member in question is a speaker at a conference; after the 'speaker' nodes, the sequence joins the central arc from Member Name, which is taken if the person is chairman of one of the conference sessions. All of these groups of elements can repeat, and the network structure allows groups of fields to be omitted entirely if they are not required. All necessary fields can nevertheless be input without any redundancy in the information, such as repetition of one Member Name.

References
VON EICKEN, H. et al. (1971). Proposal for a joint library mechanization and text processing project, CERN/DD Internal Report.
VAN PRAAG, A. (1975). Terminals for the Interactive Input and Editing of Bibliographic Records on the PDP-11 Computer in the CERN Library. *CERN Yellow Report* 75-15.
PINEY, C. (1974). A multi-user DOS for Interactive Cataloguing. *Proceedings of the Digital Equipment Users' Society*, Zurich, Switzerland, pp. 117-122.

Book reviews

Optimization, edited by R. S. Anderssen, L. S. Jennings and D. M. Ryan, 1972; 237 pages. (*University of Queensland Press*, A$4·00)

This book reports the proceedings of a seminar on Optimization held at the Australian National University in December 1971.

The papers are refreshingly pragmatic in their approach. The first paper by R. B. Potts 'Optimization in the Real World' sets the tone by making a division of the real world into the physical world where optimization is a secondary concept and the nonphysical world where it is primary. Moreover he asserts that there is an important contrast between the user and the system—what is optimum for the individual user is not usually optimum for the system. This is important in the formulation of problems and in choosing methods to solve them. Anderssen in his paper 'Global Optimization' makes the same point which is often sadly overlooked in the literature.

Some of the papers are on techniques. Brent gives a method of optimizing continuous unconstrained functions without calculating derivatives using a restarting device to prevent the loss of dimensions which can occur. Osborne discusses penalty function transformation methods for the constrained problem and Bard transforms the original constrained problem into a series of quadratic programming problems of a special form. Bennett and Edwards develop a branch and bound method for the integer linear programming problem with a frequently found highly structured form. Other papers apply optimization methods to problems in approximation. Close to one of my own interests is a paper by Jupp on best spline approximations where the optimal positioning of the knots is to be determined and Bond discusses the use of optimizing methods in the fractional programming problem.

Many of the papers discuss immensely practical examples— optimal placing of files on disc stores in computers to minimise seeking distance, optimal control theory applied to the control of a steam boiler, applications to statistical problems of estimation, etc.

I cannot mention all the individual papers, but all are each in their own way worthy contributions to what must have been a successful conference. To anyone wanting to see something of the why as well as the how of optimization this book is certain to be useful.

ANDREW YOUNG (Coleraine)

Les structures de listes et leurs applications, by E. and A. Sitbon, 1975; 190 pages. (in French, *Masson et Cie*)

Le système documentaire SATIN 1, by L. Bourrelly and E. Chouraqui, 1974; 398 pages. (in French, *Centre National de la Recherche Scientifique*)

These books have been grouped together for review because they share one important attribute. They are written in French. Apart from that they have little in common.

The book by A. and E. Sitbon is a text book on list structures and their applications. After introductory chapters on the organisation of data, and on list structures, there are chapters describing the systems LISP, SLIP, and L6, for list processing. The book ends with a chapter (constituting about one quarter of the book) reviewing applications of list processing in fields as diverse as the formal treatment of polynomials and the organisation of a file of student records.

A favourite technique of a reviewer is to contrast the objectives of the authors, described in the preface, with the achievement, as he sees it, in the text. The present authors have effectively foiled my attempt to use this approach by providing no preface, and no indication of the intended readership, or what role the book is intended to fill. I have assumed the book to be intended as a text for the use of students of 'Informatique' in connection with a fairly advanced course on data structures. Naturally the sections on the systems (Lisp, etc.) would not serve as user manuals for these systems, but provide an excellent review of what they offer the users.

There are problems for the students to solve at the end of each chapter (a total of 18 in the book). These are not particularly inspired, but do give the reader some material for self help. I have found the book to be a useful contribution to the literature in this field.

The book by Bourrelly and Chouraqui describes the system SATIN 1 which, they say, was developed within the framework of research carried out by the 'Research Unit for Documentary Analysis and Computation in Archaeology' into the solution of methodological problems through the introduction of 'informatics' into certain of the human sciences—archaeology first, but also history, urbanism, geography, etc. It is a documentation system developed in the first instance for the maintenance of a general inventory of the monuments and art treasures of France for the Ministry of Cultural Affairs, but conceived as a system of much more general application. The design of the system has leaned heavily on theoretical studies of the problems of information storage and retrieval. The book is therefore much more than just a manual of SATIN 1, though it serves that purpose. It should be of considerable interest also to anyone working in the theory of information retrieval systems.

S. J. GOLDSACK (London)

Short notice
Computer Techniques and Optimization is to be published quarterly, four issues per year constituting one volume. The first issue is scheduled to appear in March 1977.

This is to be a new section but will form an integral part of *Analytica Chimica Acta*, which will continue under the general editorship of Professor Philip W. West and Dr A. M. G. MacDonald. However, it can be subscribed to separately. The subscription price for the first volume is US$49·75/Dfl. 129.00, including postage.

Free sample copies will be available on request from the publishers: Elsevier Scientific Publishing Company, P.O. Box 211, Amsterdam, The Netherlands.