

crop, assuming a per capita consumption equal, say, to that of Canada, and regarding any surplus above this as exportable. That is unsafe reasoning, and it would be necessary to have very full information on all agricultural production in Russia, and on actual present dietetic standards, to be able to use this method of ascertaining probable exports.

Visible Supply and "Carry-over"

We have already noted the impossibility of obtaining full and accurate statistics of production and consumption. It may be well to point out the lack of information as to existing world stocks at any moment. Much attention has been given recently to figures showing a tendency to an increase in world visible supplies of wheat, and in the "carry-over" at the end of the crop year. Mr. Broomhall furnishes the following table of figures showing world visible supply of wheat as at January 1st in recent years: (thousands of bushels, including flour reduced to equivalent quantities of wheat):

1921	217,049	1925	308,790	1929	490,670
1922	238,393	1926	280,380	1930	539,530
1923	285,488	1927	297,610	1931	523,240
1924	319,800	1928	359,000		

Much attention has been concentrated on the great increase in these figures in recent years. Mr. Broomhall heads his tabulation "An account of the visible Supply of Wheat and Flour in second hands in the U.S.A. and Canada, in the chief ports of the U.K., on the ocean, and in Argentina." This means that figures of world visible supply—which in some cases include stocks in Australia and in some European ports—are necessarily very incomplete as a means of taking stock of the true position of the international wheat market at any time. They do not include, to take one item, stocks of wheat in farmers' hands. In the case of Canada, the United States, Argentina and Australia, this is not very important, as crop statistics for those countries are generally of fair accuracy, and domestic consumption fairly constant. In the case of Europe, however, the domestic crop—which amounts, omitting Russia, to nearly 1,500 million bushels—is not handled as is the crop of the great exporting countries. Wheat in Europe may lie for a year or more in stacks before it is threshed; after threshing it may be stored in the farmer's granary for a long time before sale; after sale it will not be in a "country elevator", or at a great terminal point, but in the storage bins of some small grain merchant, or of a small grist mill. In consequence it is impossible to say with any approach to exactitude how much of this great part of the world's crop of wheat has been consumed, and how much remains. Yet the wheat stocks of Europe will define the demand for wheat from the great exporting countries just as the stocks in those countries will define the available supply. In the circumstances it is impossible to regard alterations in the world visible supply as final evidence of any alteration in the relation of supply to demand. To take a case, world visible supply was near record heights in the summer of 1931, but at the same time observers, from necessarily partial and incomplete investigation, reported domestic stocks in some important European countries at a record low level before the new crop was harvested. As far as these observations were correct, they tended to impair the conclusion arrived at from consideration of the world visible supply figures. The figures of the "carry-over" in chief exporting countries are equally dubious in value as a means of determining world trends. Major H. G. L. Strange, of the Searle Grain Company, Winnipeg, has

published a very interesting compilation of "carry-over" at the end of various crop years in the chief exporting countries, which we copy:

Estimates of carry-overs.

(On hand by exporting countries in millions of bushels.)

Year	A	B	C	D
1925	277	139	—	84
1926	279	146	—	135
1927	340	181	251	150
1928	433	227	309	185
1929	616	370	536	322
1930	589	411	468	331
1931	659	462	546	413
1932	475	—	360	—

A—U.S.A. Bureau of Agricultural Economics: July 1.

B—Broomhall: August 1.

C—International Institute, Rome: August 1.

D—Bradstreet's: August 15.

The variations between the figures of the different authorities result chiefly from the variation between the dates of the various annual stock-takings.

It is impossible to deduce from these figures any positive conclusion that the world's "carry-over" of wheat was altering in this way, for we are entirely without statistical evidence as to the "carry-over" in Europe at the same dates. There has unquestionably been a visible trend in the direction of increase of stocks of wheat in exporting countries in recent years, but we have not the data to permit us to decide if this has represented a tendency to the accumulation of a surplus, or merely an increase in the "carry-over" of the exporting countries with a concomitant decrease in the "carry-over" in Europe. This fact should be borne in mind in all attempts to decide the trend of world wheat production and consumption.

Effect of Climatic Factor on Production

Before any attempt is made to express opinions on world wheat production and consumption trends, careful study should be made of the effect of climatic conditions on world production. Wheat is grown in all parts of the world, and under a great variety of climatic conditions. The world yield is therefore less affected by climatic variations than the yield of any one country or area, but it still varies very greatly. The following figures (necessarily estimates, but of considerable validity) will illustrate this:

Crop years	Average world yield per acre
Av. 1909/10 to 1913/14	14.88 bushels
" 1921/22 " 1925/26	14.63 "
1928/29	16.15 "
1929/30	14.17 "
1930/31	15.10 "

World yield per acre will vary, from the climatic factor alone, by as much as two bushels per acre as between two successive years. This variation, applied to a world acreage of perhaps 300 million, would alter total world production 600 million bushels. In individual countries the fluctuation is even more marked of course. In Canada, for example, average yield per acre has varied as follows in a decade:

Year	Yield per acre in bushels
1921	13.0
1922	17.8
1923	21.7
1924	11.9