

have already taken place amount to a positive revolution. There is scarcely an industry in the country which has not come out of the ordeal of the war without being stimulated by the special difficulties which had to be surmounted. As has been stated, the history of the war in Great Britain has been a history of grave and threatening difficulties courageously faced and successfully overcome.

When the war broke out the manufacture of optical and chemical glass in France and England was practically insignificant. The steel industry was paralysed at first by the lack of chemical glass for testing purposes, and the porcelain and pottery industries were brought to a standstill through the supply from Germany being cut off of Seger cones used as guides to firing. To-day they have industries which supply all their needs. The compositions of chemical glasses have been ascertained. Methods of manufacture have been devised and have been put into operation, and through the efforts of Dr. Mellor, recently deceased, the composition of Seger cones has been successfully worked out. The manufacturers of porcelain have pooled their knowledge, combinations have been effected and research laboratories have been instituted and manned to help them through the co-operation of the Industrial Research Commission, and with the aid of the financial support of the Government.

I may perhaps be permitted to refer to another phase of the work of the British Commission on Industrial and Scientific Research. In their report which has just been issued they lay emphasis on what are "key" or master industries. Such, they point out, are the magneto industry, and the manufacture of lathes and milling machines, optical glass, porcelain, fine chemicals, dye stuffs, synthetic drugs and high explosives. For such articles the market is a limited one but the articles themselves are vital for numerous other industries. For the development of such industries the Commission takes the view that State support is absolutely necessary, and steps have already been taken by that body to place a number of these industries upon a satisfactory basis. Through the action of the Commission* the University of Leeds has made arrangements whereby the organisation known as "British Dyes" may receive substantial assistance in the matter of scientific research and at the same time special facilities are to be given to private firms and others in the national interest. In dealing with the textile industry, support has also been given for the investigation of the nature and constitution of cellulose fibres at the School of Technology at Manchester. The Commission is also supporting an investigation of the de-gumming of silk at the Imperial Institute of Science in London. At the Royal Technical College, Glasgow, and at the University of Manchester it is carrying on researches on the design of steam nozzles for turbines.

*See Appendix III.