sense of conviction as to the success of his work, that the properties of his material were identical with those published by Brunel. He was satisfied and so was I.

During the war Brunel interrupted his work to take up certain investigations on war gases suggested by the authorities in Washington. He studied with his customary care certain gases which were used to induce a copious flow of tears. Such gases served an important purpose in interfering with the preparations which are necessary before an attack is made. Lines of communication are shelled and, as a result, all work must be done by soldiers who are protected by masks. These cut down markedly efficiency and, consequently, slow up military operations. I had the pleasure of communicating to English chemists, who were working on the same substances, the results obtained by Brunel. As a result their efforts were turned to other problems.

JAMES F. NORRIS

SCIENTIFIC EVENTS

WORLD WHEAT PRODUCTION[1]

DURING the past ten years it has been realized that all the countries in the world have a common bond in the international trade in wheat. Various adjustments in relationships have perforce been necessary, but the six years which have elapsed since the war have given wheat-growing countries time to stabilize their positions and in some degree to accommodate themselves, on one hand, to the cessation of export from Russia, and, on the other hand, to the discontinuance of the artificially enhanced production prevalent during the war years. For this reason the agricultural statistics for 1923 published by the International Institute of Agriculture at Rome, with their comparisons with pre-war years, are of special interest, since they do at this stage indicate the trend which agriculture in general and wheat production in particular is taking throughout the world.

The situation as revealed by the year-book is, on the whole, reassuring. Except in Europe, both area and production in wheat show an increase over the corresponding figures for the period 1909–1913. In North America the increases in area and production are approximately 40 per cent. The year 1923 was admittedly a favorable one for wheat growing, but an examination of the annual returns shows that this increase is not an isolated instance. Europe is still 7.3 per cent. below its pre-war average in production of wheat, and 9.5 per cent. below its average area in that crop over the same period; but the area has increased steadily since 1920, and the production, notwithstanding fluctuations, has never fallen lower than it was then.

Russia is omitted from these returns, but the decrease in wheat production in that country during 1922, when famine conditions were at their worst, is now authoritatively stated as fifty-five and a half million quarters, or 65 per cent. of the pre-war average. In 1923 Russia had a small export trade. It will be remembered that, before the war, Russia was one of the chief sources of the world's wheat supply.

A good deal of attention has recently been directed towards the wheat production and crop balance-sheets of Canada and the United States. No appreciable decrease in area under cultivation in either country is recorded in the data published, but wheat production in both is less in 1923 than in 1922. Almost the whole of this loss can be apportioned to the United States, where increases in the more important crops of cotton and maize more than counterbalance it. Four million acres went out of wheat in 1923 and 5.4 million were added to the maize and cotton crops. Further, the excess of exports over imports of wheat has fallen from 32 million quarters in 1921 to 9.6 millions in 1923. Taken together, these figures would seem to afford a striking confirmation of the forecast made by the Bureau of Agricultural Economics in the U. S. Department of Agriculture Year-book for 1921. In a paper on "Wheat Production and Marketing," O. E. Baker says, "Wheat production, however, has been increasing less rapidly than population in this country, and it is very probable that this will continue to be true, at least until we reach the point where we consume practically all we produce." Such a state of affairs is obviously of very serious import.

The International Year-book has grown during its brief career, and this issue gives many more details than its predecessors. It is to be regretted that in so doing it has been thought necessary to discontinue some of the summary tables. That relating to the percentage of each crop, based on total area under cultivation in each country, is a noticeable omission. The book contains sections dealing with crops, live stock, trade returns, prices, freight charges, fertilizer consumption and rates of exchange, and will repay perusal not only by the agriculturist and economist but also by the interested layman.

THE TRANSMUTATION OF MERCURY

THE department of chemistry of the University of Chicago has authorized publication of the following statement:

Recent reports in the press indicate that Miethe, in

[1] From *Nature*.