

FISH HANDLING



AND PROCESSING

Fish Handling & Processing

Editors

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Illustrated by

KEITH ATKINSON



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Fish Handling and Processing

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Foreword

Food Science and Technology are relatively new subjects. Most food research laboratories in the world were established after the 1914-18 war, and only recently has it become possible to study food science in British Universities. The Torry Research Station in Aberdeen was set up by the Department of Scientific and Industrial Research in 1929 and was one of the first institutions in the world concerned entirely with the problems of fish handling, processing, distribution and storage. The staff of the Station have always been available to give advice, so far as current knowledge would allow, to firms in the industry, and the annual course at Torry for people engaged in handling and processing fish, both in this country and abroad, has been widely patronized since it was first begun ten years ago.

The need for a convenient and readable handbook, written especially for people employed in the British fish industry, has been apparent for a very long time, and it is therefore with great pleasure that I see this work completed.

It has in many instances proved difficult to decide how much attention to give to a specific point, but an attempt has been made to give greater attention to those theoretical and practical points of most importance to workers in the industry. Furthermore, to quote the author of a practical manual in another field, it is believed ' . . . that it is more important to be nearly right and understandable than to be academically accurate and incomprehensible'.

Many workers at the Torry Research Station and Humber Laboratory have contributed to this book. It was felt, however, that the authorship should remain anonymous, especially since the editors, in the interests of uniformity of style, have rewritten large sections of the text.

If this book helps those engaged in the many day-to-day operations of the fish industry to do their jobs better, and so makes a contribution towards the increasingly rapid technical development that is now occurring, all those who have helped in its production will be well satisfied.

TORRY RESEARCH STATION
ABERDEEN

G. A. REAY

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I



About this book

'Begin at the beginning,' the King said, gravely,
and go on till you come to the end, then stop.'

LEWIS CARROLL

ALTHOUGH a number of books on scientific aspects of fish handling and processing have been written by scientists, these have in the main been written for other scientists and technologists. Few attempts, and certainly none in Britain, have been made to write a work specially for those with wide practical knowledge of fish handling and processing but with little or no scientific training. Such an attempt has been made here. The products and processes used in other countries have not been discussed and even so far as the British industry is concerned, the coverage is not exhaustive. Attention has rather been concentrated on the major processes about which staff at Torry have gained first-hand knowledge through their own researches. Further work may modify

Fish handling and processing

some of the ideas discussed here, but it is believed that this constitutes a reasonably accurate and authoritative account of current knowledge.

Scientists, when they write for each other, use terms that are largely incomprehensible to the layman and sometimes, indeed, to other scientists working in different fields. So far as is possible, scientific terms have been avoided here. But they have not been avoided entirely. The scientist, when he attempts to write non-technical English, immediately becomes aware of the paralysing effect of other scientists looking over his shoulder. It is easy to poke fun at technical phrases, but in certain fields they are indispensable whilst in others they are difficult to do without. Deprived of them altogether, the scientific writer finds his sentences bursting forth into such a profusion of qualifying clauses and parenthetical asides that he begins to despair of his task altogether. Clearly, some compromise is necessary.

Here, two different approaches have been tried. A conscious effort has been made *not* to write for other scientists and technologists. The hypnotizing effect of the thought that every word on the printed page may damage a scientific reputation has, it is hoped, been avoided by the anonymity of the authorship of each chapter. Where it has seemed to suit the purpose and where slight inaccuracy has seemed of little moment, straightforward non-technical explanation has been given. But such a course could not always be adopted and in consequence chapters 12 to 16 deal with some basic scientific principles involved in fish technology. It is hoped that, by this means, the man who wishes to look up a particular point can obtain the information he requires whilst anyone reading the book as a whole will not be infuriated by constant repetition of the same basic facts.

The editors have felt that the text should, so far as is possible, be easily read without numerous references to other parts of the book or to other work. In consequence no cross-references have been given in the text; instead, a very full index has been provided, which will, it is hoped, prove sufficient for people using the book. No references to original papers have been given, primarily because this book is for people who are handling and processing fish and not for other scientists, but also partly because the relevant literature is so considerable that if it were to be covered adequately, it would greatly increase the length and cost of the book.

Specialized terms have generally been printed in italics when first introduced, and where necessary have been defined. Rigid scientific definitions of terms have been given only when this has seemed essential. Where abbreviations have been used, these conform as far as practicable to *British Standard* 1991: Part 1: 1954.

All temperatures have been given in degrees Fahrenheit. The Fahrenheit scale is used universally throughout the British fish industry;

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