BOOK REVIEWS

Growth of an Industry

The Chemical Industry 1900-1930: International Growth and Technological Change. By L. F. Haber. Pp. x+452. (Clarendon: Oxford; Oxford University: London, February 1971.) £6.00.

MR HABER is well known for his work on the nineteenth-century chemical industry and the present volume continues the history of the industry down to 1930. It provides a valuable addition to the literature on the subject and usefully complements the recent study of ICI made by W. J. Reader. It is well written, extensively researched and largely free from complex technical jargon. But one gets the impression that the author has perhaps been a little too ambitious in trying to write what is virtually a history of the world chemical industry. As a result the book does not really fulfil its purpose and consequently it suffers from certain defects.

In the introduction, Haber sets for two chief objectives: these are to explain the more rapid and sustained growth of chemicals compared with that of other industries, and to apply economic concepts to that development. But in neither case does he really succeed. The second aim is not very explicitly formulated but, in any case, apart from a rather belated reference to Rostow's "Stages Theory" in chapter 11 (which is not a very apt choice anyway), he scarcely acknowledges the existence of theoretical or economic concepts, let alone links these to the growth and transformation of the chemical industry. Nor do the chief determinants of growth come across very clearly, for no formal model of the growth and structural transformation of industry is ever formulated. Thus he places considerable emphasis on government stimulation of chemicals, especially dyestuffs, during the First World War, and on the role of research in developing new products. There are in fact two whole chapters on research in industry and the universities, and though in each case there is an impressive amount of detail, not a great deal is done to illustrate just how this fostered the growth of the industry. When we come to the

question of technology, it is even less apparent how this influenced the industry's performance, for we are told that for much of the period supply consisted predominantly of traditional lines, notably alkalis, acids, dyestuffs and fertilizers. Demand factors are very inadequately treated. But the real problem is not the absence of growth determinants but the failure to analyse them carefully enough in relation to each other.

It might have been more fruitful if Haber had confined his investigations to the chief chemical producers, namely the US, Germany, Britain and France. After all, these countries accounted for some 75 per cent of world chemical output both before and after the war, and most of the other countries he covers only accounted for quite minute amounts. By including a wide range of small producers in his survey he merely adds to his task without giving more than a potted summary of the developments in these countries. Had the latter been excluded it might have been possible to devote more time to analysing in greater depth the main issues faced in the chief producing nations.

The result, I feel, of this attempt at wide geographical coverage is that some of the important issues are inadequately explored. For example, the important field of explosives is almost wholly ignored. To be fair, the author does acknowledge this omission at the start though he never defines very precisely just what he intends to cover in the volume. Second, though considerable information is given about cartels, agreements and mergers, very little attempt is made to estimate their impact. Third, the statistical basis of the book is rather weak. On numerous occasions Haber stresses the fact that good statistical data are hard to come by and this we can accept, though one cannot help thinking that greater effort in this direction, for example by using company records, might have proved to be more rewarding. Moreover, confidence in his handling of statistics is not enhanced when we glance at pages 174 and 320 and find that he uses two different definitions of the US chemical industry and thereby confuses the issue regarding the weight-

ing of the latter in total world output. This inconsistency arises partly through not defining clearly the coverage of the industry at the start.

It is also surprising to find 1930 selected as the terminal date. The author justifies this on the grounds that the proliferation of products after the world depression would complicate the story too much. This hardly seems a very adequate explanation. That notwithstanding, it is certainly very irritating to be cut short at 1930 when so many exciting things were happening, not only on the technological front, but also in the economic field. Thus we hear little about how chemicals fared in the slump, how international agreements stood the test of excess capacity and falling prices, or what effects transpired (in terms of efficiency and so on) from the great mergers of the 1920s, notably those of ICI and IG Farbenindustrie. No doubt Haber intends to continue the story in a later volume, but I cannot help feeling that 1939 would have been a much more suitable year on which to end the present volume.

Writing about the chemical industry is not the easiest of tasks and the author has clearly sifted an enormous wealth of detail and arranged it in coherent order. But whether he makes the best use of it is another matter. Certainly there are still many unknown quantities on which we require further information. The chief impression that emerged from the book was the way in which Germany dominated the field both before and after the war (taking a narrow definition of the industry), and the way in which other countries struggled to catch up. Certainly by the post-war period Germany had lost some of her lead, but quite what happened earlier is difficult to say because of the absence of aggregate data. Nevertheless, Germany still retained the edge on other countries especially in the matter of research. It would seem, however, that we were already conscious of this situation before the appearance of Mr Haber's book so that in effect what he has done has been to put some flesh on our skeletal framework of knowledge of the industry.

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