when no structure of a hemlock alkaloid is provided, let alone even the briefest mention of their interesting toxicology.

Two chapters on reaction mechanisms follow, and the frontier molecular orbital approach receives a good coverage. There is an interesting chapter, full of practical hints about optimization of reactions through the use of temperature, pressure, polar solvents, crown ethers, solid supports and so on. The book concludes with a brief account of certain specialized techniques in NMR (COSY, ^{13}C-spectra), and a tiny index. There are some appropriate problems, with literature references provided for those seeking the correct answers.

Overall, Stowell succeeds in his goal of helping people make the transition from basic organic chemistry into the realms of research. Once into the research literature, a student can always find something of interest.

Such forays also serve as a reminder that organic chemistry is above all an experimental science, yet there are few textbooks which deal with this side of the subject. Arthur Vogel's *Textbook of Practical Organic Chemistry*, published by Longman in 1978, is of course the classic, and Clark F. Most's *Experimental Organic Chemistry* is rather like a slimmed-down version of that. (A new edition of Vogel is due later this year.) Most's book does have some appealing features of its own, such as the strong emphasis on safety, and some excellent tables on the chemical hazards and toxicities of common organic chemicals. It is, too, much easier to read than Vogel, and the introductory chapters on basic techniques, report writing, equipment, use of the research literature and so on could profitably be read by all undergraduates. The sections on spectroscopic methods are very good, but the chromatography is rather basic. When it comes to actual experiments, these are rather simple, and at least in Britain many of them would be done at school rather than at university.

Finally, there is a small section on qualitative analysis (Vogel has a very large section), and a modest index. The book is clearly written and illustrated, and with its strong emphasis on safety it should find a place alongside Vogel in all teaching laboratories. □

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Making a meal

J.A. McCleverty

Advanced Inorganic Chemistry, 5th edn. By F. Albert Cotton and Geoffrey Wilkinson. *Wiley:1988. Pp.1,455. £21.95, $44.95.*

MOST inorganic chemists know the preceding four editions of this text well. So here I will not describe in detail the rich menu being offered, but will only compare it with its predecessor.

First, the repast is more substantial (59 extra pages). Second, each course is altered in size. Thus the multi-choiced *hors d'oeuvres* of the fourth edition have been replaced by a shorter, general survey (stereochemistry; simple bonding modes; general ligand behaviour; π-acceptor and hydrocarbon ligand types), reduced in length from 208 pages to 83; here I missed the comprehensive ligand review of the previous edition. The fish and meat courses follow tradition, although the coverage of main groups is expanded (by 34 per cent) and that of the transition metals is slightly abbreviated (by seven per cent). The special topic section is, as before, the varied and delectable crowning confection of the book, and has been reorganized and lengthened by 62 pages.

This new edition is a treat, and no self-respecting inorganic chemist should deny him or herself. It is up to date (with references to 1987), and full of relevant examples to modern petrochemical-based processes. However, it is not appropriate as a basic student text, except for those who intend to take inorganic chemistry very seriously (others should turn to the same authors' *Basic Inorganic Chemistry*). For instructors, it is a mine of information, but may only be fully appreciated with previous editions and other related volumes — the Mrs Beeton and Robert Carrier of the inorganic world — to hand. Cotton and Wilkinson avoid much theoretical discussion, pointing out the transitory nature of such punditry, and use the space released from the previous editions to add new facts. In *The Chemistry of the Elements* Greenwood and Earnshaw take a broadly similar view, although more from a main-group than a topic-orientated perspective, while in *Inorganic Chemistry* Purcell and Kotz adopt the typically North American theoretical approach but sacrifice facts.

The fifth edition is adequately, if somewhat idiosyncratically referenced. The appendices are of limited use, and I am not convinced they are necessary. But although the book is not comprehensive (there is hardly a mention of solid-state chemistry or of the influence of the subject on materials science), it is an invaluable guide. Together with the volumes mentioned above, it will grace my kitchen for many years to come. □

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The matter in suspension

John Gregory

Basic Principles of Colloid Science. By D.H. Everett. *Royal Society of Chemistry: 1988. Pp.243. Pbk £9.95, $19.50.*

COLLOID science is not well endowed with introductory texts (or any texts for that matter), so the appearance of Professor Everett's book is very welcome. The author has set out to survey the field from a fairly fundamental standpoint, but without assuming too much in the way of background knowledge. His aim was for the book to be accessible to readers at about A-level chemistry standard, although there is much here that will interest more advanced students, and those in industry who are working with colloidal systems but don't have any formal training in the subject. There are many examples given of technological aspects.

On the whole, the principles are adequately covered, although, in places, I have doubts about the approach taken. There is frequent recourse to formal thermodynamic argument, which is not always appropriate at this level of exposition and which sometimes gets in the way of a clear conceptual understanding of the phenomena described. However, several difficult concepts, such as dilatency, are put over very clearly, with good explanatory text and helpful illustrations.

Given the central role played by surface charge (at least in aqueous colloids), surprisingly little space is devoted to electrical double layers and electrical interaction between particles. The Stern layer and specific counterion adsorption are hardly mentioned, yet these concepts help greatly to understand colloid stability.

There is a potential source of confusion over terminology. In his introductory chapter Professor Everett distinguishes between 'coagulation' and 'flocculation', and yet in Chapter 9 the terms are used virtually interchangeably. Again, although the index contains separate entries for 'heterocoagulation' and 'heteroflocculation', the references are to essentially the same phenomenon.

These and a few other slight blemishes should not detract from the value of the book. It provides a thorough overview of modern colloid science, with a nice balance between the fundamental and the applied aspects. It will serve as a good introduction at several levels, and will be greatly appreciated by teachers and practitioners of the subject. □

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