BOOK REVIEWS

Automation in Libraries, by R. T. Kimber. Oxford, Pergamon Press, 1968. 140 pp. $6.00.

Many books have been published in recent years on the subject of library automation. Very few of them, however, have succeeded in making meaningful contributions to a better understanding of the subject. This volume has made a sincere effort to be one of the few.

Although library automation is an ambiguous term which lacks precise definition, it is used here clearly to mean the use of computers in libraries. The book is intended for those with no computer background but who are familiar with library operations. It attempts to give a good introduction to current practices in library automation and a fairly detailed account of the state of the art.

In the first Chapter, "Libraries and Automation," Mr. Kimber discusses the relationship between the library and the computer. Seeing the computer as a means of performing human clerical functions, he points out two important attitudes that must be observed: first, one must not change to a computer system just for the sake of changing, and second, one must be willing to change if the change means improvement.

The monetary worth of the computer in the library is difficult to express because the end result is not increased profit but better service. Since benefits from computer operations can be expressed in time and effort saved, these are the means of monetary comparison the author suggests. He also observes that although there are many good reasons for wanting computerized operations, some of these are merely emotional.

Chapter II, "Introduction to Computers" is written by Anne H. Boyd, lecturer in computation at Queen's University of Belfast. Miss Boyd gives a brief review of the development and use of computers and discusses the fundamentals of computer systems. The next four chapters by Mr. Kimber present computerized systems for various library activities: Chapter III, "Ordering and Acquisitions," Chapter IV, "Circulation Control," Chapter V, "Periodicals Listing and Accessioning," Chapter VI, "Catalogues and Bibliographies." Each chapter with the minimum of technical terminology gives a good account of what is involved in automating a particular operation. His treatment is very informative on these matters.

In his final Chapter (Chapter VII, "The Present State of Automation in Libraries") Kimber discusses current trends of library automation and gives examples of libraries which use computers. His list is admittedly not comprehensive, but it does provide a comparison to the "ideal" systems he has described in the earlier chapters. In commenting on the future of computerized library systems, he sees these systems as an escape from the problems of everyday library operations.

This book should be a good addition to the current books on library automation. One unfortunate aspect, however, appears to be an absence of treatment regarding the psychological impact of automation on librarians and users which is certainly one important aspect to be considered when automation of a system is proposed. Also, at times the author, in attempting to simplify his discussion, has made a generalized statement without fuller explanation. This could be misleading and tend to confuse the uninitiated reader. These deficiencies are not of major consequence and do not prejudice the total work but, care should be taken in reading.

Sul H. Lee

1968 International Directory of Research and Development Scientists, Philadelphia: Institute for Scientific Information, Inc., 1969, 1352 pages (approx.). $60.00.

The second issue of the "International Directory of Research and Development Scientists" (IDR&DS) lists the names and organizational addresses of 152,648 authors whose papers were listed in either "Current Contents/Life Sciences", or "Current Contents/Physical Sciences" during the year 1968. It is divided into three sections: the author section; the organization section, which lists some 22,718 companies, laboratories, and universities; and the geographical section, which, in addition to the 50 states and three territories of the United States, lists scientists from 137 foreign countries.

The volume is correctly termed an issue, since only authors published in 1968 are listed. The first issue for 1967 would have to be examined for authors who published in that year and presumably there will be a third issue covering authors publishing in 1969. Thus, the volume does not contain the comprehensive coverage of the scientific community offered by other, more carefully compiled directories. However, the IDR&DS, at least the most recent issue, does contain addresses that are reported in literature in 1968.

The volume having been produced as a by-product of ISI's computer tapes, some keypunching and indexing errors are evident, but these are generally of a type that will not interfere with the intended use.

In spite of these deficiencies, the IDR&DS does provide a useful locator of specific scientists if they have published as a primary author in the year 1968. Instructions for use of the directory are clear and concise. While the directory does have the typical appearance of computer printout, the type is legible and clean cut.

John W. Murdock

Library Automation: A State of the Art Review. Papers presented at the Preconference Institute on Library Automation held at San Francisco, California, June 22-24, 1967. Edited by Stephen R. Salmon. Chicago: American Library Association, 1969. ix, 175 pp. $7.50.

This publication of the American Library Association presents the papers given at the Preconference Institute on Library Automation held June 22-24, 1967, under the sponsorship of the Information Science and Automation Division of ALA. The intent of the institute was educational: to provide the division members a review of the state of library automation. The session papers were aimed at presenting a synthesis of the recent developments in the field while avoiding detailed reports on individual systems.

Sessions were organized according to library functions — acquisitions, cataloging, book catalogs, serials, and circulation. For the most part, the review papers for these sessions are still good survey articles, although the coverage is no longer comprehensive. Perhaps the one paper of this set that has held up best through time is Bruce Stewart's practical and well-thought-out analysis of developments in automated serials systems.

The review papers are limited, in part because of the organization of the sessions, to covering the state of automation of single- or limited-function systems. What is missing in the coverage (it seems from this point in time) is more than brief mention of the more complex, integrated systems approaches then underway at several different institutions (Chicago, Yale, and Toronto Universities, to name three, were working with well-developed concepts of multiple-function systems). Library systems development has broken away and will continue to go further away from the traditional library organization based on processing functions. Perhaps future educational institutes could best be organized according to automated system functions (i.e., input, processing, files, output) rather than library processing functions.

In addition to the state-of-the-art reviews, other session papers presented at the 1967 Institute and included in this work were on the subjects of: library systems analysis (how to do it), influence of automation on new building planning, implications of MARC, and the Library of Congress systems studies (this paper includes twenty-eight pages of appendices, mostly charts). Two additional papers include a discussion of the future of, and a tabulation of trends affecting, library automation. Much of the material in these non-survey papers is reported more completely elsewhere and some of it now seems dated.

The material presented in this publication must have produced a highly effective educational institute in 1967. In 1969, its value is at best as a first reader in library automation but not as the state-of-the-art review the title proclaims.

Charles T. Payne

Computers and data processing: Information Sources, by Chester Morrill, Jr. An annotated guide to the literature, associations, and institutions concerned with input, throughput, and output of data. Detroit: Gale Research Co., [1969]. 275 pp. $8.75. (Management Information Guide, 15)

This latest volume in the *Management Information Guide Series* should prove as useful as its predecessors, offering to those persons interested in or concerned with computers and data processing (and who now is not?) an organized and extensive survey of the basic and necessary source of available information. Thus the text is for the most part an annotated bibliography of pertinent references arranged in broad categories, each category prefaced with a paragraph or two of comment. This is in the style of Mr. Morrill's earlier contribution to the series, *Systems and Procedures Including Office Management*, 1967 and, in general, that of all the volumes of the series. Section 7 "Operating" is the largest category, some forty pages of references subdivided into "Manuals," "Digital Computers," "Data Transmission," "FORTRAN," "Software" and the like. Section 9, entitled "Front Office References," is of particular interest to the reference librarian, since it serves as a guide to desirable dictionaries, handbooks and abstracting services in the fields of automation and data processing.

Individual annotations are usually brief, informative and on occasion evaluative. They give evidence of considerable skill in the art of capsule characterization. The prefatory paragraphs and notes to each section characterize the particular topic as successfully and succinctly as do the individual annotations. The preface to Section 3, "Personnel," is particularly felicitous. Coverage is ample not only as to the subjects chosen but also as to numbers of references under individual subjects.

An important thirty pages of appendices lists additional sources of information — associations, manufacturers, seminars, publishers, placement firms, etc.—particularly valuable to the business man or government official as a desk or front-office reference book, although the librarian will also find it of value in providing specific information for his clientele.

In all, this is a highly competent and very welcome addition to the Series as well as to the ranks of special reference sources so necessary to the proper practice of the reference librarian's art. I think of Crane's *A Guide to the Literature of Chemistry* and White's *Sources of Information in the Social Sciences* and consider the author quite comfortable in their company as well as in that of his colleagues in the series. In addition, he evinces in his annotations and prefaces a wit, a turn of phrase and a capacity for direct statement that inform and delight the user. He displays an expertise in the fields of management and computer science, and one feels one can rely on his selection and judgment.

Eleanor R. Devlin

Cenralized Book Processing: A Feasibility Study Based on Colorado Academic Libraries by Lawrence E. Leonard, Joan M. Maier and Richard M. Dougherty. Metuchen, N.J.: Scarecrow Press, 1969. 401 pp. $10.00.

In October 1966 the National Seience Foundation awarded a grant to the University of Colorado Libraries and the Colorado Council of Librarians for research in the area of centralized processing. The project was in three phases. Phase I involved an examination of the feasibility of establishing a book-processing center to serve the needs of the nine state-supported college and university libraries in Colorado (which range in size from the University of Colorado, with 805,959 volumes as of June 30, 1967, to Metropolitan State College, a new institution with 8,310 volumes). Phase II involved a simulation study of the proposed center, while Phase III involved an operational book-processing center on a one-year experimental basis.

This book summarizes the results of the first two phases of the study. Phase I involved a detailed time-and-cost analysis of the acquisition, cataloging, and bookkeeping procedures in the nine participating libraries, with resultant processing costs per volume which are both convincing and somewhat startling, ranging as they do from $2.67 to $7.71 per volume. The operating specifications of the proposed book-processing center are then set forth and a mathematical model for simulating its operations under a variety of alternative conditions is prepared.

The conclusions are less than surprising: "A centralized book processing center to serve the needs of the academic libraries in Colorado is a viable approach to book processing." Project benefits are enumerated, in the areas of cost savings, time-lag reductions, and the more efficient utilization of personnel. Unfortunately, while many of the conclusions are buttressed by a dazzling array of tables and mathematical formulas (how can most librarians really argue with a regression analysis correlation coefficient matrix?), some of the most important savings cited are based on simple guesses, in some cases very simple guesses. To mention just two examples: 1) We are told that "a discount advantage expected through the use of combined ordering and a larger volume of ordering is conservatively estimated at 5% . . ." (Perhaps, but what is this based on?) 2) In the area of time lag reduction, "the greatest savings in time will accrue when the center is able to purchase materials from a vendor who has built up his book stock to reflect the needs of academic institutions. Up to now, vendors have been unwilling to do this because there is insufficient profit motive." Would nine libraries combining together change this profit picture?

It is unfortunate that this report could not have waited on Phase III, the completion of the one-year trial of the operational center which was to have been ready in August 1969, so that we could see just how the predictions for the center worked out in practice. As it stands, however, the

book is a valuable study in library systems analysis and design, and its identification and quantification of the various technical processing activities can yield real benefits to librarians everywhere, be they ever so decentralized.

Norman Dudley

A Guide to a Selection of Computer-Based Science and Technology Reference Services in the U.S.A., American Library Association, Chicago, Illinois, 1969, 29 pages. $1.50.

This *Guide* is an attempt to bring together those reference publications which are also available in machine readable form. As a "selection" it is limited to eighteen sources from government, professional and private organizations.

The *Guide* is the result of a survey undertaken in 1968 by the Science and Technology Reference Services Committee of the American Library Association Reference Services Division. The committee was composed of Elsie Bergland, John McGowan, William Page, Joseph Paulukonis, Margaret Simonds, George Caldwell, Robert Krupp and Richard Snyder.

Each entry is broken down into three units: 1) the Characteristics of the Data Base, 2) the Equipment Configuration and 3) the Use of the File.

Subject headings under Characteristics of the Data Base include subject matter, literature surveyed, types of material covered, etc. The Equipment Configuration section describes computer model, core, operating systems, and programming language. The Use of the File section covers potential uses of the data base by the producer and the subscriber.

Unfortunately for publications of this sort, they become out of date rather quickly. The continuing series, *The Directory of Computerized Information in Science and Technology,* is updated periodically and is a very useful reference tool in this field.

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Gerry D. Guthrie

ORTHOGRAPHIC ERROR PATTERNS OF AUTHOR NAMES IN CATALOG SEARCHES

Renata TAGLIACOZZO, Manfred KOCHEN, and Lawrence ROSENBERG: Mental Health Research Institute, The University of Michigan, Ann Arbor, Michigan

An investigation of error patterns in author names based on data from a survey of library catalog searches. Position of spelling errors was noted and related to length of name. Probability of a name having a spelling error was found to increase with length of name. Nearly half of the spelling mistakes were replacement errors; following, in order of decreasing frequency, were omission, addition, and transposition errors.

Computer-based catalog searching may fail if a searcher provides an author or title which does not match with the required exactitude the corresponding computer-stored catalog entry (1). In designing computer aids to catalog searching, it is important to build in safety features that decrease sensitivity to minor errors. For example, compression coding techniques may be used to minimize the effects of spelling errors on retrieval (2, 3, 4). Preliminary to the design of good protection devices, the application of error-correction coding theory (5, 6, 7) and data on error patterns in actual catalog searches (8, 9) may be helpful.

A recent survey of catalog use at three university libraries yielded some data of the above-mentioned kind (10). The aim of this paper is to present and analyze those results of the survey which bear on questions of error control in searching a computer-stored catalog.

In the survey, users were interviewed at random as they approached the catalog. Of the 2167 users interviewed, 1489 were searching the catalog for a particular item ("known-item searches"). Of these, 67.9% first entered the catalog with an author's or editor's name, 26.2% with a title, and 5.9% with a subject heading. Approximately half the searchers had a written citation, while half relied on memory for the relevant in-