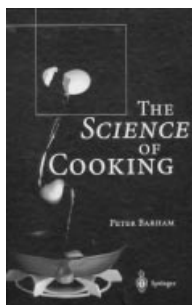


Tasty Treats

The Science of Cooking. By *Peter Barham*. Springer Verlag, Heidelberg 2000. 244 pp., 27 figs., 30 tables, hardcover DM 69.00.—ISBN 3-540-67466-7

About five years ago I had the opportunity to compare and review in detail four important books concerned with the relationship between food preparation and chemistry [*Angew. Chem.* **1996**, 108, 495–497; *Angew. Chem. Int. Ed. Engl.* **1996**, 35, 1575–1577]. This recently published book on the subject, which is nicely printed and bound, with its ambitious title, has a difficult task in standing up to comparison with those earlier books, two by Harold McGee and two by Hervé This. It is in fact superfluous!

Of course all books contain some material that has already been covered by their predecessors, and this is no exception; there is a bibliography to take account of that. The author cites McGee and even praises him, but he does not mention This. There are a few chapters that are really good. For example, oils, fats, and detergents are described very clearly and thoroughly, and the author presents convincing evidence that “taste” is mainly triggered by “smell”. Also many writers of cookbooks would do well to take note of the discussion



here about the need for recipes to be precise enough for their purpose (but no more). The section about the smell of fish is clear and precise, the recipes for fondues and for short-crust pastry are excellent, and the chapters about cakes and other baked delicacies are the best in the book. On the other hand, the long and detailed chapter about the history of chocolate, although very good, is unrelated to the rest of the book and seems out of place here.

Explaining the underlying chemistry of cooking is not easy, and other authors too have experienced difficulties. However, there are really serious problems with the chapter on “Physical Gastronomy”. The pages of differential equations and other theoretical material will certainly discourage readers. Admittedly, the author writes on page 49 that he has only included these physicochemical details for fun, and one can skip over them. Nevertheless, one gets the impression that he wanted to show off his ability with such difficult mathematics. At this point the reader will probably put the book aside resignedly.

Sections entitled “What might be wrong and what to do”, each consisting of a table with three columns headed “Problem”, “Cause”, and “Solution”, occur frequently throughout the book. The idea is good in principle, but in practice the result is often embarrassing. For example, on page 94, on the subject of cooking fish, the problem is described thus: the fish disintegrates during cooking or when it is taken out of the pan. Cause: you have cooked the fish too long. Solution: next time cook the fish for a shorter time. On the next line we have the problem: the fish is too hard. Cause: you have not cooked the fish long enough. Solution: next time cook the fish for slightly longer.

There are many details of the book that one can criticize, and a few examples follow. Not enough space is devoted to microwave cooking; the author does

not explain what one can and cannot use it for. On page 60, the recommendation to avoid washing pans so that they acquire a patina to prevent tender slices of meat from sticking is definitely wrong; instead one should buy one or two cheap non-stick coated pans. It is no longer regarded as good practice to cook food flambé. In discussing sauces, those bound with roux are treated at great length, even though they no longer have a place in good cooking, whereas those based on butter are not mentioned. I would certainly not want to eat leg of lamb that has been braised for five hours at 180 °C. There are many smaller mistakes that are hardly of any consequence by comparison, such as giving quantities of solids (salt, baking powder, etc.) in milliliters instead of in grammes, omitting already mentioned ingredients from the actual recipe, or giving quantities in non-metric units, as in the Mexican sauce called “Mole” (p. 221).

Three other important points must be mentioned. First is the frequent use of phrases such as “take some flour and baking powder, or flour that already contains baking powder”. Secondly, there are a few anecdotes containing humorous references of a British kind which make one wince, such as the stories about unsalted bread, “frozen pies”, and “roast disasters”. Not everyone likes dried cod, or even the expensive cod paste enjoyed in Mediterranean countries, which is made by mashing with the finest quality olive oil (baccalà), but why the author needs to fill two pages explaining his personal dislike of dried cod is incomprehensible. Lastly, a few further words about the recipes. On one hand they are too “British”. Thus, we learn a lot about such specialities as steak and kidney pie, pork and chicken pie, and fish and chips, also with much emphasis on turkey, which is perhaps justified in the era of BSE and foot-and-mouth disease. On the other hand, some are quite obscure, such as fish in rasp-

This section contains book reviews and a list of new books received by the editor. Book reviews are written by invitation from the editor. Suggestions for books to be reviewed and for book reviewers are welcome. Publishers should send brochures or (better) books to the Redaktion Angewandte Chemie, Postfach 101161, 69451 Weinheim, Germany. The editor reserves the right of selecting which books will be reviewed. Uninvited books not chosen for reviews will not be returned.

berry sauce, or a vinaigrette consisting of 100 mL of lemon juice and 60 mL of oil (sesame oil!).

The verdict: the reader who wishes to go into the subject thoroughly, combining scientific accuracy with plenty of interesting and absorbing information, should buy Harold McGee's *On Food and Cooking—The Science and Lore of the Kitchen*. On the other hand, the reader seeking tasty recipes, precisely described and guaranteed to work, together with the chemistry involved in them, should buy Hervé This's *Révélation Gastronomiques*.

Peter Weyerstahl

Institut für Chemie
Technische Universität Berlin
(Germany)

Asymmetric Organic Reactions.

Edited by Tsutomu Katsuki. Oxford University Press, Oxford 2001. xviii + 244 pp., hardcover £ 75.00.—ISBN 0-19-850201-X

This book is the tenth in the *Practical Approach in Chemistry* series, whose aim is to make important chemical techniques more accessible. As a contributor to another volume in the series, I should say that I consider this a laudable aim. The majority of the titles in the series have concentrated on preparative organic techniques, and this book on the topic of asymmetric oxidation, edited by Tsutomu Katsuki, is a very welcome addition. The list of authors reads like a "Who's Who" of the subject, and the book promised to be a very valuable source of practical tips of a kind that would not usually be included in a full paper. (The only source of more detailed, tested procedures is, of course, *Organic Syntheses*.) The book is divided into five sections dealing with asymmetric oxidation of C–H bonds (13 pp.), asymmetric oxidation of C=C bonds (127 pp.), asymmetric oxidation of C=O bonds (5 pp.), asymmetric oxidation of heteroatoms (28 pp.), and asymmetric oxidations using biocatalysts (45 pp.). The lengths of these sections not only reflect the relative importance of these topics but also indicate the level of

maturity of the procedures that are available.

The style of the chapters is relatively uniform, including a brief overview of each area, followed by a representative selection of experimental procedures, which are generally written in such a way as to allow anyone with a reasonable training in practical organic chemistry to carry them out. One especially useful feature throughout the book is that in most cases procedures for determining *ee* values are also included.

Many of the procedures use commercially available materials. In other cases, however, the key starting materials are only described by reference to the primary literature; I feel that these latter procedures are unlikely to inspire the reader to get into the laboratory. Nevertheless, if you want an authoritative and comprehensive answer to a question such as "how can I best carry out an asymmetric hydroxylation of a disubstituted alkene", you need look no further than this book.

Although the book was published in 2001, you have to search very hard for references after 1997. This presumably reflects the time that it takes to coordinate the preparation of such a book, but it does mean that subjects in which there have been significant recent advances (for example, in asymmetric nucleophilic epoxidation, particularly as reported by the Shibasaki group) are not especially up-to-date. However, given that the book does not aim to be a research monograph, this is not a significant failing.

The inclusion of a substantial chapter on biocatalysts is a good feature in my view, and some transformations that are very interesting from a preparative viewpoint are described. Nevertheless, I feel that many traditionally trained organic chemists would struggle to carry out the transformations, since several unfamiliar techniques are necessary. It would have been useful to provide indications of suitable types of laminar air-flow cabinets, autoclaves, and bench-top fermenters, which appear to be the tools of the trade, with information about where they might be obtained. While most organic chemists will appreciate the precautions that need to be taken handling chemicals, I am not sure that they would know what to do with a

Class 2 pathogen, and a little more guidance would have been welcome.

This book should be in every chemistry library, and I wholeheartedly recommend it.

Richard F. W. Jackson

Department of Chemistry
University of Sheffield
(United Kingdom)

Peroxide Chemistry. Research Report. Mechanistic and Preparative Aspects of Oxygen Transfers. Edited by Waldemar Adam. Wiley-VCH, Weinheim 2000. 664 pp., softcover DM 198.00.—ISBN 3-527-27150-3

This very interesting book summarizes the results of a 6-year (1993–99), and 10 million DM, priority program of the Deutsche Forschungsgemeinschaft (DFG) with the same title. As such it is not a systematic monograph reviewing the field, but rather a compilation of reports on the individual projects involved, covering different aspects of the subject. Being a research report of a national funding institution, it is almost exclusively devoted to the work of German chemists. Yet, because of the excellent level of the German school in this area of chemistry, and the brief comparison with the international context that appears at the beginning of each individual report, it gives a fairly comprehensive and timely picture of what is going on in peroxide chemistry nowadays. As a research report, the book is mainly intended for experts in the wide area of peroxide chemistry, but it can also be of notable interest for organic and organometallic chemists in general.

The book is edited by Waldemar Adam, a worldwide recognized authority in the field, who contributes an interesting preface which includes the history of how the national program was conceived and launched. There is something to learn from this story which goes beyond the actual scientific context. In fact, given the success of the initiative as an investment, as an organizational model, and as scientific outcome, the preface (and the book) could also make interesting and fruitful reading for sci-