Gas Chromatography. A Practical Course. By Gerhard Schomburg, VCH, Weinheim, 1990. xiv + 320 pp. ISBN 3-527-27879. Price: £30·50.

There have been many texts describing the principles and applications of gas chromatography (GC). This book aims to introduce a new approach by describing sufficient principles and detail to allow the beginner to apply the technique without overwhelming him with detail. The author also includes chapters aimed at providing interest for the more experienced user.

The first 6 chapters, covering 122 pages, give a clear description of the fundamental principles of GC analysis. Chapter 8 which discusses sources of analytical error will also be helpful to the beginner. Causes of poor peak shape are discussed well, but the author does not emphasise the importance of setting integration parameters correctly and this must surely be the main source of error in GC analysis encountered by the beginner.

Subsequent chapters include aspects of GC relevant to more experienced chromatographers including multidimensional GC, supercritical fluid chromatography, and coupling of liquid chromatography to GC. These chapters are rather sketchy and can only be considered as an outline of the techniques. More detailed texts must be considered before the techniques can be applied.

Chapter 11 includes 40 chromatograms. The isothermal and temperature-programmed analysis of a series of *n*-alkanes, and the chromatograms of test-mixtures for the characterisation of the surface adsorptivity of capillary columns are instructive, but the other chromatograms do not seem to be very helpful to readers in general.

Key equations and a glossary of terms are given in chapter 12, and the book is completed by a list of symbols and the index.

This book will be useful for beginners who wish to learn about the basic of GC, but the author is less successful in extending the appeal of the text to experienced chromatographers.

M. H. Gordon

Handbook of Industrial Drying. Edited by A. S. Mujumdar, Marcel Dekker Inc., New York, 1987. xii + 948 pp. ISBN 0-8247-7606-2. Price: US$180·00.

This book is divided into four major sections: fundamental aspects, description of various dryer types, drying in various industrial sectors and miscellaneous topics in industrial drying. Inevitably there is some overlap and duplication of material arising from this approach.

There are twenty-nine individual contributions from experts from all parts of the world. There are two appendices, one relating to enthalpy

humidity charts and the second to a bibliography related to drying solids and related topics.

Of particular interest to the food scientist or technologist would be the chapters on drying of foods, drying of agricultural products, evaporation and spray in the dairy industry, industrial spraying drying systems and energy aspects in drying. Food applications are also provided in the chapters on freeze-drying, solar drying and spouted bed drying. There is some discussion of nutrient losses in food dehydration but microbiological aspects are largely ignored. There is no mention of the problems encountered when drying sugars, or glass transition temperatures, although sticking temperature is defined.

The fundamental aspects are comprehensively covered, with particular reference to using enthalpy/humidity charts for following drying processes. In this section there is a good introduction to drying followed by chapters on experimental techniques in drying and basic process calculations in drying. For the most part, consistent symbol nomenclature is used throughout these theoretical chapters. My only comment would be that some of the diagrams could have been given slightly more explanation in the text. The sections on the different types of drier are very comprehensive.

The book is very well presented and offers a comprehensive review of all aspects of Industrial Drying. There is a useful index in which some foods are listed. This is a very important reference source for scientists and technolgists involved with drying applications.

Mike Lewis

Nutrient Availability: Chemical and Biological Aspects. Edited by D. A. T. Southgate, I. T. Johnson and G. R. Fenwick. Royal Society of Chemistry, Cambridge, 1989, 404 pp. ISBN 0-85186-856-8. Price: £45·00.

Bioavailability is becoming an increasingly important subject in the field of nutrition. Although it is well known that dietary minerals are badly absorbed, this aspect has received greater attention in recent years owing to the realisation that encouraging the population to increase the fibre content of their diets may also reduce mineral availability. Although minerals are perhaps a dominating theme of this book, the availability of other nutrients is also discussed, including major and minor nutrients. As an example of the latter, beta-carotene has been one area which has occupied that attention of nutritionists over recent years because of suggestions that high levels in the diet may reduce risk of some cancers. The forms of this (*cis* versus the natural *trans* form), and therefore its potential value as provitamin A, are covered.