analysis at undergraduate and postgraduate level to mathematicians, engineers and physicists.

The topics covered include initial- and boundary-value problems in ordinary differential equations, eigenvalue problems in ordinary differential equations and an introduction to the numerical solution of partial differential equations. Extensive sub-sections are devoted to related topics such as the solution of simultaneous linear equations, the matrix eigenvalue problem and spline and least squares methods of function approximation, etc. Thus, while the work is devoted mainly to differential equations it covers a sufficiently wide field to make it a suitable text for a fairly wide-ranging course in numerical analysis.

The book is well written and produced, and (in paperback) available at a reasonable price. Each chapter motivates the ensuing discussion by considering some realistic physical problem and gives guidance on further reading.

The main criticism that can be levelled at the book is that the problem of stiffness is only mentioned in passing and that information on the practical implementation of the algorithms on computers must be sought elsewhere.

IAN AITCHISON
Edinburgh

AUERBACH PUBLICATIONS
(EDITORS)
Practical Data Base Management
Prentice-Hall, Englewood Cliffs, New Jersey, 1981. 429 pp. £18.70.

How difficult it is to be contemporaneous in a book on such a fast moving field! A large and growing group of people who need to know about databases today, are those using or are contemplating buying 'business micros'. By that is meant the 'personal' microcomputers that have been the rage in recent years and which advances in technology are upgrading with floppies and fixed Winchester-type disks. Thus, given that the title of the book should have the suffix 'on Mainframe and Mini-Computers', let us consider the book.

The book does not have an author but is written by a committee of contributors to Auerbach's Data Base Management Series. It has been a competent job. The book is in six parts: Management Perspectives and Planning, DB Environment, Evaluation and Selection of Software, Administration of DB Environment, Design and Development, Current Directions. Each chapter has a list of numbered references and the book itself has a bibliography and good index. The book is a well balanced, in-depth study, with plenty of good figures and has clear descriptions free of both annoying colloquial phrases and emphasis on the products of any specific manufacturer. It thus becomes eminently useful in every Commercial DP and College Computer Science Department from San Francisco to Sinkiang, even though references to non-American publications appear to be nil.

IAN WILLIAMS
London

G. C. LEVY AND D. TERPSTRA (EDITORS)
Computer Networks in the Chemical Laboratory
John Wiley, Chichester, 1981. 221 pp. £17.50.

This book is the outcome of a symposium on Computer Networks held in March 1980 at Houston, Texas, under the auspices of the American Chemical Society. It is a collection of eight articles by chemists from both academic and industrial environments, mostly American, who have made extensive use of networking in their laboratories.

The editors themselves provide a useful historical survey and introduction to networking for the layman. The last seven chapters describe individual systems either planned or fully operational which give a good idea of the possibilities using current technology. For example Woodward and Reilley (North Carolina) describe an application to instrumentation for chemical analysis, where local micro- or minicomputers on-line to an instrument are networked to a departmental mainframe computer itself linked with other mainframes. They give a detailed list of hardware specifications (including prices) and indicate software either in use or to be developed. Dessy and Hooley (Virginia) describe the implementation of FORTH in a network environment and Alderman et al. (Utah) describe their small-scale nuclear magnetic resonance laboratory network. Other authors give a useful mixture of hardware, software and applications.

The book will be useful to practising chemists who, like the reviewer, need to stay informed of possibilities when planning developments in their local environment. More importantly it will provide ammunition for the computer systems analyst in a large organization who wants to evangelize his chemical colleagues. It is produced from typescript and is clear and legible.

J. E. PARKIN
London

A. C. NORRIS
Computational Chemistry
John Wiley, Chichester, 1981. 454 pp. £8.75

Dr Norris is the latest in a line of chemistry teachers who have put into print the results of a considerable amount of painstaking development in introducing computational methods to students of chemistry. This book is more successful than most and presents a good coverage of numerical methods which should find extensive application in the analysis of experimental data.

Although the book is aimed specifically at the undergraduate chemist there is no reason why it should not have wider appeal. There are well-written chapters on problem formulation, computational errors, statistical treatment of errors, solution of equations, numerical integration and interpolation. There are a number of library programs and subprograms given in the appendix which are a simple introduction to more extensive libraries such as NAG. Each chapter consists of an ample statement of the necessary mathematics with well illustrated examples, followed by suggestions for computational work in which the student is expected to organize his data and use the complete programs or to write short programs incorporating the subprograms. The author does not attempt to teach a programming language and assumes a minimal knowledge of FORTRAN. The library programs conform to FORTRAN IV (ANSI 1966) and are available from the author as paper or magnetic tapes as are many of the student exercises.

There are some omissions. Dr Norris does not deal with eigenvalue problems on the grounds that he is concerned with experimental applications, ignoring the fact that much of the more advanced experimental work done by students is concerned with the analysis and interpretation of spectroscopic experiments with the attendant quantum mechanics. Monte-Carlo methods are not mentioned—perhaps no bad thing when students have access to a mainframe computer.

Despite these there is enough in the book to make it good value both for the chemistry staff in charge of laboratory work and for the more interested students.

J. E. PARKIN
London

JACK FRENCH
Up the EDP Pyramid
John Wiley, Chichester, 1981. 185 pp. £14.75.

This is for the ambitious American computer data processing professional who is willing and able to afford this expensive book. It is hardly ideal for the enterprising non-North American who is one of the large percentage of computer people who constitute those in big highly technical projects (e.g. telecommunications, weaponry, aerospace), or in the myriads of small companies that produce all the microelectronic applications (e.g. personal and business microcomputers, microprocessor driven hardware). Having said that, there is some commonality between big DP organizations and large scientific and technical computing companies which are big enough to have pyramids large enough to climb. But there again one must say the chapter headings reflect how to succeed in any big organization whether it be in the Civil Service or the Salvation Army: Plan Your Career, Know Your Company's Organization, Determine What Experience is needed and How to Get It, Learn Company Tactics and How to Use Them, Create Your Future, Prepare Yourself, Get the Maximum Offer (no mention of Trade Unions, apparently not relevant in the USA), How to Stay at the Top, Be Aware of Future Developments. Platitudinous and indeed turgid stuff. No mention of Parkinson's famous laws for the Organization Man, such as going to the right cocktail parties, arriving at $t + 30$ minutes, circulating in an (anti)-clockwise direction in the (Southern) Northern Hemisphere and leaving at $t - 30$ minutes, etc, etc.

There are 38 pages of Appendices, A to J, that list US DP organizations, software and hardware vendors.

This book is recommended for those who satisfy the criterion enunciated in the first sentence of this critique.

IAN WILLIAMS
London

BRIAN CONOLLY
Techniques in Operational Research, Volume 2. Models Search and Randomization
Ellis Horwood, Chichester, 1981. 338 pp. £7.50.

This is a mathematicians text on a selection of topics in operational research of particular interest to the author and it is intended to be a companion volume to a text on queueing systems. The initial part of the book is concerned with an exploration of various population models. The chapters are well referenced and provide the basic material for further study of both deterministic and stochastic varieties—models of special interest to

the military analyst and the epidemiologist. This is followed by some analysis of search theory, again using both varieties of modelling approach. This material is less usually encountered in OR texts and its inclusion here is more than justified by its relative lack of inclusion elsewhere—quite apart from its potential importance as a topic. The focus of attention is then shifted on to topics associated with computer simulation and the generation and

testing of pseudo-random numbers for simulation. These are topics that frequently get glossed over in the hurry to get on with the process of getting and using simulation results and the author's exposition is a salutary reminder of the fundamental importance of the generation and use of sequences of random numbers. The material is of advanced undergraduate or postgraduate level. In his foreword the author issues a challenge for his readers to

search for misprints as a practical example of search theory. Sadly, I failed this test as I haven't managed to find one! This is a useful text on the mathematical fundamentals of operational research.

BARRY BARBER
Brentwood

Second International Conference on Databases

Call for Registration

The recent series of database research conferences (ICOD-1, BNCOD-1 and BNCOD-2), which has been promoted jointly by The British Computer Society and Aberdeen University, continues in 1983 with the Second International Conference on Databases. The venue this year is Churchill College, Cambridge, England and the dates are Tuesday 30 August to Friday 2 September.

As usual the objective of the conference is to provide a forum for researchers, experts, and other interested parties to discuss and debate issues of interest from current research. Among the topics to be covered are data modelling, model and view mapping, database storage models, data placement techniques, database design and reorganization, data dictionaries, performance monitoring and optimization, query optimization, highly reliable and available systems, database machines, distributed databases, database languages and privacy and integrity considerations. The customary format of guest speaker, invited speakers, submitted papers, discussions, poster sessions, sherry party and conference dinner will be followed.

In addition to the main conference there will also be a Special Workshop on New Applications of Databases. The workshop will begin on Friday 2 September and continue until the afternoon of Saturday 3 September. It is possible that there could be some presentation common with the conference on the morning of Friday 2 September. Among the applications to be considered at the workshop will be image databases, knowledge databases, robotics databases, engineering and CAD/CAM databases, text and script systems, natural language interfaces and voice and image controlled interfaces. Delegates may attend either the conference or the workshop or both.

At the time of preparing this notice the final programmes for the conference and workshop had not been decided; but the call for papers had generated over eighty submissions from most parts of the world and a highly significant conference is assured. However, for those with a teletype and a modem a copy of the programme can now be obtained by telephoning 01–368-1272 (International code—441–368-1272 from outside the United Kingdom)

and logging in to ppn 20000, 1. The computer concerned is a DEC System 10 and the telephone connection is ASCII96, full duplex, even parity either 110 or 300 baud. The logging in sequence is type Return twice, wait for message, type LOGIN followed by the ppn followed by Return.

As with previous ICOD and BNCOD conferences the number of delegates will be strictly limited, so that the delegates have a better opportunity to participate fully in the conference. The conference has been made residential deliberately so that all the delegates can have the chance to meet each other and to discuss common interests. This year the limits are 200 for the main conference and 100 for the workshop (approximately).

Because of these limits persons wishing to attend the conference and/or workshop are advised to book early. Full details of the charges and the programmes and booking forms can be obtained from the Conference Secretary: P. Hammersley, Head of Computer Centre, Middlesex Polytechnic, Bounds Green Road, London N11 2NQ, United Kingdom (Tel. 01–368-1299 ext. 318).

Conferences

18–20 MAY 1983

MIPRO-83, the 6th Microprocessors/Microcomputers Course/Conference. Opatija, Yugoslavia. This conference is aimed at specialists in hard and software from both east and west, especially managers involved in advanced microcomputer application techniques and trends.

Further information may be obtained from:
Dr P. Dragojlović, MIPRO Secretariat, Trg P. Togliatti 4, 51000 Rijeka, Yugoslavia.

18–21 OCTOBER 1983

μP '83, 3rd Symposium on Microcomputers and Microprocessor Applications, Budapest, Hungary.
Further information may be obtained from:
Mrs. I. Baba, Scientific Society for Telecommunication, POB 451, H-1372 Budapest, Hungary.

12–14 DECEMBER 1983

Third Conference on Foundations of Software

Technology and Theoretical Computer Science, Bangalore, India. Areas of interest: formal languages, data bases, algorithms, formal models of computation, programming, graphics and communication. Papers should be submitted by 31st May, 1983 (four copies).

Further information may be obtained from:
Chairman, FST & TCS Programme Committee, NCSDCT, Tata Institute of Fundamental Research, Colaba, Bombay 400 005, India.