillings a quarter at the present value of money." Five hundred years ago, when nearly every Englishman lived by agriculture, the product only sufficed for a home supply; now, with a population of 446 to the square mile, of which only one in eight is an agricultural worker, six-tenths of all the food required for consumption is produced at home, though half the island is occupied for residences, pleasure grounds and hunting preserves.

The Latin races of Southern Europe, slower than the Anglo-Saxon in utilizing in rural practice the discoveries of modern science, are still making sure progress toward a higher and more profitable agriculture. In Italy lands are more productive, buildings more numerous and convenient, and the peasant is better paid and better lodged and clothed. An official commission has recognized the improvement as a measure of progress in scientific agriculture, and made the future prosperity of Italy dependent upon schools and scientific experiment.

Spain is mainly agricultural, yet its entire value of rural production could be purchased with the value of the corn crop of the United States. It is because the yield is small and the price low. Russia, with labor employed principally in agriculture, yields but nineteen bushels of cereals per head, while Great Britain, with seven-eighths of her people employed outside of agriculture, last year produced ten bushels of cereals for every inhabitant of the country. In Great Britain the yield per acre of wheat is twenty-eight bushels; in Russia scarcely more than a third as much. This high yield has been attained by science applied to agriculture. A single individual has given his fortune to experimental agriculture, and endowed his farm with the income from \$500,000.

In seasons unfavorable to production the money value of skill and science in agriculture is immensely enhanced. It is often remarked that farmers receive as much for a very small crop as for a very large one. In