

"is the only computer yet designed which can be produced entirely by unskilled labour."

Patrick Meredith (who, because of his participation in the Washington ICSI Conference of 1958, is perhaps better known to American librarians and documentalists than are most of the other contributors to this volume) is represented here by a particularly fine attempt to develop a fundamental theory, based on the structuring of relationships, of the subject or "topic" analysis of documents. The work of both Farradane and Ranganathan has much in common with Meredith's inquiry into the psycho-linguistic and logical relationships in the classification of documentary content. Barbara Wootton, who is a professor of social studies at the University of London, is also well known on this side of the Atlantic, mainly through her contributions to ASLIB publications. She is represented in this volume by two excellent papers which discuss the problems of communication and language, particularly in the social sciences. Both essays should greatly interest librarians generally and reference librarians in particular, as well as those concerned specifically with classification.

This reviewer is thoroughly convinced that the literature of librarianship needs enrichment through relevant writings from other disciplines, and we applaud Miss Kyle's declaration that "Librarianship no longer deals with packaged information but must include such topics as semantics, the philosophy of science, and automation." We hope that this collection of papers will be widely read by librarians, for as the editor says, it "demonstrates how large is the area of knowledge and how numerous the journals which documentalists must scan if relevant work is not to be missed." However, there is one serious problem of strategy that Miss Kyle's point of view presents: how is it possible to persuade, not to say compel, librarians to read such material. Certainly more conferences like those of ASLIB and Syracuse University are needed, and compilations like Miss Kyle's are useful. But the fact remains that such important material, of which the volume under review is a valid sample, is not easy reading for those not trained in the appropriate

discipline. Perhaps one cannot complain too loudly if the average librarian shies away from concepts and vocabularies that are strange and even terrifying. But the librarian of tomorrow will have these interdisciplinary infiltrations in his future, and he must prepare himself for them. Therefore, the meaning for library education of the growing dependence of librarianship upon research in areas of knowledge which, in the past, were regarded as alien to it is obvious. We hope that *Focus on Information and Communication* will help to sharpen the perspective on the curriculum in every library school.—Jesse H. Shera, *Western Reserve University*.

Computer & Information Sciences. Ed. by Julius T. Tou, and Richard H. Wilcox. Washington: Spartan, 1964. 544pp. \$13.85. (64-25585).

The term "information science" has been used in so many ways and in so many different contexts that the prospective reader of a book concerning it must be alert to the particular meaning used. This book adopts the meaning used by those who are highly oriented toward computer theory; it therefore includes information science as a branch of "computer science," with heavy emphasis on the problems in "artificial intelligence." The papers from which this book is made were presented in June 1963 at a conference concerned with "Learning, Adaptation, and Control" as a symposium on Computer and Information Sciences.

The papers can be divided into five groups. (The numbers shown for each paper are those assigned in the book.)

A. *Four concerned with learning or adaptive behavior:* (2) some fundamental theorems of perceptron theory and their geometry; (15) dynamic programming, learning, and adaptive processes; (16) pre-requisites of self-organization; (17) a unified theory of learning and information.

B. *Seven concerned with pattern recognition:* (3) determination and direction of features in patterns; (4) hyperplanes, hyperspheres, and hyperquadrics, as decision boundaries; (5) a mathematical approach to pattern recognition and self-organization; (6) a pattern-identified device using linear

decision functions; (7) a theoretical and experimental study of a model for pattern recognition; (8) new developments in artificial intelligence and pattern recognition; (11) a threshold-conditioned adaptive template procedure for recognition of normalized connected patterns.

C. *Three concerned with "automata theory"*: (9) the structure of the semigroup associated with automata; (10) temporally organized automata and an algebraic theory of machines; (14) a problem solver with formal descriptive inputs.

D. *Five concerned with adaptive control*: (12) pattern-recognizing control systems; (13) learning-control systems; (18) new problems in adaptive control; (21) principles of learning systems construction for complex process control; (22) on the design of learning systems for control.

E. *Three concerned with artificial intelligence in general*: (1) a model for experimental storage in neural networks; (19) thousand-gate-computer simulation of a billion-gate-computer; (20) noology—the science of intelligence.

Throughout, there is a heavy use of

mathematical notation. Some of the papers (2, 6, 11, 12, 15) emphasize the optimization of measures of effectiveness (in the spirit of linear programming); others (1, 4, 5, 7, 8) consider the statistical or probabilistic factors involved; others emphasize the logical or algebraic structure (3, 9, 10, 14, 17); others (13, 21, 22) are very oriented to the issues in control, particularly in the dynamics of feedback. The remainder (16, 18, 19, 20) are essentially descriptive. However, even for the mathematically sophisticated, this is a book for the "initiated." The descriptive articles are at a very speculative level of discussion, and the technical ones depend heavily on prior work, particularly on Rosenblatt, F., *Principles of Neurodynamics: Perceptrons and the Theory of Brain Mechanisms* (Spartan, Washington, D.C., 1961).

The book is published by Spartan and suffers from numerous typographical and printing errors, presumably due to the typical pressures of publishing a "proceedings" within reasonable time limits.—*Robert Hayes, University of California, Los Angeles.* ■■

The Editorship of *CHOICE*

RICHARD K. GARDNER, who has served as editor of *CHOICE* since its beginning, relinquished the editorship with the January 1966 issue. He has been editor for two years and eight months; during this time he brought a singularly useful journal into existence, guided its first steps, and brought it to a recognized place as an essential publication not only for academic libraries but for all types of libraries. He brought to the editorship scholarly background, academic experience, determination, and organizational ability. The result is a contribution of considerable importance to libraries and to those served by libraries.

His many friends within and outside the American Library Association wish him well in his new career at Western Reserve University.—*David H. Clift, Executive Director, American Library Association.* ■■