MARGARINE—SCIENCE AND TECHNOLOGY

Margarine

Second revised edition. By A. J. C. Andersen and P. N. Williams. Pp. xi+420. (Oxford, London and New York: Pergamon Press, 1965.) 110*s*.

VERY little has been written about the margarine industry despite the fact that it is world-wide and that margarine is a major item in the human diet in many countries. With the first edition of *Margarine* in 1954, Andersen rendered a major service in setting out clearly, and in readable form, the basic principles on which the industry is built.

The present edition, as the preface suggests, retains virtually all the material of the first edition to which has been added the advances of the past decade. Most of the chapters are of a high standard and convey an intimate knowledge of the margarine industry.

The sections on milk and non-fatty ingredients are very comprehensive and indicate clearly the influence which these materials have on shelf-life and market acceptability. This is supplemented by a very useful chapter on storage and preservation which also underlines the importance of good plant hygiene and the correct choice of materials for plant construction.

The chapter on processing is probably the best in the book. The published, and particularly the patent, literature has been dealt with in considerable detail, with the result that both chemist and engineer will find much valuable information. The flexibility in equipment and in product properties which is available to the manufacturer is clearly brought out.

A short but valuable section on physical methods of quality control has been added to this edition, signifying that the industry is moving away from the purely subjective assessment of its products.

The chapter on legislation should prove useful to those contemplating exporting or manufacturing outside their own country, although chapters such as this can quickly become out of date.

There is no doubt that this edition will rank as highly as the first. In the past ten to fifteen years the industry has undergone something of a minor revolution. Greater use than ever before is made of a wide variety of raw materials. Advances in refining and processing have improved quality in terms of texture, flavour and keepability to an unprecedented degree. A streamlined flow of crude oils and fats in at one end of the larger factories is coupled with the flow of a range of sophisticated products out at the other end. Although many of the advances are cited separately throughout the book, the total impact, to demonstrate the dynamic state of the industry, would have been greater if they had been reviewed in the introduction. The quality of the photographs also reduces this impact of the book. They are poorly defined and often create an impression of the nineteen-thirties, even though many of them depict quite modern equipment.

There are also a number of points which I feel would have added to the value of the book if they had been treated more fully. Thus, in considering the chemistry of raw materials, organic chemistry is concentrated on at the expense of physical chemistry, yet it is mainly in physical terms that the important qualities of margarine, such as melting and spreading, can be explained.

Any major work on margarine must be incomplete without a considerable discussion on hydrogenation, yet the authors in this case deal with the subject mainly by a limited number of references to other works and a general description of the properties of several hardened fats. Without increasing the size of the book, a little more detail could have been included by reducing the space devoted to some of the historical aspects of margarine manufacture.

Despite the criticisms, I regard this edition as a comprehensive standard text-book on margarine manufacture, which those with either fringe or particular interests could usefully add to their libraries. It is well presented and easily read, and for those seeking greater detail, there is a comprehensive bibliography of papers and patents.

H. Lavery

INSIDE THE BOARDROOM

Investment Proposals and Decisions

By Bruce R. Williams and W. P. Scott. Pp. 100. (London: George Allen and Unwin, Ltd., 1965.) 21*s*. net.

IN 1961 a Centre for Business Research was formed at the University of Manchester as a co-operative venture between the University and a group of business firms who agreed to provide facilities for research into some of the major problems of business. *Investment Proposals and Decisions* is based on studies of the origin and outcome of investment decisions in fourteen of the member firms. The studies were carefully chosen to show in each one capital project where, if possible, investment decisions had been concerned with innovation or expansion and not simply with replacement, involved fairly large expenditure, had been taken some time ago so that the outcome of decisions could be investigated and, finally, were of a kind which involved several departments.

It is not surprising to learn that few of the projects examined conformed to all the requirements. Some could not be studied in isolation while, with others, investigations were circumscribed by the lack of essential documents, key people or sometimes by internal politics. Nevertheless, the studies proceeded, and it is a tribute to the Centre, not only that the investigations have been made, but also that they have been so frankly reported.

The cases described include investment for a new plant embodying a new process for making an existing product; the establishment of a branch factory abroad to remain in front of competitors; the building of a new factory at home to extend a relatively new product range; the introduction of new processes to improve product quality; the wider use of management services and techniques to reduce costs; the introduction of a new product; take-over of another company to acquire a successful product; and, in a number of cases, the introduction of computers for improving data processing. So far as possible, each case is considered against four aspects of an investment decision process—recognition of potential, collection of information, evaluation of the information, and the final decision. From these detailed examinations, Prof. B. R. Williams and W. P. Scott have gleaned some useful findings about the theory and practice of investment decisions and indicate that, although the practice may be based more on 'hunch' than on substantiated principle, the 'hunch' is not necessarily a whim plucked out of thin air. "It may be the result of a subconscious sifting of ideas, information and experience." Some common pattern for investment does emerge, and few aware of boardroom practice will be surprised to learn how, in judging proposals, the status of the sponsor carries great weight. This finding would have emerged in sharper relief if the Centre had found it possible to extend its enquiry to less sophisticated firms where management decisions are arrived at even more intuitively. What matters, however, is that a start has been made and, as a guide for investment decision-making in the future, the book is significant not only for the case studies but even more for its valuable check list for investment proposals. The well-planned structure and succinct writing make for easy reading, and the only detriment in a book which would both enliven and enlighten many board meetings is that the authors seem out of love with indexes.

T. H. Hawkins