

The Future Production of Wheat

By W. W. SWANSON, Ph. D.

Wheat is Almost Worldwide in the Extent of its Culture. This Universality in Production has Resulted in Minimising Fluctuations both in Output and Price

The remarkable situation in the wheat markets which has obtained since the outbreak of war has focussed attention once more on this kind of cereals. Notwithstanding the advice, which has been so freely and gratuitously distributed to our Western farmers, to adopt mixed farming, it yet remains true that for years to come the prosperity of the Prairie Provinces will depend mainly upon the production of wheat. The present phenomenal prices for this food product mean prosperity not only for the West, but for the whole of Canada; and this notwithstanding the fact that the acreage has been materially reduced this year. It is admitted, however, that the present situation is quite abnormal, and cannot, therefore, last. It will be well, then, to investigate briefly what the probable conditions will be in the future in connection with the marketing of this most important of food products for the Western civilized world.

In the first place, it may be noted that wheat, unlike most other farm products, is almost world-wide in the extent of its culture. It may be said that the only modification of this statement that need be considered is that wheat has never been successfully grown in the Tropics; and in some of the sub-tropical regions only on the high, cool tablelands. This universality in production has resulted in minimising fluctuations, both in the output and the price of this commodity; and gives us a situation which is unique in the agricultural world—conditions which will not be found, for example, in connection with such staple crops as corn and cotton. On the whole the demand for wheat is increasing, since its output has not quite kept up with the growth of population. More persons in more countries are eating wheaten bread than in any other period of the world's history. In view of that fact it is fortunate that this crop is produced in so many countries in so many zones, and under such diverse climatic conditions. It follows that droughts in some countries are offset by average, or even excessive, rainfall in others; and scientific methods have been adopted, wherever abnormal climatic conditions obtain, to offset them. Thus, wheat growing has become a speciality in some countries; and many scientific investigators, in recent years, have devoted all their energy and attention to adapting this cereal to different environments. On this Continent wheat is produced all the way from Texas well up to the Arctic regions in Northern Canada, and across a belt which runs roughly from the Mississippi Valley to the foothills of the Rocky Mountains. In Europe wheat is grown with success in France, Austria-Hungary, Northern Italy and Russia. Moreover, huge supplies are secured in North and Northwestern British India, and in the central and northern regions of the Argentine Republic, as well as in Southeastern Australia. It will thus be seen that climatic conditions offset one another as far as the world's output of this crop is concerned; and consequently and as a rule the average production does not vary much, from year to year.

Climatic conditions, however, are most important in the successful cultivation of this cereal. For example, winter wheat is most successfully cultivated in the Southern United States, being sown in the Fall and harvested in the early Summer; while in the Northern tier of States and in Canada, Spring wheat yields the best results. It will be observed that, because of these varied climatic conditions, it is possible to offset a poor crop under one set of conditions by a good crop under another. Then, again, on the whole it will be found that the Eastern United States have a humid atmosphere, while the Western States are dry, some of them arid in parts, or semi-arid. Similar conditions exist in the great European wheat belt. Russia is almost a continent in itself, containing every variety of climate from the sub-tropical to the semi-arid; while Northern Italy is almost altogether sub-tropical in nature. India, while one of the most prolific producers of wheat, is subject more than any other wheat producing country to the vagaries of climatic conditions. The wheat belt is arid for the greater part of the year; and the marvellous fertility of this soil, especially in the Ganges Valley, would be rendered unavailable were it not for the Monsoon rains. These rains turn a dry, baked and burned country into a land that blossoms and blooms in a few short weeks under the fertilising Monsoon rains, until it becomes a veritable Garden of Eden. Nevertheless, the Mon-

soon rains are irregular and not entirely constant from year to year; and when they fail India suffers terribly from famine.

The Temperate Zone, on the whole, yields the best results in wheat culture. In such lands in the United States, Canada, the Argentine and Russia, the farmers specialise in the production of wheat; and through this crop are able to carry on the arduous work of the agricultural pioneer. The reason therefor is not far to seek. On the whole little labor is required; and the cultivation of the crop lends itself splendidly to the use of machinery, so that from the time the seed is planted until the wheat reaches the consumer in the form of bread, the whole process may be carried on by the use of machines all the way. In connection with this it is interesting to note that by far the greater part of the world's wheat crop is grown upon new or semi-arid lands.

Wheat culture on the Prairies of Canada, the United States and the Steppes of European and Asiatic Russia is conducted on an extensive scale; while in the United Kingdom, France, Germany, Eastern Canada and in the Eastern United States intensive methods are, for the most part, followed. Everyone knows that where intensive methods are followed, the average yield per acre is twice as great as when extensive methods are followed. Nevertheless, it does not follow that intensive methods are the best for our Western farmers. On the contrary, if such a practice were followed it is probable that wheat farming would be carried on in the Prairie Provinces at a loss. In Europe and in the Eastern parts of America intensive methods of cultivation are followed because of the higher value of the land, the small scale of the farming enterprise, and the higher returns on other crops. At the same time it is obvious that intensive cultivation of wheat may quite often really represent a dying industry, for the country following that practice; for it means that the cost of production is so high that the utmost that the land can possibly yield is demanded, and exacted from it. On our Prairie lands, and in the Western United States, other and more successful means for increasing the output are being adopted. Scientific investigation, for instance, is doing much to increase the yield of wheat in the frontier American States. Drought-resisting wheat has been developed for use in the semi-arid regions of what was once called the great American Desert. Hundreds of miles of these fertile lands are now cultivated by means of proper seed selection, new methods of tillage and other expedients which do not increase the labor cost, but which make it possible to bring in new land and cultivate it on an extensive scale.

One of the reasons why, on the whole, wheat prices have fluctuated so little in the past, taking a long-time view of the situation, is that this grain may be readily transported, handled mechanically and economically distributed. As we have said, wheat is a world commodity, in the supply of which no one country is dominant. Each month of the year sees an important crop harvested; although the supplies are lighter in October and November than in the other months of the year, particularly than in January to September. Because there is this steady and constant supply from all quarters of the world, the price may be fixed under more or less definite conditions at the great wheat exchanges; and this price cannot fluctuate much from place to place, except as it may be modified by the cost of shipment, the cost of freight and insurance and so forth.

Since the European war broke out, and especially in the last month or two, there has been a great outcry against speculators in the wheat markets of this Continent. It cannot be denied that these speculators at times can be justly charged with increasing the price of bread to the poor; but on the whole their work is an important and an economically productive one. Very few dealers have ever had success in cornering wheat supplies, Joseph Leiter being the last speculator who discovered the futility of such an attempt. The wheat exchanges benefit all parties concerned—the farmer, the grain dealer and the consumer. This is due to the fact that wheat lends itself readily to being graded into standard qualities, to being handled by dealers who work in competition with one another and, as has been said, to being transported from place to place. The result is that prices cannot fluctuate much from place to place in

the same country, and scarcely more so between Europe and America. As prices are known and definitely fixed from day to day and month to month, farmers can the more readily dispose of their supplies, other things being equal, at a period when the best prices obtain. Grain dealers and millers may, through the speculative market, protect themselves from fluctuations in the price of wheat by "hedging". The milling of wheat thus becomes a standardised industry in which manufacturers' profits alone are sought, and the speculative element abolished. The attention of the miller, then, need not be centred upon the speculative side of the business, that being left to a professional group of buyers and sellers; who from a study of world-wide conditions are able to fix prices with reference to the probable supply and demand. The same holds true of grain dealers, who can also by "hedging" eliminate speculation, and carry on their business on a small commission. There is, therefore, or at least there need not be, any considerable margin between what the farmer gets and what the consumer pays. This is not true of most other farm crops. Speculators are able to calculate prices with considerable success because of the great mass of information, concerning the state of the world's crops, that is available for them. In normal times wheat prices rise steadily until April or May; but this rise in price is accounted for mostly by the cost of storage, the cost of insurance and the cost of handling the wheat. In days gone by, before speculative markets were organized, wheat prices fluctuated far more violently than at the present time.

What of future conditions in the production of this staple cereal? In the first place, it should be observed that the demand for wheat is what the economists call an "inelastic" demand—that is to say, the demand is steady throughout the year, and does not depend upon the supply to any considerable extent. When the world's output is small, consumers who use this grain demand just as much as before; with the result that wheat prices may, under these conditions, fluctuate violently. Now with the outbreak of war, while there was probably as much wheat produced in 1914 as in the preceding year, a great part of the supply became unavailable for the consuming market. The countries at war produce at, or near the line of battle, 37 per cent. of the world's wheat crop; while, on the other hand, they consume 45 per cent. of the world's production. It will thus be seen that there is a considerable gap between the production and consumption of wheat, in Europe; and this gap cannot be closed until peace has been again proclaimed. As far as future supplies are concerned it is obvious that the available areas for wheat production are still very large, especially so when it is recalled how greatly scientific expedients have increased the output per acre in recent years. The semi-arid lands of America, through seed selection and irrigation have become wonderfully productive; and there are still available great areas in Canada, Siberia, Australia, Africa, and the Argentine, which have as yet not been touched. Let it not be forgotten, however, that population in wheat consuming countries is also increasing at a rapid rate. Some pessimists in Canada have emphasized the fact that our Prairie Provinces are making a mistake in depending so largely upon this one crop, in view of the fact that other countries will enter the field in the no distant future as competitors for supplying the markets of Europe. Leaving aside, for present purposes, the question of mixed farming, it may be said with assurance that for many years to come the world will be able to take all of Canada's surplus wheat production. While in the 19th century the available wheat lands were enormously multiplied, nevertheless there was just as spectacular an increase in the numbers of the wheat consuming peoples. The population of Europe, for example, increased from about 100,000,000 in 1800 to 425,000,000 in 1900; while on this Continent a population of under 10,000,000 has increased to one of over 110,000,000. The United States, indeed, will shortly, as James J. Hill pointed out, need all of its own wheat output for the domestic market; and Canada in that event, will have one less competitor. It is inevitable, also, that within a few years at the most the American market will become a free market for the wheat of our Prairie Provinces. The conclusion to be drawn, therefore, is that not in our gold, or silver, or precious metals, but rather in our much more valuable agricultural output, is the real wealth of this country to be found. That being true, all obstacles that have been placed in the way of Western farmers in particular, and the farmers of Canada in general, should be removed. They ask no more than that others should stand out of their sunlight.