

NEW BOOKS

Flour for Man's Bread

JOHN STORCK and WALTER DORWIN TEAGUE. 382 pages. University of Minnesota Press, Minneapolis, Minn., 1952. \$7.50. Reviewed by BETTY SULLIVAN, Russell-Miller Milling Co., Minneapolis, Minn.

THIS book is ambitious in scope. It comprises the history of milling from the prehistoric eras to the present day.

Much of the information was gathered originally for a Museum of Milling History, a project for which General Mills, Inc. engaged the authors. When the enterprise was abandoned owing to increased costs after World War II, it was decided to make the material available in book form. James Ford Bell, in a brief foreword, admirably outlines the genesis of the idea and the growth of the milling industry which this volume describes.

The authors state that there is no other single thread of development that can be followed so continuously throughout all our history as milling. No other industry bears so constant a cause and effect relation to every phase of the progress of civilization in the Western World. As a result, the technical developments in milling equipment and in the use of power are clearly outlined in their relationship to social history and economic progress.

The cultivation of grain, particularly wheat, is traced from the earliest records of antiquity to the present wide choice of varieties developed for their agronomic characteristics and for specialized flour types.

The gradual evolution of stones, querns, millstones and rolls for grinding and, indeed, the development of most standard mill machinery, such as washers, sifters, purifiers and dust collectors, is skillfully illustrated and explained. In the design and explanation of various forms of power, the authors show a remarkable ability to grasp essential mechanical principles and make them intelligible, even to the non-technical reader.

The last chapters of the book describe the modern mill and its flour and the new era of organization, distribution and research. Emphasis is naturally given to the history and present operations of the company which sponsored the book.

The book is illustrated by Harold Rydell with technically and artistically excellent drawings of equipment, processes and mill flows.

The vocabulary of milling terms at the end of the book constitutes a valuable addition.

The typography is excellent and the University of Minnesota Press did its usual outstanding job. There are a few errors of fact, due perhaps to the authors' desire for simplification.

The book is well written and a valuable contribution to the history of milling, and should prove of interest not only to the miller but to the engineer, sociologist and historian.

Starch: Its Sources, Production, and Uses

C. A. BRAUTLECHT. 390 pages + 18 pages of index. Reinhold Publishing Corporation, New York 36, N. Y., 1953. \$10.00. Reviewed by HARRY GEHMAN, Corn Products Refining Co., Argo, Ill.

COMMERCIAL production of potato starch has not received the attention it deserves in English language publications and the present work is of more value for this reason than for any other; nearly one-third of the volume is devoted to the industrial aspects of starch preparation from the white potato. Approximately an equivalent space is devoted to processing other starch-bearing media such as sweet potato, corn tapioca, wheat, rice, sago, arrowroot and still more minor sources. This may be an appropriate division since the major of these sources, corn, has been treated elsewhere. However, the omission of grain sorghum processing is not understood since this is an active operation whereas sweet potato starch production, to which two chapters are devoted, is inactive.

An unusual feature is the extensive economic treatment introduced freely into processing discussions. These include considerations of fertilization and plant breeding as factors in starch-bearing crop competition. Unfortunately, the statistics on overall starch production (Chapter 1) are unnecessarily out of date. Also, the comparison of starch yields per acre from corn and white potatoes on pages 28 and 30 use a pre-hybrid annual corn yield of 23 bushels per acre whereas on page 186 the much more recent Corn Belt and national average figures of 53 and 42 bushels are reported.

A statement on page 189 that corn is steeped in 16-20 per cent sulfurous acid solution is an obvious misprint since 0.16-0.20 was probably intended. The statement on page 233 that corn starch is normally dried to 12 per cent moisture content, as opposed to 18-20 per cent for potato starch, because of its protein content is in error. About

12 per cent happens to be the equilibrium moisture level of corn starch under average conditions regardless of its protein content. A chapter on the analysis of starch is likely to mislead the unwary since it discusses starch viscosity as though it were truly measured by the equipment described; cooked starch pastes do not behave as true "Newtonian" systems. An obvious error appears on page 336 in the statement that time in seconds or in 0.01 minutes may be used interchangeably in the same equation to arrive at centipoises in Stormer evaluations.

Chapter XVI purports to discuss special and modified forms of starches in about seven pages of printed matter. Perhaps this attempt at condensation is the origin of an indication that chlorine and hypochlorite solutions are used only to prepare soluble and bleached starches whereas the major use is in the preparation of starches modified through an oxidation process.

The author is to be commended on the general plan of keeping industrial and fundamental starch discussions separated. Where they are intermingled, modern concepts of starch chemistry generally do not fare too well. For example, on page 289 the statement that amylopectin differs from amylose in that it is a "phosphorus carbohydrate ester" is quite outmoded. Fortunately, an excellent final chapter, contributed by O. A. Moe, on the intricate details of starch molecules as now understood provides ample evidence of the scope and character of scientific work with this important carbohydrate.

Europe and Her Trade Fairs

32 pages. EUROPEAN TRAVEL COMMISSION NEWS BUREAU, 295 Madison Ave., New York 17, N. Y. Free.

THIS booklet has been designed to acquaint American businessmen with Europe's international trade fairs. The booklet contains detailed descriptions of eighteen of the major fairs scheduled for the current year.

Cotton Insect Control Recommendations, 1953

Division of Production and Marketing, National Cotton Council, P. O. Box 18, Memphis, Tenn. 18 pages.

BOOKLET designed for persons interested in the various recommendations for control of cotton insects in different states. It contains state by state tabulations of insect control recommendations for 1953.