

10-1-1963

## Special Libraries, October 1963

Special Libraries Association

Follow this and additional works at: [https://scholarworks.sjsu.edu/sla\\_sl\\_1963](https://scholarworks.sjsu.edu/sla_sl_1963)

 Part of the [Cataloging and Metadata Commons](#), [Collection Development and Management Commons](#), [Information Literacy Commons](#), and the [Scholarly Communication Commons](#)

---

### Recommended Citation

Special Libraries Association, "Special Libraries, October 1963" (1963). *Special Libraries, 1963*. 8.  
[https://scholarworks.sjsu.edu/sla\\_sl\\_1963/8](https://scholarworks.sjsu.edu/sla_sl_1963/8)

This Magazine is brought to you for free and open access by the Special Libraries, 1960s at SJSU ScholarWorks. It has been accepted for inclusion in Special Libraries, 1963 by an authorized administrator of SJSU ScholarWorks. For more information, please contact [scholarworks@sjsu.edu](mailto:scholarworks@sjsu.edu).

# SPECIAL LIBRARIES

OCTOBER 1963, VOL. 54, NO. 8

EDUCATION FOR

SPECIAL LIBRARIANSHIP:

Ways, Means, Pros, and Cons . . .

Publishers' Catalogs . . . UN Library

Interlibrary Loans

# SPECIAL LIBRARIES ASSOCIATION

*Putting Knowledge to Work*

## OFFICERS

- President  
 MRS. MILDRED H. BRODE  
*David Taylor Model Basin, Washington, D. C.*
- President-Elect  
 WILLIAM S. BUDINGTON  
*The John Crevar Library, Chicago, Illinois*
- Advisory Council Chairman  
 CHARLES ZERWEKH, JR.  
*Standard Oil Company (New Jersey), New York, New York*
- Advisory Council Chairman-Elect  
 MRS. ELIZABETH M. HUTCHINS  
*Young & Rubicam, Inc., New York, New York*
- Treasurer  
 RALPH H. PHELPS  
*Engineering Societies Library, New York, New York*
- Immediate Past-President  
 ETHEL S. KLAHRE  
*Federal Reserve Bank of Cleveland, Cleveland, Ohio*

## DIRECTORS

- HELENE DECHIEF (Secretary)  
*Canadian National Railways,  
 Montreal, Quebec*
- JOAN M. HUTCHINSON  
*Research Center, Diamond Alkali  
 Company, Painesville, Ohio*
- PAUL W. RILEY  
*College of Business Administration,  
 Boston College, Chestnut  
 Hill, Massachusetts*
- MRS. ELIZABETH B. ROTH  
*Standard Oil Company of Califor-  
 nia, San Francisco, California*
- MRS. DOROTHY B. SKAU  
*Southern Regional Research Lab-  
 oratory, U.S. Department of Agri-  
 culture, New Orleans, Louisiana*
- EDWARD G. STRABLE  
*J. Walter Thompson Company  
 Chicago, Illinois*

EXECUTIVE DIRECTOR: BILL M. WOODS  
 Special Libraries Association, 31 East 10 Street, New York 3, New York

## MEMBERSHIP

Dues: *Sustaining*—\$100; *Active*—\$20 (*Paid For Life*—\$250); *Associate*—\$20; *Affiliate*—\$15; *Student*—\$2; *Emeritus*—\$5. For qualifications, privileges and further information, write Special Libraries Association.

THE 55TH CONVENTION WILL BE AT SHERATON-JEFFERSON HOTEL, ST. LOUIS, MISSOURI, JUNE 7-11, 1964

## PUBLICATIONS

Aviation subject headings, 1949 . . . . .	\$1.75	National insurance organizations in the United States and Canada, 1957 . . . . .	3.50
A checklist for the organization, operation and evaluation of a company library, 1960 . . . . .	2.00	Picture sources: an introductory list, 1959 . . . . .	3.50
Contributions toward a special library glossary, 2nd ed., 1950 . . . . .	1.25	SLA directory of members, as of October 21, 1960 . . . . .	members 2.00 nonmembers 5.00
Correlation index document series & PB reports, 1953 . . . . .	10.00	*SLA directory of members, as of October 15, 1962 . . . . .	members 2.50 nonmembers 6.00
Creation & development of an insurance library, rev. ed., 1949 . . . . .	2.00	Source list of selected labor statistics, rev. ed., 1953 . . . . .	2.00
*Dictionary of report series codes, 1962 . . . . .	12.75	Sources of commodity prices, 1960 . . . . .	5.00
*Directory of business and financial services, 1963 . . . . .	6.50	Special Libraries Association—its first fifty years, 1909-1959, 1959 . . . . .	2.50
Directory of special libraries, 1953 . . . . .	5.00	Special Libraries Association personnel survey 1959, 1960 . . . . .	1.00
Guide to metallurgical information (SLA Bibliography no. 3), 1961 . . . . .	4.00	*Special libraries: how to plan and equip them (SLA Monograph no. 2) 1963 . . . . .	5.55
*Guide to Russian reference and language aids (SLA Bibliography no. 4), 1962 . . . . .	4.25	Subject headings for aeronautical engineering libraries, 1949 . . . . .	4.00
*Guide to special issues and indexes of periodicals, 1962 . . . . .	5.75	Subject headings for financial libraries, 1954 . . . . .	5.00
Handbook of scientific and technical awards in the United States and Canada, 1900-1952, 1956 . . . . .	3.00	Translators and translations: services and sources, 1959 . . . . .	2.50
*Literature of executive management (SLA Bibliography no. 5) 1963 . . . . .	4.25	U. S. sources of petroleum and natural gas statistics, 1961 . . . . .	6.00
Map collections in the U. S. and Canada: a directory, 1954 . . . . .	3.00		

### \* Latest publications

SCIENTIFIC MEETINGS—Subscription, \$7.00; Foreign, \$8.00

SPECIAL LIBRARIES—Subscription, \$10.00; Foreign, \$11.00; Single copies, \$1.50

TECHNICAL BOOK REVIEW INDEX—Subscription, \$10.00; Foreign, \$11.00; Single copies, \$1.50

UNLISTED DRUGS—Subscription, \$15.00

*SLA serves as the U.S. sales agent for selected Aslib publications*

SPECIAL LIBRARIES is published by Special Libraries Association, monthly September to April, bimonthly May to August, at 73 Main Street, Brattleboro, Vermont 05302. Editorial Offices: 31 East 10th Street, New York, New York 10003. Second class postage paid at Brattleboro, Vermont.

POSTMASTER: Send Form 3579 to Special Libraries Association,  
 31 East 10 St., New York, N. Y. 10003

# COMPLETE XEROX® COPY-FLO REPRODUCTION SERVICES

- MANUSCRIPTS
- BOOKS
- THESES
- PERIODICALS
- REPORTS
- SHORT-RUN PUBLICATION

Micro Photo has been producing high-quality Xerox Copy-Flo reproductions for libraries since 1959. Our modern laboratory and technical staff are particularly well equipped to produce all types of Xerox Copy-Flo reproductions quickly and at reasonable costs. Send us your material or microfilm . . . we will be happy to quote prices.

*Write for FREE Copy . . .*

A chart is available which will be helpful in ordering Xerox reproductions and preparing microfilm for Xerox reproduction. Complete pricing schedule included.

## Xerox® Reproductions Supplied:

- .... From typed or printed material
- .... From your microfilm or original material
- .... On a variety of paper or card stock as well as offset masters

In single-sided format or by Micro-Photo's DUOPAGE method of reproducing on both sides of a sheet.

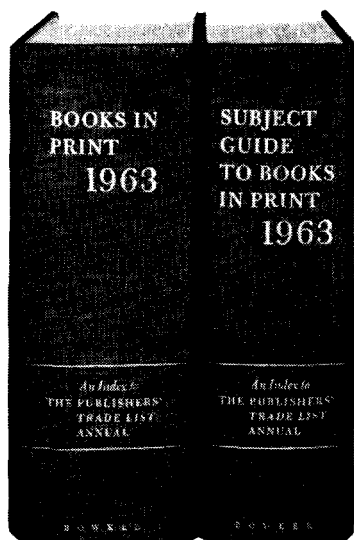
Available in soft cover and hard cover bindings.

**MICRO PHOTO** DIVISION  
**BELL & HOWELL COMPANY**

1700 SHAW AVENUE • CLEVELAND 12, OHIO

SPECIAL LIBRARIES

Order your new  
1963  
**SUBJECT GUIDE**  
and  
**BOOKS IN PRINT**



**H**ere's the new 1963 *Books In Print* — the first place to look when you're looking for a book. It lists over 164,000 books from over 1400 publishers—hard-bound, paperbacks, trade and textbooks in separate author and title indices. You'll get price, publisher, author, title, series, edition, and other pertinent information — including forthcoming titles.

**S***ubject Guide* is the complement to *Books In Print*, listing all the books found in "BIP" that can be classified according to the Library of Congress subject headings. When you've forgotten a title or an author's name, or when you want a handy reminder of books available in certain areas, *Subject Guide* is the place to look. Complete ordering information as in "BIP."

**T**ogether, these two volumes offer you a unique, specific listing of the current books available from just about every U.S. publisher. Order your new editions today.

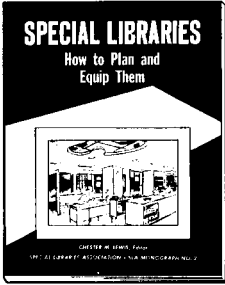
Books In Print — \$18 net pp.      Subject Guide — \$17.50 net pp.  
both ready in October

**R. R. BOWKER COMPANY**

1180 Avenue of the Americas

New York 36, N.Y.

OCTOBER 1963



## SPECIAL LIBRARIES: HOW TO PLAN AND EQUIP THEM

SLA Monograph No. 2

A Project of the New York Chapter

**Chester M. Lewis, Editor**

128 pages    illustrated    1963    \$5.55

Public, school, and university librarians and administrators as well as special librarians will find here facts and figures on space requirements, layout, furniture, shelving, special equipment, preliminary planning, remodeling, moving procedures, and other aspects of producing a functional, efficient, and attractive library. Ten case histories, most of which have been reprinted from the "Planning the New Library" series in *Special Libraries*, describe many types and sizes of actual special libraries and include floor plans, photographs, and statistics. There is a handy checklist for planners, an annotated bibliography, a directory of manufacturers and suppliers, and a detailed subject index. Each chapter was prepared by an individual who is experienced and knowledgeable in his field. The Editor is the Chief Librarian of the New York *Times*.

**SPECIAL LIBRARIES ASSOCIATION, 31 East 10th St., New York 10003**

*Now*

*Available*

## LANDOLT-BÖRNSTEIN

Zahlenwerte und Funktionen

*Sixth Edition by*

J. D'Ans, P. ten Bruggencate, A. Eucken, G. Joos, W. A. Roth

*Edited by*

J. Bartels, H. Borchers, H. Hausen, K. H. Hellwege  
K. L. Schaeffer and E. Schmidt

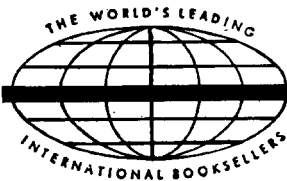
VOLUME FOUR · TECHNIK

Part 2a

Stoffwerte und Verhalten von metallischen Werkstoffen

*Grundlagen, Prüfverfahren, Eisenwerkstoffe*

900 pages. 1393 illustrations. Bound. 1963. \$117.00

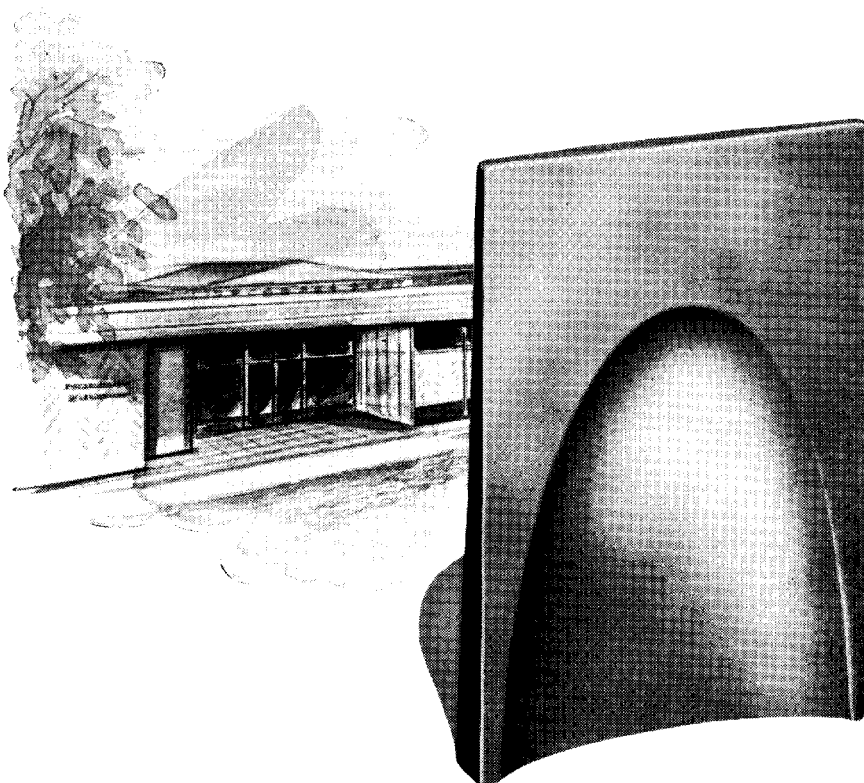


## Stechert-Halner, Inc.

FOUNDED IN NEW YORK 1872

LONDON / PARIS / STUTT GART / BOGOTA  
31 East 10 Street / New York 3, N. Y.

SPECIAL LIBRARIES



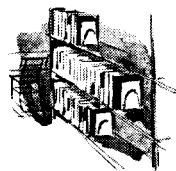
## *Colorful-Practical*

### **GAYLORD PLASTIC BOOK SUPPORTS**

You'll like these fine supports for display as well as shelf use. Five colors in high-impact styrene—desert sand, stone gray, red, black, jade green. They are both light and strong. Modern design is as functional as it is good looking: won't get lost, can't knife or tear books.

Order in standard and oversize with plain, cork or urethane base. From \$.36 each, quantity prices on request.

Write for full details and complete prices.



✿ *Friendly service, dependable quality—since 1896*

# **Gaylord Bros., Inc.**

SYRACUSE, N. Y.

**LIBRARY SUPPLIES**  
STOCKTON, CALIF.



SPECIAL LIBRARIES

# an-nounc'ing...

## Technical Meetings Index

Volume I

Number 1

- An Interdisciplinary index of technical, scientific, and medical meetings • Published quarterly

The current issue of the *Technical Meetings Index* includes information on over 500 meetings taking place from September 1963 to August 1965. Meetings sponsored by over 300 technical, scientific, and medical organizations are covered. Data supplied include:

- Name, date, and headquarters of meeting
- Sponsor of meeting
- Technical content of meeting
- Estimated attendance
- Deadlines for abstracts and papers
- Exhibits information

The publication is indexed by technical content, date of meeting, deadline for abstracts or papers, location of meeting, and sponsor of meeting. A coordinate indexing system is used to give ready access to the information.

---

The *Technical Meetings Index* is available as part of the subscription to *Technical Meetings Information Service*. The subscription includes, in addition to the *Index*, a quick-reaction service providing calls for papers for technical, scientific, and medical meetings. Total price of the service is \$25 per year, \$35 foreign. Send the coupon below for detailed information.

---

### MAIL THIS COUPON FOR DESCRIPTIVE FOLDER

Technical Meetings Information Service, Dept. A  
22 Imperial Drive, New Hartford, New York

( ) Please send descriptive folder

( ) Enclosed is \$..... for 1 yr. subscription, on a 4 week approval basis.

Name .....

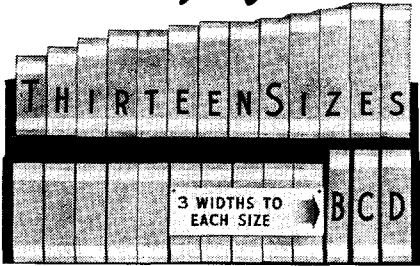
Company .....

Address .....

City ..... State .....



# Magafiles



## LOW COST PERIODICAL AND PAMPHLET FILES

ALL SIZES SAME PRICE

\$3.18 per doz. any assortment desired.  
12 doz. or more, \$2.88 per doz.

FREE SAMPLE MAGAFILE sent upon request. You will receive it by return mail along with handy size-chart and additional details. No obligation or salesman follow-up.

*Magafiles sell themselves*

**THE MAGAFILE CO.**  
P. O. BOX 3121 • ST. LOUIS 30, MO.

Expert Service on

**MAGAZINE SUBSCRIPTIONS**

for

**SPECIAL LIBRARIES**

•

**Faxon's Librarians Guide**

*Free on request*

•

For the very best subscription service  
—ask about our Till Forbidden Auto-  
matic Renewal plan.

•

**F. W. FAXON CO., INC.**

83-91 Francis Street

Boston 15, Mass.

*Continuous Service To Libraries Since 1886*

## 1963 WESCON TECHNICAL PAPERS

*Available Exclusively Through*

**WESTERN PERIODICALS CO.**

A compilation of technical papers presented at the Western Electronic Show and Convention, held in San Francisco, August 20-23 by the Los Angeles and San Francisco Sections of the IEEE and the Western Electronic Manufacturers Association.

**Volume 7—7 Parts—78 Papers**

**\$43.00**

Subjects included: Antennas, Circuit Theory, Electron Devices, Automatic Control, Electronic Computers, Information Theory, Component Parts, Product Engineering, Communications, Space Electronics and Instrumentation.

*Also Available:*

1962 WESCON TECHNICAL PAPERS (8 Parts—67 Papers)	Vol. 6	\$37.50
1961 WESCON TECHNICAL PAPERS (114 Papers)	Vol. 5	\$85.00
PERMUTED INDEX TO WESCON PAPERS	1957-62	\$14.75

Standing Orders Accepted

Write for complete catalog of publications available

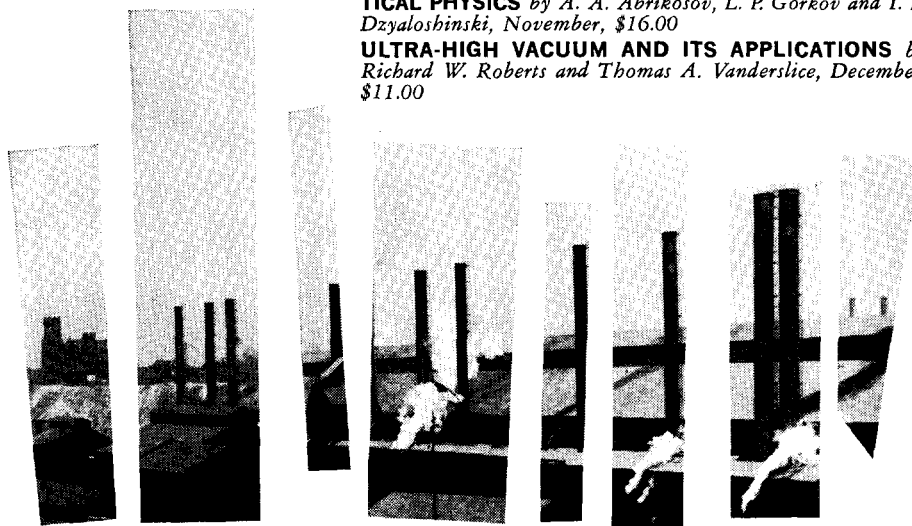
**WESTERN PERIODICALS CO.**

**13000 Raymer St., North Hollywood, Calif. TRiangle 5-0555 STate 2-2192**

SPECIAL LIBRARIES

*New*  
**BUSINESS**  
 and  
**TECHNICAL**  
 books  
 from  
*Prentice-*  
*Hall,*  
*Inc.*

ENGLEWOOD CLIFFS, N. J.



**ENCYCLOPEDIA OF TAX SHELTER PRACTICES** by *The Prentice-Hall Staff of Tax Editors, Ready, \$29.95*

**ADMINISTRATIVE ACTION: The Techniques of Organization and Management, 2nd Ed.** by *William H. Newman, Ready, \$11.35*

**GRANVILLE'S NEW KEY TO STOCK MARKET PROFITS** by *Joseph E. Granville, November, \$12.50*

**THE EXECUTIVE LEADERSHIP COURSE** by *The Prentice-Hall Editorial Staff, December, 6 volumes, \$41.95*

**EXECUTIVE'S LIFETIME IDEAS LIBRARY** by *The Prentice-Hall Editorial Staff, December, 2 volumes, \$19.50*

**THE LAWYER'S ENCYCLOPEDIA** by *a group of 45 noted United States attorneys, with The Prentice-Hall Staff of Law Editors, December, \$29.95*

**THE PRENTICE-HALL LIFETIME ENCYCLOPEDIA OF SELLING IDEAS** by *Charles B. Roth, December, 2 volumes, \$19.95*

**CONCEPTS IN MANAGEMENT SCIENCE** by *Donald L. Clough, Ready, \$12.00*

**INDUSTRIAL SCHEDULING**, edited by *J. F. Muth, G. L. Thompson, with the collaboration of P. R. Winters, Ready, \$11.95*

**APPRAISING MANAGEMENT METHODS AND PERFORMANCE** by *Stephen R. Michael, November, \$15.00*

**TRANSISTORS: A Self-Instructional Programed Manual** by *Federal Electric Corporation (ITT), Ready, \$12.00*

**ELEMENTS OF TELEVISION SERVICING FOR BENCH AND FIELD, 2nd Ed.** by *Abraham Marcus and Samuel Gendler, Ready, \$9.50*

**THE SCIENCE-ENGINEERING SECRETARY: A Guide to Procedure, Usage, and Style** by *Alison R. Stafford and Billie Jean Culpepper, November, \$8.65*

**ENVIRONMENTAL TECHNOLOGIES IN ARCHITECTURE** by *Bertram Y. Kinzey, Jr. and Howard M. Sharp, Ready, \$16.00*

**LAW AND SPECIFICATIONS FOR ENGINEERS AND SCIENTISTS** by *W. Edgar Jessup and Walter E. Jessup, Ready, \$13.00*

**METHODS OF QUANTUM FIELD THEORY IN STATISTICAL PHYSICS** by *A. A. Abrikosov, L. P. Gorkov and I. E. Dzyaloshinski, November, \$16.00*

**ULTRA-HIGH VACUUM AND ITS APPLICATIONS** by *Richard W. Roberts and Thomas A. Vanderslice, December, \$11.00*

CATALOG AND APPROVAL COPIES AVAILABLE: LIBRARY DIVISION, BOX 500E

**yesterday it didn't exist**

**today  
scientists can possess  
the most powerful tool  
for information searching  
ever developed**

**we call it  
SCIENCE CITATION INDEX**

**write us for  
complete  
information**

Please send details on Science Citation Index <sup>26</sup>

Name \_\_\_\_\_ Title \_\_\_\_\_

Organization \_\_\_\_\_

Address \_\_\_\_\_

INSTITUTE FOR SCIENTIFIC INFORMATION 33 SOUTH SEVENTEENTH STREET PHILADELPHIA 3, PA.

# SPECIAL LIBRARIES

*Official Journal*  
*Special Libraries Association*

Volume 54, No. 8

## CONTENTS

OCTOBER 1963

Education and the Future	GRIEG ASPNES	487
The Pierian Spring	ESTELLE BRODMAN	488
Is the Traditional Library School Meeting the Needs of the Profession?—Two Viewpoints	RUTH WARNCKE AND RICHARD A. DAVIS	493
New Dimensions in Library Education—The Training of Science Information Personnel	ALAN M. REES	497
Bookman, Information Expert, Documentalist—How Library Schools Meet the Challenge	NEAL R. HARLOW	503
Directions for Library Education	DR. ROBERT HAYES	508
Shoulds, Shouldn'ts—Further Comments on Library Education	DR. STUART BAILLIE	510
The Folklore of Special Library Education	L. H. LINDER	511
The Education of Metals Librarians	MRS. DORIS H. BANKS	512
The Educational Needs of Technical Librarians	MRS. GRETCHEN S. KORIAGIN	512
The Education of the Library Staff and the Library User	MRS. CLAIRE K. SCHULTZ	513
Things They Don't Teach in Library School	JOHN GADDIS	514
Use of a Publishers' Catalog File in a Special Library	ERNEST MAASS	517
Interlibrary Loan Work at The United Nations	LESLIE WILSON	522
Aslib	GLADYS T. PIEZ	525
Library Technology Project Report	LORETTA J. KIERSKY	526
Developments in Document Reproduction	MRS. ELIZABETH R. BOUTINON	528
This Works For Us: Mobile Equipment	RICHARD A. EVANS	529
Planning the New Library: Applied Physics Laboratory, The Johns Hopkins University		
SPECIAL LIBRARIES ASSOCIATION		
Sustaining Members		502
SLA Special Classifications Center		521
NEWS		
Have You Heard		496, 533
Off The Press		535
Spotted		524

*Editor:* MARY L. ALLISON  
*Assistant Editor:* EDYTHE C. PORPA  
*Consultants:* ALBERTA L. BROWN  
DR. I. A. WARHEIT

SPECIAL LIBRARIES COMMITTEE  
*Chairman:* ROBERT G. KRUPP  
ELEANOR KATHLEEN IRWIN  
JEANETTE SLEDGE

*Papers published in SPECIAL LIBRARIES express the views of the authors and do not represent the opinion or the policy of the editorial staff or the publisher. Manuscripts submitted for publication must be typed double space on only one side of paper and mailed to the editor. ● Reprints may be ordered immediately before or after publication. ● Subscriptions: U. S. \$10; foreign, \$11; single copies, \$1.50. © by Special Libraries Association 1963.*

INDEXED IN *Business Periodicals Index, Public Affairs Information Service, Library Literature, Business Methods Index and Library Science Abstracts.*

# However you compare them *microfilm* is more *practical* more *economical*



Prudent library management calls for a good, hard look at the yearly *cumulative* costs of binding and storing periodical backfiles. Reference service in this important area has been modernized for economy just as other library methods.

University Microfilms of periodicals cost no more than binding. They can be stored for only 3¢ a year — compared to \$.50 each year for bound volumes — *in 94% less space.*

Publishers of over 1800 leading periodicals cooperate to make their publications available on film. Send for Catalogue 14 for cumulative list, subject index, and prices.

## Among Recent Additions

Philosophical Quarterly  
Recreation  
Yale Economic Essays  
Literary Review  
Political Science Quarterly  
Sky and Telescope  
Parent's Magazine  
American Home  
S.A.E. Journal

## New, Expanding Libraries

Almost all your backfile needs can be met this modern microfilm way. You get maximum savings on reference materials and storage space right from the start.



**UNIVERSITY MICROFILMS, INC.**  
313 N. FIRST STREET, ANN ARBOR, MICHIGAN  
SUBSIDIARY OF XEROX CORPORATION

SPECIAL LIBRARIES

# Education and the Future

"The present library school curriculum is shallow."

"The one-year graduate program is too brief. It should be at least two years."

"Too much so-called library school education has been the teaching of techniques of cataloging and classification, rather than education in their principles."

"The total number of library school graduates each year who also have a degree in science or technology is not enough to fill the needs of the federal agencies in Washington, D. C. alone."

"About 85% of all our graduates take jobs in public, college, school or other general libraries. Our schools cannot afford the money and staff needed for the small number who want special training."

These are a few sample comments voiced by speakers and participants in the education programs given at the SLA Convention in Denver last June. Based on the Convention theme "Continuing Education for Special Librarianship," two general sessions, various Division programs, and the Advisory Council meeting discussed the basic problems—the field of special librarianship is expanding and changing rapidly; we do not have enough people properly trained and educated to handle the great complex needs of today; tomorrow's needs will be even greater and far more complex. Who will provide the properly qualified people to satisfy these needs?

If you are an "old-timer" in this business, with the end of your career within view, you owe a debt to your profession. You have a responsibility to return to it some of the experience you have gained so that others, starting as you did, may benefit from what you have learned.

If you are a relative "youngster"—your formal education only a few years past—you have an idea how well that education prepared you for the work you are now doing.

If you are a "middle-ager"—midway between school and retirement—you can see the changes that have come to special librarianship since you began; you want to know what new trends the future may bring.

Whatever your age or experience, you should find many stimulating ideas in this issue of *Special Libraries*. You will not agree with all the points of view expressed. You may not agree with any of them. But what you think, what you have learned, can help determine future trends in education for special librarianship.

If SLA is to help the library schools produce the special librarians needed for the future, SLA will need the benefit of your thoughtful comments. You can send them to the Editor of *Special Libraries*, to your President, Mrs. Mildred H. Brode, to the SLA Education Committee, or through your Chapter or Division to the Board of Directors or Advisory Council.

GRIEG ASPNES, Chairman  
SLA Education Committee

# The Pierian Spring

ESTELLE BRODMAN, Ph.D., Librarian and Associate Professor of Medical History  
Washington University, School of Medicine, St. Louis, Missouri



**L**IBRARIANS in the past few years have found themselves attacked from all sides, and within themselves have been assailed by doubts and fears, which have transcended the experiences of most of their predecessors. On the one hand we have been told that we were obsolescent, if not already obsolete, and that if we didn't watch out the "documentalists" would gobble us all up. On the other hand, we have been made to realize our lowly positions by the difficulties with which our paths to more adequate budgets are beset. We have been scolded for being too timid, too conservative, and too negative in our thinking, yet we have seen our colleagues waging bitter battles for freedom of reading against odds that might seem overwhelming. "Systems engineers" have answered our questions about their products with sneers that we are incapable of understanding what they are doing and that our administrative superiors would soon see to it that we were superseded in fact, as we already were in intellect.

Nor are we at all sure—after such repeated assaults—but that the things they say about us might not perhaps be true. After all we cannot obtain money for a new cataloger or some decent typewriters, while the machine men gaily add to their staffs, their budgets, and their prestige without apparent care. Our administrators, fresh from a four-day push conference arranged and paid for by a firm selling "hardware," ask us about "descriptors," "indicia," and "subject tags" or the possibility of a "thesaurus," "referencing," and "codes," as if these things had no relation to our time-honored "subject headings," "classification schemes," or "see" and "see also" cross references.

Keynote address presented at the 54th Annual SLA Convention in Denver, June 10, 1963.

Amidst all this jargon and glamor, we cannot help but consider sadly the fate of the dodo and the American Indian as we contemplate how little we are reproducing our kind. With the recruiting statistics what they are, could it be that we will soon be biologically extinct? Will the deluge come after us, or will we ourselves be swept away in its tide within the easily foreseen future?

I do not for a moment believe in this gloomy, fearful picture! In my opinion librarians are as much here to stay as is sex. We might call our supporting appendages "limbs" instead of "legs," and we may have "liver complaint" instead of a "pain in our bellies," but legs and bellies, by whatever euphemism, are likely to be with us for some time to come. Indeed, I might put it more forcefully: the world *needs* legs and bellies, and calling the janitor the building superintendent or the Librarian the Information Director is not going to change the purpose of their being.

Instead, therefore, of lecturing about how you must do this or that to survive; instead of offering you eternal fire and brimstone unless you reform; instead of blaming you for the "image" of the librarian, I should like to talk about what I think librarianship really is, how it arrived at the place it is today, and what—to me, at any rate—it seems likely it will develop into in the future.

## Change Is a Fact of Life

I do this because, as a student of history, I find that a study of the past often illuminates the meaning of the present and indicates logical possibilities for the future, thus presenting a chance to prepare for that future in a realistic and meaningful way. A study of mankind's past shows that little has come forth spontaneously, by a kind of genetic mutation, but that almost everything has developed from seeds of the past. Virchow's "Omnia cellula ex cellula" is thus a universal truth, not merely a biological one.

The history of anatomical changes in such biological entities as the camel's hump, the horse's hoof, or the human hand shows that changes have generally been slow and developmental, in a pattern that is not so fixed but that alterations in one part of the chronological growth could, and did, trigger changes in other places and at other times. Since, in its largest sense, human society is a biological entity, it is reasonable to find that in all the recorded history of man on this planet change in societies has generally been as slow, developmental, and varied as that in more narrowly defined biological phenomena.

As Heraclitus first pointed out two millennia ago and as modern science has reiterated, all living matter is in a constant state of change and flux. At no moment in time is any organic substance just as it was a moment past nor just as it will be a moment hence. To stop changing is to stop living—and perhaps in the new physics of indeterminate action and the Brownian movement of atomic particles, even for inorganic matter, there is ceaseless change. At any rate, for biological phenomena change is a *sine qua non* of life, and death can and has been equated with fixation, the stopping of time in its flight.

If then, change is ceaseless and characteristic of life, we should not be surprised that librarianship has changed and continues to change from moment to moment. Were it not so, were we in a stasis, we would be dead—indeed, is this not the charge levelled against us by many: that we are intellectually dead? And is that charge not partially true for some of our colleagues who resist the changes circumstances have brought to librarianship recently? . . .

But while we accept change as normal, we also feel that it is not good for people to change too rapidly. Except for religious conversions, we hold that for the most part there should be an orderly and gradual alteration in human behavior, so that the person changing and those about him can each become accustomed to the differences. This is important because we must understand what is happening, else we are unsure of things. . . . What we do not understand we fear.

Is this, perhaps, not the crux of our trouble about present-day librarianship—that it is changing so rapidly that we cannot grasp all of the changes intuitively? With a lack of understanding of the phenomenon, with an apparent lack of orderly growth and change, comes the fear of the unknown. So we fear the new and we try to negate it in an attempt to remain in our well-known, comfortable, and understood milieu, both in our professional existence and in our everyday living.

We are not the first generation to be involved in far-reaching, rapidly-developing changes in technology and society. For instance, the discovery of the means of extracting iron ore in the sixth city at Crete is said to have meant the destruction of the bronze-armored native rulers and army and the introduction of Greek forms of life. . . . Perhaps the most far-reaching technological-then-sociological change for which we have extensive documentation was the Industrial Revolution. There a number of influences came into play. The introduction of machines caused the product turned out to be so profitable it made uneconomical the former cottage industries, where each man could work for himself. Efficient machines required fewer people to do the same amount of work. Moreover, the machines were so expensive that large amounts of capital were required to purchase them and few individuals could afford them. This meant immediately a division of the populace into capital and labor. Further, once a group of machines was brought together, then the people to work them were required, and so previously agricultural countries began to see the growth of urban populations and the problems of mass sanitary and social needs. The changes in clothing, shelter, and food at this time are well known, and the miseries of human beings caught up in this changing technology were only too graphically described by 19th century writers. . . .

Let me remind you how people reacted to such mass changes. After the first unawareness passed off, workers tended, in their frustration, to revolt destructively. Wooden sabots and sand were hurled at the machines by the Luddites: clearly a case of synecdoche, where



the means were taken for the end, the part for the whole. Bloody brutalities were inflicted by both laborers and those in power, without solving the fundamental problems of how to preserve the decencies of humanity in a situation so different from the past that principles neither of economics nor ethics could be carried over.

What have been the results of the introduction of machines into our culture? Over the years more training has been demanded for practically all labor, but in return we have probably achieved a mass standard of living more compatible with humane life than has ever been possible before on so large a scale. These advances did not come quickly and easily, and it, therefore, behooves us as thoughtful human beings to study the chronicles and see if we cannot attain in our changing technology as good or better results, but without the cycle of destructive tendencies of the earlier period. Machines, after all, are merely means to an end, not the ends themselves. I believe they can bring about a better life only if we neither fear the new means for librarianship nor deify them; we must refrain from throwing our boots or our sand buckets at computers and punched card sorters, yet not ignore them. Our present task, it appears to me, is to learn to understand our new tools, to use them to further the goals for librarianship to which we all subscribe and which have not changed, and to develop, if need be, a new dimension in our calling, which will bring us the increased humanity of a society of adults, not children.

### Learning Is a Pleasure

There is, of course, another reason for studying the changes in librarianship occurring all about us. I refer to the joy of knowing, the intellectual excitement of learning, the satisfaction of using our minds and our hearts to their fullest extent. We do not hear enough of this around us, and consequently we find ourselves embarrassed when the matter is mentioned—as if we were all Puritans to whom joy was sinful and joy in one's work especially sinful. Was it not part of the sentence of expulsion from the Garden of Eden that we were to go forth and

toil in the sweat of our brow? Yet, after all, for what do we labor?

Albert Szent-Gyorgyi, the Hungarian Nobel Prize winner in biology for 1937, expressed it well. "If any student comes to me," he explained, "and says he wants to be useful to mankind and go into research to alleviate human suffering, I invariably advise him to go, rather, into charity. Research wants egotists, real egotists, who seek their own pleasure and satisfaction,"\* and who find it in study. Learning is like that—long after the compulsions of school have passed, there remains the pleasure and satisfaction in the discovery of new truths—new to the person learning them, even if not to others. A young assistant I once knew used to exclaim delightedly when a new fact or concept was brought to her attention, "I never knew *that* before!" This joy in discovery, this enrichment of personality, is what I dangle before you when I urge you to continue to study and learn throughout your lives. . . . A rabbinical scholar exiled by Hitler once echoed Socrates in the *Phaedo* when he told me, "The Nazis took all my possessions, but what I had learned in my studies no one could take from me."

First and foremost, therefore, I urge you to learn about the new developments in our profession because the learning will be fun in itself. Secondly, I suggest you study these things because librarianship is now in a period of rapid change. If we are not to be overwhelmed by the fear of the unknown, we must make this unknown our known. Put more bluntly, I remind you that just as the Industrial Revolution ended with a demand for more training for laborers, so will automation in libraries end up by requiring more training from all who enter the library profession. Also, consider how highly trained people receive more wages than less highly skilled ones and cannot so easily be shunted around at other men's wills. They are masters of their environments, not slaves to it. And as masters of their environments, skilled workers can set aside time for even further study—and this brings us full-circle back to the joy of learning new things.

\* *New York Times Magazine*, July 30, 1961, p. 34, 36.

### Many Methods of Study Available

You may well ask, "How and what shall we study? Up to now you have talked in glittering generalities; now we should like specifics." This is a fair question and I shall try to answer it carefully.

Study can be job-oriented or it can be discursive learning, which may or may not fit the needs of a particular task. The Committee on Continuing Education of the Medical Library Association has recently come up with a list of means of continuing study essayed by a number of professions, including librarianship. This list is impressive by its length and diversity. Reading it, one may end up feeling every possible way of study and teaching has been tried somewhere by someone at sometime. Formal courses, informal study groups, discussions, films, film strips, syllabi, pamphlets, books, correspondence lessons, lectures, symposia, recordings, lantern slides, travel, exchanges of personnel, journals, projects—you name it, someone has done it. And what is more, they are almost all valuable methods.

The oldest form of continuing education is, of course, on-the-job training. Apprentices learned from their masters. Groups of workers coming together for a local fair or church celebration showed off their wares and their skills to each other, and all benefited. In the stress we have placed on formal study, we sometimes forget how much of mankind's learning has been the watch-and-imitate variety; devoid of theory, perhaps, but not always so and, in any case, very useful for technological study.

Still another ancient form of non-academic, individual study is reading. It seems unnecessary to stress the role of reading for learning to a group of librarians, who apparently are dedicated to the proposition that the printed word is capable of helping in problem solving, yet I am continually surprised at how little reading some of us do. Contemplating the level of some of what is published in our professional journals, however, perhaps that is not surprising. We librarians are caught up in that modern quantitative expansion of professional publication that is accompanied by a real qualitative loss.

I have said on another occasion, "All pro-

fessional organizations I know have meetings and publish some kind of magazine. Some of these meetings are unspeakably dull and some of the publications are a disgrace to a learned profession. But need they be? Is this not one of the most important places where the professional organization can aid substantially in the continuing education of its members? Could it not have speakers who tell something worth hearing and impart their glad tidings in such a manner that all can profit from their work? If the professional organization sets up standards for its speakers—and makes them adhere to them—it might end up with annual meetings that last only half as long as they do now, or four good local meetings a year instead of six or eight poor ones. Is that bad? I think not. Why should we glorify our annual 'vacation-by-the-colleagues-at-the-bar-of-the-convention-hotel' as education for our profession? Or if we think that the ideas and gossip found at such gatherings are an important part of our learning experiences (I, for one, do), then we might neatly divide our meetings into speeches that say something, and the bar-hotel lobby-bull session portion that gives us human knowledge.

"And . . . what about our professional journals? . . . Why can we not demand of our professional library organizations that they take the responsibility of continuing to educate us through the kind and level of the articles they publish? Do we really need any more 'How I run my library better than you run your library?' kind of article, or worse yet, the speech by the director of the company or the faculty member on the library committee, which informs us that without the library he could never get any of his work done and that librarians are badly underrated people? We need only look at the transformation wrought in the pages of *American Documentation* within the past few years to see what a good editor who is given a free hand and a certain amount of money can do in teaching his audience excitingly and interestingly."

But we do not need always to read journals that are narrowly labelled "librarianship." A whole live world exists and beckons to us from outside the confines of our disci-

pline. Ideas are exciting whether they refer to theories of classification, simplified computer techniques, urban renewal, or the "gee whiz" of space exploration; whether we study the inward insight of modern poetry, gardening, cooking, or man's relation to man. Why cramp our minds by literary avitaminosis when so extensive a fare awaits us? And who knows when such apparently extraneous information will enrich our understanding of problems more closely defined as "professional"? To put it another way, such learning is fun and it may even help us!

Of the more formal and traditional kinds of continuing education, the lecture and the academic course, a plethora of words has been written and spoken. The advantage of such education over self-education is the possibility of one mind's coming into close contact with another one—the old adage again of the best education being the student at one end of the log and Mark Hopkins at the other. Those of us who have sat at the intellectual feet of some stimulating teacher will always treasure the memory of the inspiration we imbibed along with the facts; but for too many people the possibility of stopping in mid-stream of their professional careers, as it were, to go on a pilgrimage to such a teacher is small.

How can this desirable end be brought about? I believe by excellent speakers at our annual library meetings but even more so by a library "Chautauqua circuit," where, under the aegis of universities or professional societies, teachers can be brought to students in local areas. The schools of agriculture in many land-grant colleges send forth extension course lectures, and some state medical schools see to it that their faculties "ride circuit" throughout their area and bring to local practitioners the best that is being thought and done in medicine. Why not the same thing in librarianship?

#### **What Special Librarians Can Study**

We can also look at the matter of study in another way. We can ask what will make us better librarians? *That* is what we should study. If, as I believe, special librarianship

is a system designed to bring together the inquirer and the fact he needs as usefully as possible, we might well study the ecology of inquirers, the characteristics of facts requested, and the degree of success of the means we have devised for contact between the two. We need to know what role librarianship now plays in society and what role it could play if it developed more imaginatively or from another point of view. Can society afford this outlay? Can society *not* afford it? How can society learn if what we offer is capable of doing what we claim for it?

None of this can be done in a hurry or by a group of people, and we are an impatient people. As Szent-Gyorgyi put it in the article quoted earlier, "Our trend is to replace creativity by numbers, quality by quantity. Our reasoning is analogous to saying that if one woman can produce a child in nine months, nine women will produce it in one." Gathering data, examining it, and drawing meaningful conclusions from it take time, hard thought, and devotion. It must be done by each person alone, in his office, at home, in the cafeteria line, and on the golf course; by one man, not by a committee or a commission. Thinking, like dying, is a lonely business.

We must not expect that insight into our problems will be sudden, immediate, or entire. Change is usually slow and developmental, and the best thought is flexible, with various paths—like computers, which at any bifurcation may choose one of two ways, depending upon previous responses. Librarianship will change as the conditions under which it labors change. Such change is good, a sign of vitality, and we should welcome it, not feel distressed by it. But to keep the changes under our control we must study the conditions around us and the means to reach our goals. Then, unafraid, capable of mastering the new situation, let us enjoy going forth to our daily labors.

"The way is hard," counsels the Talmud, "the task difficult, and the Master presses. The reward, however, is also great. . . . It is not incumbent upon thee to complete the work, but thou may not, therefore, cease from it."

# Is the Traditional Library School Meeting the Needs of the Profession?—Two Viewpoints

RUTH WARNCKE, Assistant Professor, School of Library Science  
Western Reserve University, Cleveland, Ohio

RICHARD A. DAVIS, Assistant Professor, Graduate School of Library Science  
Drexel Institute of Technology, Philadelphia

The following two papers were prepared for the General Session entitled "Library Education: A License to Learn," held at the 54th Annual Convention of Special Libraries Association in Denver, June 11, 1963. Miss Warncke was unable to attend so her paper was not presented.



IT MIGHT BE WISE for me to say at the outset that I cannot answer the question asked in the title of this brief paper, since I do not come from a traditional library school.

The Western Reserve Library School catalog bristles with the titles of courses that are not yet traditional—from machine literature searching and specialized information services to language engineering and numeric orientation to computers. Lest I fly under false colors, however, I shall confess that I teach materials selection, public library systems, and the library in the community.

In the spring of 1962, the Western Reserve Library School cosponsored with the U. S. Office of Education an Institute on the Future of Library Education. Present were about 90 representatives of all types of libraries, of graduate library schools, and of undergraduate departments of library science, coming from all parts of the United States. In the course of their discussions about the future of library education, they said many pertinent things about the present state of the art—some directly, and some by implication. Since the participants at this conference were thoughtful people, many of them working with or employing recent graduates of library schools, their conclusions seem of great importance, and I am glad to report them.

We should first, I think, clarify the purposes of the present fifth year programs, leading to the master's degree in library science. Occasionally I have the impression that this period of study for approximately 10 or 12 months is expected to prepare students for jobs that in any other field would require ten years of experience—and natural genius to boot. Actually, a realistic expectation is that graduates with the M.S. in L.S. degree shall have a sound knowledge of the philosophy, the methods, and the materials common to libraries of all types as well as an introduction to these aspects of a special field. Some students come with experience, and programs may be planned for them that will permit them to pursue their special interests in greater depth. All students are reminded frequently that this year of study is only the beginning of their professional education.

Some of the participants at the Institute felt that undergraduate programs should not be considered a substitute for graduate library education, but that the relationships between graduate and undergraduate programs should be more carefully defined, and articulation between the two levels should be implemented. Others, however, disagreed. They felt that candidates for graduate library schools should have a strong liberal education, with an academic subject major in a field other than library science. Perhaps to the extent that library schools admit people without sufficient strength in science, or the

social sciences, or the humanities, they are not meeting the needs of the field.

When the participants said that continuing education beyond the fifth year in a variety of formal and informal programs should be developed by library schools as well as by other agencies and professional organizations, I think that most of us in library education could say firmly, "We do that." Within the limits of time and space, most of the graduate schools respond to the needs of the profession, as the long lists of institutes, workshops, and conferences they sponsor will testify. No doubt we should do more.

A sharp reminder of a serious lack came with the recommendation that advanced professional education—apart from the doctorate—should be offered to prepare people for specialization within librarianship and should be recognized by the awarding of some credential at the completion of such study. This may be the answer to the unrealistic expectations concerning the master's program. Perhaps library schools should offer an additional semester, or a year, beyond the M.S. in L.S., to increase proficiency in special fields. Some programs, such as the sequence of law library courses offered at Washington, are in existence. Until we have them in many fields, the library schools may have to admit that they are not meeting the needs of the field.

When the participants indicated that people with competencies and specialties to meet new demands in the field should be recruited to faculties, it was apparent they felt that in too many instances, this had not yet been done. Incidentally, this recommendation came as often from school librarians as from special librarians. Teaching machines are as important as computers, and instructional materials centers as new as centers for information storage and retrieval.

A strongly supported recommendation, approved in a plenary session, read: ". . . the core program, consisting of that element of the curriculum basic to all specialties, should be strictly limited to the level of principle and the development of flexibility and judgment; . . . except where they are contextual to such content, techniques and skills are not proper objectives of such a basic program." A library school director formulated that rec-

ommendation. I suspect that it was more to support the position of most graduate schools than to suggest that they are wasting their time teaching what might better be learned on the job.

Over and over it was made clear that library schools are not making use of the newer, more effective teaching methods and that neither faculty nor students are engaging in enough research to change the present situation in which teaching is done or in which libraries are operated on an inadequate basis of tested information. We stood condemned, to a greater or lesser extent, but certainly more on the research issue than on that of teaching methods.

The answer to the question—and let's leave out the word traditional—"Is the library school meeting the needs of the profession?" is *of course not*. On the whole, the schools turn out some pretty effective people, but it is on a beginning level. Faculties have to run to catch up with a rapidly changing field, and when they are a bit ahead, they are often severely criticized or ignored. We still find far more interest in the Documentation Center at the Western Reserve University Library School on the part of non-librarians than on the part of librarians. We have small enrollments and consequently difficulty in obtaining funds to pay the specialists we need on our faculties; government grants are not falling into our laps, as they do in the medical schools or the graduate physics departments. But admission requirements are being raised, new programs are being developed, and the non-library world is raising a hue and cry about the need for more people with more extensive library training. This may bring the schools more students and more funds. I am proud to be engaged in library education, but it will be a sad day when one of us stands before an audience of librarians and tries to convince them that library education need not be better than it is. We all have a tremendous job to do—and the responsibility for improving library education belongs to all of us. I can think of nothing librarians can turn their efforts to that will yield greater results, and if you think that this is a pitch for genuine concern and support from the field as a whole—it is!

**B**EFORE I ATTEMPT to answer the question posed by the title, we need a common understanding of the term "traditional." According to Webster, "traditional" is defined as handed down by or conforming to a long-established custom or practice that has the effect of an unwritten law. On the basis of this definition I would say there are *no* traditional library schools. All the library schools have changed outlook, point-of-view, and curriculum over the past 20 or 30 years, and I know of no curriculum that is such a "sacred cow" it has become an unwritten law. Perhaps a better way of describing the library school of today is to call it conservative, or reactionary, or backward.



As long as there have been library schools, they have been the "whipping boys" of practicing librarians. Arguments have been constant about what courses should be offered and about what should or should not be included in these courses. During all the turmoil over library education, the schools themselves have been slow to act, slow to change, resistant to pressures from the outside world of librarians. Their conservative manner *may* have protected the library profession from some of its own foolish fancies, but can this conservatism be justified in all cases?

Years after the invention of the typewriter many libraries still produced handwritten catalog cards, and many library schools taught penmanship. The conservatism of these schools could be defended by recognizing their response to the demands of practicing librarians, that is, the very individuals who would hire the graduates of the schools. Using this as an example, who is conservative, the school or the practicing librarian? The group that finally initiated a change to the typewriter was undoubtedly the practicing librarian, but at first he was a minority, the radical branch of the profession. As long as the typewriter was used in cataloging by a minority, the schools may have been justified in teaching penmanship. Or were they?

Every small group that represents some new concept in library service wants the

school to revise its curriculum. Some complain long and loud because library schools do not immediately adopt new courses to serve their ideas and specialized needs. Particularly vocal in this area have been the special librarians—pharmaceutical librarians want courses in pharmaceutical librarianship; insurance librarians want courses in insurance librarianship; film librarians want courses in audio-visual librarianship. Faced with this clamor, the schools must make a decision based on faculty and, above all, financial ability to offer such specialized courses to limited audiences.

Although adoption of specialized courses has not been universal, a number of schools now offer courses in special librarianship, law librarianship, medical librarianship, theological librarianship, and similar courses that appeal to a relatively small group. The original advocates may have had to wait a long time to see these courses offered by library schools, but eventually the courses appeared.

In the past and again at this Convention, I heard that old refrain—"Why don't the schools teach so-and-so?" It is time we faced the cold, hard facts of life. The inclusion of new courses in a curriculum costs money, and this money has to come from somewhere. It might be nice to offer a course for three or four students, but when the school goes into the hole by doing this, it is hard to justify it to top administration.

A second factor in the conservatism of library schools is a consideration of trends. Again, a trend toward the special library was evident for many years before library schools responded. The current trend in the field of information retrieval and the use of machines and computers has been obvious for some time, particularly to the special library group, but few schools have taken any action. It is in this area of following trends and looking toward the future that library schools have been conspicuously lagging. It takes a lot of handwriting on the wall concerning major changes taking place in the world before more than a very few library schools are able to interpret the writing.

One good reason is that many library schools lack direct contact with the outside

world. Too few of their professors may have had recent experience in work situations where they came into day by day contact with the problems facing the practicing librarian. They read articles; they talk with the working librarian; but it isn't the same as meeting problems first hand. Members of the faculty most likely to decide on new curricula settle down in cozy niches and refuse to consider the changes taking place, often ridiculing those who try to point them out. They are like Rip Van Winkles who may not awaken before the world of librarianship has completely changed.

Another factor that slows the adoption of new curriculum ideas is fear—*fear* of what other library schools might say; *fear* of accreditation committees; *fear* that a new program will not be accepted by the students; *fear* that the new offering will not be a financial success (for in spite of altruistic motives, most schools still have to operate within a budget); and *fear* of what practicing librarians may say. The last fear is a real deterrent because these are the persons who hire the graduates.

It is my feeling that the schools are no more conservative than the librarians themselves but the schools tend to react more slowly to change. The next question is, are the schools justified in reacting more slowly to change? My answer is *no*. New ideas, new concepts, and experiments should be adopted by and, what is more, initiated by the schools. The new ideas about handling information did not originate in the schools. Why? Because of conservatism and lack of creative imagination.

One way to provide an atmosphere conducive to stirring faculty imagination is to provide money for research in various phases of librarianship, permitting the faculty member to explore some outer fringes of the field. This idea has been kicked around for years, yet few persons in library schools are doing research.

Again I would like to consider finances. I am speaking in favor of research, but if we want to encourage the library schools in this area we have to be willing to provide support. It is time the practicing professional shouldered some of this responsibility. One of the audience at the Sci-Tech Division meeting urged that more research be done by the library schools—my question in return is, where is the money? Research is wonderful, but it carries a price tag.

If new ideas are not receiving a proper hearing in the schools because they do not warrant a revision in the curriculum, then one solution might be to lump them together and offer a course on "New Ideas in Librarianship." Keep it as "blue-sky" as possible. Interesting surprises might come from students and faculty exposed to such a challenge.

In closing, I would like to recognize my remarks as just another stanza in the same tired song. It can be changed to the latest pop tune if you and I are willing to get together and work at it. Are *you* willing to accept new ideas, *consider* them, even *try them out*? Are *you* willing to exert the energy to push your ideas? If you are, there is hope of putting some new life into the so-called "traditional" library school.

---

## LIBRARY SCHOOL NEWS

### Canadian Library School Appointment

The University of British Columbia School of Librarianship, Vancouver, will offer courses in special libraries, history of libraries, and others to be taught by Marion Gilroy, newly appointed Assistant Professor. She is the former President of the Canadian, Maritime, and Nova Scotia Library Associations as well as the author of monographs in the fields of history and librarianship.

### Newly Accredited Library School

The Department of Library Science, Kent State University, Kent, Ohio, became the 35th library school to receive accreditation for its graduate program in library science from the American Library Association's Committee on Accreditation. Approval was given during the July 1963 ALA Convention in Chicago.

# New Dimensions in Library Education: The Training of Science Information Personnel

ALAN M. REES, Manager, Research Resources  
Center for Documentation and Communication Research, School of Library Science,  
Western Reserve University, Cleveland, Ohio



Madison Geddes

THE PROBLEM OF training an adequate number of competent personnel for the handling and processing of scientific and technical information is most acute. The present scarcity of trained personnel is compounded by the increasing demands from government agencies, industrial companies, and other organizations for specialists to implement complex and expanding information programs.

The solution to the problem is by no means simple since even a dramatic increase in the sources of the present supply of personnel would hardly meet the need. It is sobering to note that only about 100 persons graduate yearly from the United States accredited library schools with both a B.S. degree and an M.S. in Library Science. Moreover, it is obvious that there is a shift towards a demand for a different type of person yet to be recruited to the arena of information handling. An attempt has been made to define this new breed by function, as can be seen by the array of confusing job titles—literature scientist, information specialist, information scientist, science librarian, literature chemist, documentalists, information systems analyst, technical abstracter, and so on. Great effort has been expended to differentiate the new concept of information handling from the shuffling of paper unfairly associated with the librarian.

## Factors Influencing the Demand for Science Information Personnel

The present and projected demand for personnel and the character of the academic

training required for those engaged in the handling of scientific-technical information must be related to a number of trends which have recently become apparent. These will be discussed to illustrate their influence on the type of person to be recruited and the accompanying educational needs:

**THE QUALITATIVE NATURE OF THE INFORMATION CRISIS:** The justification of information retrieval in terms of the exponential growth of the literature has recently been subjected to some well-merited criticism.<sup>1</sup> The information problem can no longer be viewed solely on a quantitative basis. Nobody needs—or will ever need—to examine the total literature of any field of knowledge, even if this were possible. Such statements as, "If a chemist were to read all of the literature of chemistry for 24 hours per day, he would fall behind an estimated xxx,xxx pages per year," are based upon the fallacy that all of the literature of chemistry is of equal interest, or of equal value, to any one individual or group of individuals. The problem is rather one of sifting through mountains of information, much of it redundant and/or worthless, and judiciously selecting *only* those items applicable to the information need that prompted a request. Many librarians are ill-equipped to perform this evaluative function, and it is the existence of this added dimension to information handling that differentiates a specialized information center from a special library as presently conceived.

**THE GROWTH OF SPECIALIZED INFORMATION CENTERS:** The emphasis upon *qualitative* considerations in information handling is associated with the information center con-



cept. The rapid proliferation of such centers in the field of science-technology is the result of the need to establish and operate information systems based upon highly selective input and critically sifted and compacted output processed with specific reference to the specialized information needs of individuals with mission-oriented interests. Information is assessed by experts and is incorporated within the system only if it possesses actual or potential interest to the user population.

The output of such centers is not only relevant but also pertinent (valuable) information in a processed form. It consists of "authoritative, timely, and specialized reports of the evaluative, analytical monographic, or state-of-the-art type."<sup>2</sup> The information center therefore furnishes the user with processed information in an assimilable form with direct and explicit relationship to his research interests. In this way the information center can be distinguished from a special library, which offers unevaluated and unprocessed documents or document references, or both. The distinction should, however, be recognized as an artificial one.

The growth of the information center concept, of which G. S. Simpson and J. Murdock of Battelle Memorial Institute have long been the leading exponents, has radically changed the nature of the demand for science information personnel, in that centers are staffed for the most part by scientists who act as a bridge between the information system and the laboratory. Information specialists are the peers of the users of the system, possessing equivalent academic qualifications in a scientific discipline; they are the valued and trusted colleagues of those working at the bench and are specialists in the application of relevant and valuable information at the appropriate time in relation to real research problems, who fertilize research endeavor and expedite its successful performance.

As of November 1961, there were 427 information centers listed in the *Directory of Specialized Science Information Services in the United States*, published by the National Science Foundation. As a result of this large number of centers, and considering the many classified centers in government agencies not listed in the NSF *Directory*, the impact of the

information center on the nature and extent of the demand for science information personnel cannot be overestimated.

**THE EXPANDED CONCEPT OF INFORMATION HANDLING:** Information processing is now seen to encompass a broader spectrum of activities than originally defined by library-oriented personnel. The addition of the critical, evaluative function has been accompanied by an extension from document retrieval to information retrieval. The provision of document references lacking value judgments constitutes only a semi-finished product. As Alvin Weinberg has remarked, "Document retrieval is a prerequisite to information retrieval—but it is only a prerequisite; an information system that stops short of transferring information from one human mind to another is inadequate. . . . The input of the specialized information center is documents and uncorrelated data; its output is reviews, correlations of data, compilations."<sup>3</sup>

This shift in emphasis from a special librarian as a furnisher of documents to an information specialist who is an active processor of information and an integral part of the research environment has created a demand not only for more personnel, but of a different type than those usually associated with library school programs. "The full spectrum of science information activities is now more complex than most librarians have been geared by education and experience to solve."<sup>4</sup>

**THE INCREASED INVOLVEMENT OF THE SCIENTIST IN THE TRANSFER OF INFORMATION:** It is now widely held that the scientific-technical community must recognize and accept the fact that the handling of technical information is an essential part of scientific research. The involvement of the scientist permits information systems to be user-oriented and ensures that the functions of synthesizing, reviewing, and critically compacting information are recognized as prestigious pursuits worthy of the attention of the best talent. As this involvement becomes greater—and more popular—the acute scarcity of high-caliber recruits to the field of information handling will be lessened.

#### THE POPULARITY OF NON-CONVENTIONAL APPROACHES TO INFORMATION HANDLING:

The great rush into the development of non-conventional systems has been made with little attempt to evaluate critically and exploit conventional systems. The result has been to emphasize differences rather than similarities, and consequently there has been a demand for personnel skilled in gadgetry and the manipulation of mechanized systems but ignorant of the fundamental principles underlying the analysis and retrieval of scientific information. The emphasis has been upon action rather than theory, novelty rather than careful experiment based upon past experience. The rapid development of systems has been accompanied by an absence of effective criteria for assessing the comparative efficiency of systems and the failure to establish under what circumstances the choice of a mechanized system is preferable to that of a manual system.

It is therefore not surprising that no clear-cut educational principles have emerged from the confused state-of-the-art.

#### The Role of the Library School

Most people would agree that the library school is the logical place for the development of an educational program for the training of science information personnel because it represents the focal point of theory and operating experience concerning the acquisition, subject analysis, storage, retrieval, and dissemination of information. The stewardship of recorded knowledge has traditionally been the responsibility of the library profession. It is indeed difficult to conceive that an adequate and effective educational curriculum for science information personnel could be based upon anything other than existing knowledge about the manipulation of information; yet the present programs of library schools hardly present a favorable or optimistic picture.

The Weinberg Report notes that the library profession has given "only a token nod to the challenge presented by the radically new systems for organizing, storing and retrieving technical information."<sup>5</sup> A librarian writes, "The curriculum being offered in most of today's library schools is, it seems to

me, inadequate for training science information personnel. Merely adding a few courses in the literature of science is not going to solve the problem."<sup>6</sup> The British Institute of Information Scientists has openly broken away from the library profession and states, "Although there are many points of contact and common interest with librarianship, information work has now developed along many different lines. . . . The information scientist (information specialist in American usage, i.e., a scientist working with information) is primarily a scientist who is approaching the literature and other sources of information from the research standpoint, whereas the librarian, even though he may have studied science, is trained to approach the literature from the standpoint of a custodian, although he may be competent to undertake more."<sup>7</sup>

The Education Committee of the Special Libraries Association recently noted that a major problem in special librarianship has developed from the fact that "an increasing proportion of the work of handling and processing information is being done by persons who do not have library education and training." The Committee recommended that SLA should "emphasize and re-emphasize to the library schools the fact that in the next five to ten years more and more people will be needed in this area of technical information service and that if the library schools do not supply properly qualified candidates for these positions, the vacuum will be filled by people with other types of education and training."<sup>8</sup>

What, in fact, has been the response of the library schools to the challenge? A very brief survey reveals a number of courses offered in the field of science information handling.<sup>9</sup> Most library schools also offer courses in special libraries which cover a number of subject fields such as medicine, law, chemistry, or art.<sup>10</sup>

One also notes a number of seminars and short courses taught by pioneers such as Dake Gull, Mrs. Claire Schultz, and Dr. Robert Hayes. Mr. Gull has offered courses at the Universities of Michigan, North Carolina, Syracuse, and Washington; Mrs. Schultz has taught a seminar on Search Strat-

egy for several years at Drexel and this summer offered the same seminar at the University of Washington; Dr. Hayes has taught Mathematics for Information Retrieval at a number of institutions, including UCLA. Such courses have enriched the library school programs.

Can this mixed array of lectures, short courses, institutes, special seminars, and refresher courses be regarded as an adequate and well conceived approach to the formulation of a sound educational curriculum in this area? Does the training of science information personnel belong in the library school? If so, how does the curriculum for science information relate to the traditional core courses of library science? These are serious questions that possess important implications for the future of the library profession.

The nature of the response on the part of the library schools has been to add specialties such as abstracting and indexing to the present offerings with little attempt to relate these specialized activities to the existing body of theory and practice contained within the core curriculum. The result has been the teaching of new technical skills divorced from any theoretical principles, which alone can provide meaning to empirical experience.

Dean Jesse Shera of the Western Reserve University School of Library Science has pointed out that excessive attention to the engineering aspects of librarianship to the neglect of basic, theoretical principles is due to a failure to recognize that "a technology is a means, not an end. Lacking theory to give it direction and purpose, it drifts aimlessly." Although a "sophisticated technology should be an important part of every librarian's professional equipment, and its neglect in his education would be disastrous," it must be recognized that a technology "even when it is mathematically derived and electronically implemented is not all or even the essential part of librarianship."<sup>11</sup>

One can only deplore the piecemeal addition of technological courses to the existing core programs of library schools. Courses in science information handling and information retrieval have been developed and offered, but they are largely unrelated to the

main flow of library development, which could enrich and make more meaningful the specialized techniques taught. How many courses in non-conventional systems of indexing relate co-ordinate indexing, descriptor theory, and thesauri to the principles of subject cataloging, subject headings, and classification theory? Alternatively, how many courses in subject cataloging and classification take into account the revolutionary developments in information processing?

The haphazard approach to providing an adequate and well designed curriculum for science information personnel is caused by a number of reasons. First, science information is but one of the specialties considered as part of the traditional library school program. Second, the development of information retrieval has been regarded by many library school educators as an astounding array of gadgets and fads that make little sense in terms of an academic curriculum. Third, there is the very valid problem of relating the new and specialized techniques to traditional theory and practice.

It is generally assumed in this connection that "there is a valid series of introductory or core courses in which the principles and processes of librarianship generally can be transmitted and that these core courses serve as a foundation upon which library specialization can be superimposed effectively."<sup>12</sup> The conservatism and hesitancy of the library schools to respond quickly to the needs of the scientific community in this area and the piecemeal approach are directly attributable to the failure to relate the specialties of library science (of which science information is one) to a core that has never adequately been defined.

Apart from its lack of adequate definition, the present core is hardly hospitable to the scientific viewpoint. It has been rightly pointed out that the capacity and vigor on the part of the library schools to provide an adequate education for science information personnel "has been limited . . . by a very long standing commitment to academic and public libraries where careers are assured."<sup>13</sup>

Those entering the field of science information have been somewhat discouraged by courses on cataloging, materials selection,

reference work, and so on geared solely or principally to public and academic libraries. The principles of materials selection in a public library and an information center might be identical, but a discussion of censorship is hardly applicable in the latter instance.

### Education Outside of the Library School

Several steps have been taken by institutions other than library schools to provide educational programs. Georgia Institute of Technology recently concluded a study for the National Science Foundation on concepts, curriculum, faculty, and recruitment necessary for training science information personnel and held two conferences to discuss these problems with national leaders.<sup>14</sup> Out of these conferences has grown a School of Information Science, established this year at Georgia Tech. One area of specialization, or option, is for science librarians and information specialists, and the second option for information scientists—according to the Georgia Institute of Technology definition of these terms.

Interest by industrial management is reflected in the activities of the American Management Association, which has sponsored a number of seminars and workshops in information retrieval and library management: *The Role of Management in Information Retrieval* (presented by Western Reserve University), *Data Processing and Management Information Retrieval Systems*, *Information Retrieval Systems for Engineering and Scientific Applications*, *EDP and Management Information Services for Personnel Systems*, and *Establishing and Managing the Company Library*.

The Engineers Joint Council is offering an *Abstracting and Coordinate Indexing Course*, lasting one week, taught by Jack Costello of Battelle Memorial Institute at a number of locations this summer and fall. This course provides "a rigorous schedule of lectures and practical drill sessions," and covers syntactic problems in coordinate indexing, links, roles, thesauri, and so on.

Another interesting approach to the problem was the establishment in April 1962 of the Institute for Information Sciences at

Lehigh University, as a division of the University Library. The Lehigh group plans to offer graduate courses in information sciences supplemented by related graduate-level courses in psychology, industrial engineering, business administration, philosophy, and mathematics. Instruction will be centered around several basic aspects of the subject—flow and use of scientific information, linguistic and information analysis, and design and evolution of systems. A series of seven lecture-seminars is currently being offered. This year the first course will be offered, which is an introduction to the information sciences.

A number of training programs are being offered by various organizations. One that is well designed and conceived is the *Science Information Administrator Program* conducted by the American Institute of Biological Sciences on an NIH grant. As a result of on-the-job training at AIBS and course work to be taken at a number of universities in the Washington area, successful participants in the program will be awarded an M.A. or Ph.D. degree to be conferred by the School of Government and Public Administration of American University. Courses will be taken in a number of subject areas such as administration and documentation, library science, linguistics, statistics, biology, botany, and zoology.

These various educational activities outside of the library profession represent many interesting adaptations and experiments designed to meet very real needs.

### Conclusions

Although one notes a number of approaches to satisfying the need for education in the area of science information handling, the most realistic and substantial contribution in the near future can only be provided by the library schools. The theoretical principles and guide lines for practice, so conspicuously lacking in science information technology, can only be derived from the embedding of empirical experience in the traditional theory of subject headings, facet analysis, classification theory, subject cataloging, and so on.

The approach of the Western Reserve

University Library School is to work towards a synthesis and integration of the theory and practice of traditional library science with the empirical experience derived from the design and operation of non-conventional retrieval systems in the field of science and technology. The immediate establishment of a comparative systems laboratory under contract to the National Institutes of Health will permit students to test the comparative efficiency of systems on the basis of controlled experiment. Research currently being undertaken for the Air Force Office of Scientific Research relating to the establishment of the fundamental laws underlying information systems also contributes to the establishment of a sound academic curriculum for science information personnel. Seven courses are currently offered in information retrieval, systems design and computer programming. The core curriculum is currently being revised to incorporate the newer principles and extended functions involved in information handling.

As the curriculum is revised, integrated, expanded, and improved, it is anticipated that more students will be attracted with better qualifications and motivation. This trend is already apparent in recent years.

The opportunity presented to the library schools is infinite. No other institution is as well equipped to provide an adequate curriculum for the handling of scientific information. It is inconceivable that effective education could be based upon anything other than existing knowledge about the manipulation of information. A more precise and expanded concept of library science is possible, and there is little doubt that some at least of the library schools will meet the challenge.

1. See, for example, Yehoshua Bar-Hillel, Is Information Retrieval Approaching a Crisis? *American Documentation*, vol. 14, April, 1963, p. 95-8.
2. G. S. Simpson, Scientific Information Centers in

the United States, *American Documentation*, vol. 13, Jan. 1962, p. 43. See also G. S. Simpson and J. W. Murdock, Experiences Obtained in Developing and Operating Scientific Information Centers, *Instrument Society of America Conference Preprint* Number 48SI61, Jan. 17, 1961, and Qualitative Approach to Scientific Information Problems, *Battelle Technical Review*, Nov. 1960.

3. Alvin Weinberg, Science, Government and Information. Preprint of an article in *International Science and Technology*, 1963, p. 4, 5.

4. Leonard Cohan and Kenneth Craven, *Science Information Personnel*. New York: Science Information, P.O. Box 624, Radio City Station, 1961, p. 13.

5. President's Science Advisory Committee, *Science, Government and Information*, Jan. 10, 1963, p. 29.

6. Christopher G. Stevenson, Library Education: The Shape of the Future, *Special Libraries*, vol. 54, May-June 1963, p. 261.

7. G. Malcolm Dyson and J. E. L. Farradane, Education in Information Work: the Syllabus and Present Curriculum of the Institute of Information Scientists Ltd., *Journal of Chemical Documentation*, vol. 2, no. 2, 1962, p. 74. See also Dyson and Farradane, The Aims of the Institute of Information Scientists Ltd., *ibid.*, p. 72-4.

8. *Special Libraries*, vol. 53, Sept. 1962, p. 407-8.

9. See *Courses Available in Accredited Library Schools in the Area of Special Librarianship, Documentation and Literature of the Subject Fields*. Chicago: American Library Association, Library Education Division, Jan. 1963.

10. For a discussion of courses in special librarianship see, John Carson Rather, Education for Special Librarianship, *Drexel Library School Series*, no. 4, 1960, p. 18-23.

11. Jesse H. Shera, Toward a New Dimension for Library Education, *ALA Bulletin*, April 1963, p. 314-15.

12. Assumptions Underlying Library Education Today. In *Objectives of a National Plan for Library Education*. Prepared by the American Library Association, Library Education Division for the ALA Commission on a National Plan for Library Education, Jan. 8, 1963.

13. Cohan and Craven, *op. cit.*, p. 23.

14. *Proceedings of the Conferences on Training Science Information Specialists*: Oct. 12-13, 1961; April 12-13, 1962. Georgia Institute of Technology, 1962. See also, Dorothy M. Crosland, Georgia Tech and the NSF Study Grant for Training Personnel for Scientific and Technical Libraries, *Special Libraries*, vol. 53, Dec. 1962, p. 590-4.

---

## SLA Sustaining Members

---

The following organizations are supporting the activities and objectives of the Special Libraries Association by becoming Sustaining Members for 1963. These are additions to the Sustaining Members listed in earlier issues and include all applications processed through September 24, 1963.

NATIONAL ASSOCIATION OF ENGINE AND BOAT MANUFACTURERS

PEPSI COLA COMPANY

# Bookman, Information Expert, Documentalist—How Library Schools Meet the Challenge

NEAL R. HARLOW, Dean, Graduate School of Library Service  
Rutgers University, New Brunswick, New Jersey



A CHALLENGE IS a dare, a formal objection, a call of defiance, or a cry to halt and give the countersign. On guard, my assigned title says to me, and I accept it as something between a warning and a threat. I was uneasy, when asked to share the platform with two missile people, about getting into faster company than I could probably keep, but I reckoned that if they took off ahead of me, and even carried the whole audience with them, someone would need to step in afterward and bring everybody down to earth again; and that somebody might as well be me!

*En garde!* The documentalists are coming! This cry was once used to frighten young librarians, but "literature scientist" has now succeeded it, being calculated to scare both them and the documentalists. And the latter might well feel in jeopardy, for a short while ago a group of very respectable science information specialists quietly jettisoned them (in an appendix) for having no particular definition. It may be we are only suffering from a "toxic condition of the vocabulary" (as Jacques Barzun phrased it) because we are all a little high from chronic over-stimulation or are nursing a hidden source of infection that needs to be isolated and identified. My own qualifications for diagnosis may be thought to lean too heavily on extrasensory perception, but my several conventional senses tell me that in discussions of this kind confusion often arises be-

cause we are talking about different things in terms that have no agreed-upon meaning.

On occasions similar to this, when I have heard statements about what the education of librarians should be, the greatest concern has often been expressed over details that are closest to hand—what they failed to teach me in library school about the job I have to do. And I argue that any boy with a new rifle can hit a bulls-eye at close range, given enough tries; but he is not a good soldier and would be a menace to himself and the army. It has also been shown that any bright lad at a reference desk can pick a great deal of generally useful information from the most commonly used sources; but if he is made responsible for a whole library operation, without the knowledge, discipline, and judgment required of a librarian, he will be a handicap to himself and the system. Like a surgeon or pediatrician, the librarian, information specialist, or documentalist must be familiar with the anatomy of the whole body and master the basic sciences of his field.

This basic knowledge does not remain static long enough to be formalized into a creed. Librarianship can trace its evolution from the scholars, collectors, and bibliographers of the 16th century and prove by internal evidence a direct line of descent to the information machine. But change has been capricious, and we can find living examples of the scholar-collector period alongside information specialists of the space age. Like physicists, librarians began with what now seem crude, simple, or superficial matters and gradually came around to more sophisticated things. And, as growth and change have taken place and specialization become more extreme, new barriers of lan-

Presented at the Science-Technology Division panel, "Is Library Education Meeting the Challenges of a Changing World?" at the 54th Annual SLA Convention in Denver, June 10, 1963.

guage have been raised, and persons speaking *basic bookman* can no longer communicate with those understanding only *documentalese*. As the names of primitive tribes often mean "the people" in their local tongues, so each of the families of information man tends to regard itself as a chosen race, rather than as having natural ties of blood and tradition.

### Definitions and Relationships

The LIBRARIAN provides the basic structure of the information system, having a general understanding of the whole operation and holding it together. His responsibility embraces all aspects of information work—intellectual, bibliographic, mechanical, and administrative—and although he may be asked to emphasize some one aspect of it at any time, he is prepared to treat it all as related to the rest. To him, librarianship is a discipline (demanding truth, objectivity, and accountability), a profession (requiring a liberal education, specialized knowledge, and a fundamentally intellectual contribution), and a service (with objectives which are informational and educational).

His primary responsibility is to apply *judgment* to library situations, based upon an integrated knowledge of the objectives, principles, techniques, materials, and users of library service. He may indeed become involved in other supporting activities, but he should be aware that these are supplementary and not his main job, if he is going to be a librarian. While the "bookman" may be characteristically interested in materials and in promoting general access through open stacks, catalogs, and classification schemes and rely for deeper analysis upon bibliographies, abstracts, indexes, and similarly detailed approaches provided by other people, the margin between librarian and "special" librarian is sometimes indistinct.

A SPECIAL LIBRARIAN is a librarian with two well developed specializations, librarianship and the literature of a subject field, with responsibility to a highly conscious audience and a resulting emphasis upon use. This aggressive attitude toward service has led Ralph Shaw to characterize the special library as being "really a point of view," inversely

suggesting that the general library either has a different focus or that its outlook is diffuse. Because the objectives of a special library are fewer and more obvious, they are more easily identified and likely to be achieved, while the services of a general library must be deliberately selected for special emphasis if they are to be actively pursued. Special librarians are therefore likely to be more ready than others, quicker, surer of their specializations, with a clearer knowledge of their users' needs.

While still being responsible for the whole information unit (and cycle), they may produce their own abstracts and annotations within a limited subject range, construct indexes, make translations, write reports, and work coordinately with mechanical informational systems. And they can exist anywhere under given conditions, in industry, a university, community, or school. "Special," then, may not only be contrasted to "general" but to "passive" or "diffuse"—two useful descriptors the SLA Membership Committee might find handy in screening new recruits.

I shall revive here and use the word DOCUMENTALIST to include those having special competence in dealing with the machine—for storing, searching, reproducing, and transmitting information. In this capacity they cannot simply be "way out," disconnected, discontented, or "angry" with "conventional" means—each must be a special librarian in the double sense described above, with a third capability added thereto, a thorough knowledge of machine tools as well as of manual methods and an appreciation of the relationships between the two. To be a responsible member of the trio of librarian, special librarian, and documentalist, he must understand and be directly concerned with the whole information cycle and be able to evaluate critically over-all pertinence and cost. In the recent evolution of systems for the storage and searching of information by non-conventional means, this function of the documentalist has been characteristically the missing link.

Joined to this unbeatable team of librarians is the LITERATURE ANALYST, primarily trained in a subject field, with an above average knowledge for a scientist, of the char-

acter and content of the literature within his scope. As a scientist, he works at a desk rather than a bench, and his function is to search, organize, evaluate, and synthesize information, whatever is appropriate in relation to a given program of research, and he may be responsible for the final report. He is the middleman between the librarian or information expert and the scientist or scholar, not taking over the function of either (including their personal reading) but bearing the major responsibility for research and synthesis in respect to recorded information. He can be attached to the library or research project, but his competence in a subject field must be substantial enough to inspire confidence in a critical user and frequently enough exercised to justify his employment and give satisfaction to him.

The INFORMATION SCIENTIST is included here to dispel confusion, for he is not part of an information system. He must be fully qualified in one or more of a variety of subject areas and intent upon research in some aspect of information—its nature, handling, storage, search, communication, or use. Like the chemist, physicist, and economist, he uses information and extends knowledge, but he is not part of the communications pattern. Until the discoveries made by him are assimilated into an information scheme and made compatible with it, they may actually mislead or obscure rather than aid. As engineers have recently decried do-it-yourself engineering by physicists as handicapping the exploitation of space and the atom, so uninformed intervention by perfectly good scientists in information systems can damage and delay development. The machine handling of information has recently been characterized as "a technology without a science," and there is a vast and desperate need for basic research in relation to it.

We have now identified five general classifications in the information field—librarian, special librarian, documentalist, literature analyst, and information scientist—although these are not necessarily all (there being programmers and code developers, for example, working with the machine), nor are they always operationally discrete (a special librarian often doubling as documentalist). But

the diagnosis indicates whether we have all been talking about the same thing when using the more or less familiar names. Two questions remain: Within these categories, which are the responsibility of the library schools? and, Are the schools satisfactorily doing their job? Let me briefly propose an education for each.

#### Proposed Education for Each Type of Information Man

The education of a LIBRARIAN can be packaged in several ways, but, however divided, should include these basic things:

1. The origin and function of libraries, to indicate what our traditions and responsibilities are.
2. Bibliographic method, i.e., the techniques and structure of bibliography that are applicable to all subject fields.
3. Literature searching and documentation, or the intellectual and physical means of access to any literature.
4. Descriptive cataloging as it applies to all materials.
5. Subject analysis at various depths.
6. Abstracting and indexing for information services.
7. Evaluating information and evidence as a basis for qualitative judgment.
8. A study of reader services or how to analyze varied users' needs and provide for their satisfaction.
9. Building library collections or how to appraise and develop collections of materials.
10. Administration of library situations.
11. Application of management principles and systems analysis to library operations.

Since librarianship exists only in partnership with specific content, the librarian must have, in addition, more than a layman's knowledge of a subject field. The education of a librarian must therefore be *post-graduate*, built upon at least the maturity and knowledge represented by a college degree, and *graduate* in respect to its level of intellectual appeal. Work beyond the master's degree (not necessarily to the doctorate)—providing training in research or greater competence in a subject field—is always appropriate.



The SPECIAL LIBRARIAN performs all the librarian's basic functions and therefore requires the same general education and perspective, plus a strong major in a subject field. Not a literature analyst, technician, or scientist, his subject competence can be made up of a thorough familiarity with the concepts and terminology of a field, its distinctive branches of study, the research process, and the interests of his clientele. His professional education will emphasize bibliographic method, cataloging and classification, abstracting and indexing, subject bibliography, literature searching and evaluation, and documentation methods and equipment, with particular attention to relationships between man and machine. Since it is far from certain he will find library employment in the subject field of his choice, he must be prepared to successfully occupy other areas through the intensive use of bibliographic and searching methods learned in library school.

The education of a DOCUMENTALIST will recapitulate that of librarians as a group, with some subject competence. It will elaborate in respect to the machine's potential for informational use, including practical instrumentation and computer programming, with pertinent logic and statistics, and it will need to do this beyond the first master's level. With his eyes on the machine (and the future), he will literally fail the course if he does not recognize what is currently feasible, when a process is experimental and not ready for commercial service, and how to work out the characteristics and cost of a whole information program by filling in the often missing parts, and where man comes in. He must be as objective, disciplined, and responsible as his other library colleagues and have the same professional commitment to education and information use.

To comprehend and synthesize the literature of a subject field, a LITERATURE ANALYST must have a theoretical and working knowledge of a subject derived from systematic study to the master's or doctoral level, preferably followed by active experience in research. Today he is likely to be a recruit (or escapee) from a research job, for "literature analyst" hardly exists as an occupation toward which a college boy can look.

In apprehending information, he will need to know something about bibliographic sources and method, abstracting and indexing, report writing, and documentation methods so that he can work harmoniously and usefully with library colleagues and research staff. He may be described as having a thin coating of librarianship through which his qualifications as a subject specialist can be clearly seen.

INFORMATION SCIENTIST is as yet hardly a recognized term, but it is beginning to be adopted, if not wholly accepted, in institutions of higher learning. Information, as an area for scientific exploitation, must depend upon shared knowledge from many fields: mathematics, linguistics and logic, electrical engineering, physics, psychology and physiology, economics, industrial management, and operations and systems research, to name a few. And if the findings are to have general validity in relation to information handling and use, they must be developed in the perspective of what bibliography, classification, descriptive cataloging, and subject indexing have to teach. One of the wonders of the scientific approach to information work has been the almost prideful ignorance of what is already known in "conventional," that is, functioning form.

#### Role of Library Schools

Of the five educational programs mentioned here, three are the prerogative of library schools, two will need their guidance and perspective. But how many schools are prepared to turn out a 1964 product? And I do not mean a new annual model, in its sales room definition, laid over with semantic chrome, decked out with tinselled terminology and called "The New Curriculum." We need not pick out here any ecstatic course descriptions and analyze what is beneath, but we have a duty to integrity and good judgment as well as to boldness and public esteem.

What of the other extreme, the ultra-conservatives, the professional far-right, who have not really changed their course content in 10! these 20 years? They cannot differentiate between bibliographic method and a bibliography; do not recognize management as the intellectual principle transcending processes;

have not learned the concept of "systems," which provides continuity to a cycle of operations, or the logic of cause and effect. They discover no synthesis linking information services in elementary schools and industrial research (and give endless credit courses repeating general principles and elaborating upon ephemeral details). Some may even set up a graven image called the book—however beautiful, one of the great mechanical inventions of man. I have mentioned what I believe course content should be, and it should be presented to the student as being motivated by its final cause, the needs of users, and actuated by dedication and good management.

The quality of the faculty controls the quality of the school and is more important than any particular organization of the program. The curriculum must be designed by the faculty as a whole, and each must see it all before his contribution can be fitted in. An educational institution cannot be created from a part-time staff, employed full-time at something else, dabbling with the education of students like dilettanti, or pontificating as if they were Henry Ford on his birthday. We need senior people who have made their ways by their own wits in the field, to teach and think full-time—with "full-time" requiring and scheduling research and study in the field. Most practitioners are too close to the field, too sure they know the way, too ready to preach rather than teach students. Part-time specialists and detail men play an important role, filling in and accenting a well designed pattern.

Since the graduate schools are the main entry to the library profession, and through them flows the supply of persons who can be called professional, they should admit only the best material, knowing the candidates' weaknesses cannot be corrected in a year and that their level of education and intelligence determines where the professional program begins. Libraries in this respect are often the profession's worst enemies, for they are ready to recruit less quality than circumstances require, wasting the librarian's birthright on trivial assignments, and pressing the schools for a larger output than a quality-controlled input justifies. The

challenge of recruitment, at least, can be batted right back to the profession.

The "ugly" librarian appears to be always with us, and the concept is a perpetual challenge. Although he carries the greatest load of information work, he is downgraded for not being a scientist and for being a "custodian" and "against" the machine. A government agency with a scientific mission can hardly specify librarians for information work if by asking for "literature scientists" they might get a hundred new positions instead. Proposals to train information specialists in non-library schools have an immediate appeal to outside funds; and expensive machinery answering 60 questions a year has been cheerfully supported by an industrial concern. The reluctance of scientists to accept information experts into their research enterprise (see the Weinberg Report) literally bars well qualified persons from this essential work. The public image of a librarian and a library school is a mixture of ignorance, prejudice, and truth; better information services in our own behalf, in addition to better performance, would reduce the distortion.

Finally, librarians are said to spend too much time fulfilling their obligations to society and too little of it developing a core of knowledge for the profession. Nobody worries much about this in law and medicine, where philosophers and law-givers and men trained in research are more or less set aside to perform this function. Librarianship has very nearly lacked an arm of research, and most technical benefits, at least, have come to it by marginal adaptation from commercial use. (Indeed, some of the characteristic problems surrounding computer technology in information work are similar in origin—as if all medical research were performed by pharmaceutical firms.) A good deal of basic research in other fields is carried on in universities, but in few of the library schools.

Librarianship itself is a functional system, like the hen and the egg, in which the school and practitioner continually recreate each other in endless succession. We can go outside the circle and attain another kind of animal, but I urge that we set about earnestly improving the breed.

Here is a challenge that is also a dare!

# Directions for Library Education

DR. ROBERT HAYES, President

Advanced Information Systems, Inc., Los Angeles, California

WE ARE IN the midst of an intellectual and technological revolution. It is a result of the growth of information services of all kinds. Its effects are being seen throughout our modern society—not only in science and technology but in business, in government, and in our personal lives. In this revolution mechanization as such actually plays a relatively minor role, but it has served as a catalyst and has forced us to examine very carefully the meaning, the value, and the organization of information.

The effect of this technological revolution is increasingly exhibited in the changes taking place in the character and structure of librarianship. In particular, we have seen the generalization of the type of collection with which the librarian is concerned, so that it now encompasses, in addition to the traditional books, a variety of other media and forms of recording such as documents, graphic material, and forms of mechanized storage. There is an increasing specialization of functions within the profession itself, with the definition of catalogers, reference personnel, library administrators, and others as specialties within librarianship. There is an increasing specialization of subject interest evidenced by the growth of special librarians in science and technology, medicine, law, business and commerce; this will certainly continue as the requirements for information services are extended into areas both wider and more specialized. There is an increasing knowledge in the library profession of mechanization and its applicability to clerical processes involved in providing information services. Finally, there is an increasing extension in the very nature of library services, which now encompass not only the storage and retrieval of books, documents, and information

Presented at the General Session, "Library Education: A License to Learn," at the 54th Annual SLA Convention in Denver, June 11, 1963. Dr. Hayes is currently President of the American Documentation Institute.

but in addition processes of publication, analysis, and basic research in the subject matter of the library. In a real sense, the information center is itself becoming a research institute.

## Three New Curricula

With such revolutionary changes in the character of librarianship, it would be surprising if there were not comparable changes in education for librarianship. And, of course, these are occurring in library school after library school throughout the country. They will continue to occur at an ever increasing pace as the needs for competent, professionally educated personnel increase. At this stage these new educational trends seem to be crystalizing into three distinct curricula.

The first is an expanded curricula in PROFESSIONAL LIBRARIANSHIP with emphasis on the problems in administration of libraries and information centers. Such a curriculum must include basic knowledge in traditional and extended librarianship, encompassing the newer tools developed over the last few years and going by the name of "documentation." It will also include basic knowledge in the administration of a complex business, with education in cost accounting, personnel administration, budgeting, and the tools of administrative control. It will include basic knowledge in the application of modern data processing tools to library processes, with an introduction to methods of library system design, equipment evaluation and selection, and computer programming. It will involve a period of internship, following the degree, to guarantee true professional knowledge.

The second recognizable type of curriculum is that for education of the INFORMATION SPECIALIST. It is, in a sense, surprising that this type of education has only recently been so strongly emphasized, since it was recognition of the need for the information specialist—the individual with training in both a subject specialty and the tools of li-

brarianship—that gave birth to the Special Libraries Association. However, the fact remains that this has occurred and that the pressures to develop professionally educated people with this combined background are now forcing the library schools to adopt this second category of extended curriculum.

The curriculum for information specialists again must include basic knowledge in traditional and extended librarianship, encompassing as before the newer tools of documentation. It should include extended knowledge in the more specialized tools of abstracting, annotating, and reporting, since the result of the information specialist's work will usually be consolidated state-of-the-art reviews. The significant addition is the emphasis on basic knowledge in a specialized subject discipline. In principle, this knowledge could be at any degree level up to and including a Ph.D. in the subject, governed principally by the degree of sophistication of results desired from the specialist—the greater the education in the subject specialty, the finer the state-of-the-art review that would be achieved.

The education for the information specialist must also include extended knowledge in the sources of material, the language, and the organization of information appropriate to the particular specialized discipline. This education should certainly involve a thesis with the intent of extending the fundamental knowledge concerning the application of information tools to the particular discipline. Finally, it should include a period of internship, following the degree, to learn the realities in communication and searching of information.

The third category of curriculum represents something fundamentally new and is almost certainly a direct result of the impact of automation upon our view of librarianship. It is the curriculum in INFORMATION SCIENCE, concerned with the development of knowledge in the discipline of librarianship itself. It therefore must also include, as do the other curricula, education in the basic knowledge of traditional and extended librarianship. In addition, however, it must include basic knowledge from a broad spectrum of fundamental disciplines, each applicable to the development of a theory for

the handling of information. Mathematics, psychology, linguistics, and a wealth of similar background will all aid in our understanding of how to handle and communicate information. Because of the catalytic role which mechanization plays, the curriculum should also include basic knowledge in the theory of data processing tools and programming. This degree program, which eventually may well lead to a Ph.D. level of research, should culminate in the preparation of a thesis extending our basic knowledge of the fundamental discipline of librarianship.

### Achieving Interdisciplinary Curricula

From these three curricula, it is evident that the coming education in extended librarianship is interdisciplinary in a twofold sense. It is interdisciplinary first, because so many different disciplines must draw on the methods of librarianship. Thus, it finds its application in physics, in sociology, in medicine, in law, in government. The second sense in which librarianship is interdisciplinary reflects the fact that the tools of librarianship are themselves drawn from a variety of fundamental disciplines. It is because of this twofold character of librarianship that the curricula for information specialists and the information scientists have both been recognized as essential. One represents the breadth of application, the second represents the breadth of base.

With such a complex interdisciplinary activity, it has become a serious question as to how education for it can be set into our modern university structure. Various approaches have been attempted with varying degrees of success. For example, special courses, summer institutes, and the like have been given throughout the United States. However, though these have been successful to one degree or another in introducing the changing character of librarianship, they are at best stopgaps. Some effort is underway to develop interdisciplinary curricula involving several departments in the university, but I suspect that these are almost foredoomed to failure through lack of recognition of the true unity and interdisciplinary complexity of the field. In some cases the responsibility has been split among several departments, but this will al-

most certainly fragment the field even more and result in an isolation of it from librarianship. Some suggestions have been made that an entirely new department—a Department of Information Science—be established. Although this may be accomplished in some of the smaller universities, the hurdles of academic structure in the larger universities will be almost insurmountable. We are, therefore, almost certainly faced with what should have been the obvious answer from the beginning. The program in extended librarianship must be centered in the schools of librarianship but must draw on the resources of the entire university.

The question remains, however, can even this be done? Recognizing that the schools of librarianship are the present centers of knowledge on how to handle information, are they really the suitable location for these

new curricula? We are faced with some very serious problems, not the least of which is the image the schools of librarianship have within the university, among the students, and within the profession itself. We are faced with barriers of fear, hostility, and overweening reverence for the past. We are faced with an apparent aversion to mathematics and science within the profession. Can these problems be overcome?

I am convinced that they can and, in fact, *are* being overcome. The image will change as those within the profession change their view of themselves and as the schools change the character of what they teach. This, then, is the challenge to the profession and to the library schools. The need is there. It is evidenced by the pressures within the profession, from government, and from science. And, where a need is felt, it will be met.

## Shoulds, Shouldn'ts—Further Comments on Library Education

THE FOLLOWING remarks and opinions have been extracted from five papers presented on library education programs at the 54th Annual Special Libraries Association Convention in Denver.

### The Folklore of Special Library Education

DR. STUART BAILLIE, Director  
Graduate School of Librarianship,  
University of Denver, Denver, Colorado

The most interesting folklore is the belief that special librarians do not need a library school degree—and that part of the reason for this belief is the fact that **many special librarians** are subject specialists and that the technique and philosophy of librarianship are of less importance than a knowledge of banking, chemistry, physics, or space science.

Special librarians live up to most of the folklore I seem to remember from earlier days. As a group they are dynamic, vital, and on the move. Individually they believe in service and give a considerable measure of it at all times. The real question at hand is an optimum system of library education for the special librarian, which will function adequately now and in the future.

The status quo situation confronting us seems to me to be as follows:

1. The core approach to library education, which first generalizes and then adds a few special courses in the final quarter, is not acceptable to many special librarians.
2. This problem may be alleviated by requiring a library education and a subject specialty. This area of difficulty is not limited to the special librarian and exists also in law, theology, and science, for example. All require more than the M.A. degree.

The special librarian has not been happy with the core approach because too much time—30 to 40 quarter hours—has been used up before the candidate can move into his specialty. Too often the special librarian, like the school librarian, assumes that all he will ever do is to work at one job—the Rocky Mountain Chemical Company. Since his present responsibilities do not include

cataloging, why should he be bothered with such a boring subject. What this special librarian seems to want is a course in Rocky Mountain Chemical librarianship tailored to his individual needs as of that moment. All he really wants, it seems to me, is a library union card, not a library education.

It seems to me that the problem here is not that of curriculum building, but one of the quality and flexibility of the library school graduate. What happens to the chemistry librarian when no position in chemistry exists in the right town in the right climate at the moment of his graduation? What happens to the science information specialist when the only job available where he must work is in the small public library? Or, placed on a wider scale, what happens to the library profession as a whole when each of us moves toward a specialty from the first day of our library education? The problems this approach would create seem too great to consider at this time.

(Presented at the General Session, "Library Education: A License to Learn," June 11, 1963.)

### The Education of Metals Librarians

L. H. LINDER, Manager  
Technical Information Services  
Aeronutronic Division  
Ford Motor Company  
Newport Beach, California

Webster says education is the act or process of providing with knowledge, competence, and desirable qualities of behavior or character, or of being so provided, especially by formal study or training. Thus, the end product of this process is the totality of the knowledge, competencies, and qualities of character acquired and retained. If we are to keep up with our profession, this process should be a continuing one for all of us, to enable us to steadily enlarge our knowledge, to sharpen our competencies, and to improve our behavior or character.

#### *Basic Competencies*

1. Be able to communicate effectively.
2. Be sensitive to the needs of clientele.
3. Be able to manage.
4. Understand patterns of communication

and the role of recorded knowledge in communication.

5. Be able to absorb facts, analyze, synthesize, and interrelate information.

#### *Special Knowledge*

1. Formal training in librarianship. It is my belief that a core of knowledge useful to all librarians exists, and this should be the basic part of the special education obtained by all metals librarians. This core consists of the following courses or their equivalent: cataloging and classification (now frequently called organization of library materials), reference and bibliography, book selection, and library organization and administration. These courses should stress principles and the development of flexibility and judgment and should encourage the student to think from generalizations to specific applications, so that this skill may be applied later on the job. Since the foregoing are only the basic courses, the forward-looking metals librarian will also seek to include in his training or study as many as appropriate of the following: abstracting and indexing, subject analyzing, subject headings, information storage and retrieval, and literature searching.
2. Subject knowledge in the area of your library's specialization. Mobility and the unpredictability of specific job opportunities mitigates against successful planning of this in our undergraduate years. The alternatives appear to be either obtaining training in as many branches of science as possible, or adding the subject competence after we are on the job.
3. Language training.
4. Special knowledge of publishing, copyright, and copying methods.
5. Courses that introduce, explain, and evaluate the latest techniques, theories, and devices for analyzing, storing, and manipulating information.
6. Courses that aid the librarian to be an expert in the literature of a subject without being an expert in the subject itself.

#### *Qualities of Character*

1. Adaptability.
2. Alertness.
3. Cooperativeness.

4. Energy.
5. Friendliness.
6. Loyalty.
7. Originality.
8. Good judgment.
9. Reliability.
10. Tactfulness.

(Presented to the Metals Division, June 10, 1963.)

### The Educational Needs of Technical Librarians

MRS. DORIS H. BANKS, Librarian  
Ground Systems Group Library  
Hughes Aircraft Company  
Fullerton, California

The question we've asked, "Is library education meeting the challenges of a changing world?" has at least one facet with an easy answer—a resounding NO from the standpoint of quantity. . . . It has been my experience that people like library work; and librarianship as a career extends large areas of satisfaction, yet the supply is short. We are too quiet about our good things; our noise level doesn't come through. . . .

As a special librarian, I am a generalist, and I defend the position. As Gordon Randall pointed out in his book review of the 1962 Cranfield Report (*Special Libraries*, February 1963) adequacy in indexing need not require a detailed subject knowledge of the field.

We are narrow-minded and short-sighted indeed if we fail to recognize the great value of experience, and equally so if we fail to recognize and credit a good job well done sans degree. It is the born qualities, those that are not learned, that lend to our profession the aura of art. But we favor science, and much that increases understanding and that adds to the ability to conceptualize can be learned. . . .

The most constructive suggestion I can offer planners of library school curricula is to distinguish between what can best be learned in class and what is best learned in the specific work situation. The understanding of concept is an intellectual exercise; the application a technicality. Our changing world's needs for improved information techniques are very pressing, so that more efficient prob-

lem solving is required. A source for direction is in the systems concepts, with understanding of man and his abilities and his limitation coupled with available resources and technologies, to develop the magic that will relate information to user needs in such a way that the user recognizes the relationship.

This leads me to a constructive suggestion for ourselves. As librarians, members of a satisfying and potentially dynamic profession, we lack unified direction. For instance, not too long ago *Library Journal* carried an ad for the head of the Science and Technology Division at the Library of Congress. Stipulations regarding library education were distinctly vague. Did anyone voice concern to colleagues, to Association officers, to the Librarians of Congress, or to any member of Congress? Is it any wonder the library schools are a little vague in thinking through their objectives when we, their products, do not feedback a clear stand. The vicious circle's whirl will be affected by almost any force in almost any direction. Let us establish a unified voice and exert its force in a common direction.

(Presented to the Science-Technology Division, June 10, 1963.)

### The Education of the Library Staff and the Library User

MRS. GRETCHEN S. KORIAGIN  
Documentation, Inc., Bethesda, Maryland

It seems clear that when talking of education for mechanization, *education* becomes experience, training, and system understanding and that the training should be in the specific system—on the job.

The education of the library staff and library users for mechanization can be summarized:

1. Design a realistic, workable system, with cooperation (or coexistence) between computer people, library people, and the ultimate system users.
2. Train the staff in the use of the system, with emphasis on the system requirements, rules, restrictions, and specific indications and implications of errors.
3. Explain the system to the users.

SPECIAL LIBRARIES

The use of large computers to aid in performing functions in libraries is new. The system design and programming are done once and when "debugged" should function effectively. The human variations, then, must be minimized through training, motivation, and system understanding.

The library staff and users have to understand and *like* the system. They must cooperate with it and work within its framework to create the desired results. There is a psychological relationship of interest and trust that must develop through education before a successful *system* can evolve.

(Presented to the Science-Technology Division, June 10, 1963.)

### Things They Don't Teach in Library School

MRS. CLAIRE K. SCHULTZ, Research Associate  
Institute for Advancement of Medical  
Communication, Line Lexington, Pa.

Librarianship is, or should be, one of the most vital, most challenging, most intellectual, and most responsible of all human occupations. Does the curriculum for training librarians reflect this? No. Why not?

I put the blame on librarians and not on the library schools. Librarians tend to be too conservative and inflexible in thinking about their role in society. . . . I think (the answer) is to become more involved in teamwork with the rest of the organization, learn more about what the clients need and how to package services well, be more flexible in applying new techniques, be more research minded so that new solutions can be found as problems present themselves. . . .

Training has a lot to do with one's ability to extend successfully into one's environment. Some of that training needs to be obtained in the school of hard knocks, some of it in a school where particular subject matter is taught, and the rest of it in library school where one learns to perform a type of function that can be applied to the communication system for almost any kind of subject matter. After that one becomes a specialist within library science and learns more about some special kind of library work. In a sound library science program the more fundamental parts of the curriculum should

be equally important for the children's librarian, the law librarian, the science librarian, the newspaper librarian, and so on.

Which of the presently available courses fall into this category? The history of books? Cataloging? Library administration? Yes, but are they fundamental enough? I think that if one is to bring imagination to the job of indexing or cataloging, a background in logic, linguistics, and semantics serves very well. If one is to be a really vital administrator of a library, it requires more management training and more basic understanding of social psychology than can be found in a library administration course. If the library profession is to do more than just cope with the status quo, an attitude of research and a competence for research must be built into at least some individual librarians. It would do a lot more good than harm to have a stringent research course in library school in which students had to measure something, either physical or behavioral, that had never been measured before. . . .

Library schools do not teach what librarians do not want to be taught. If changes are to be made in library school curricula, the impetus for it will have to come from practicing librarians who want to upgrade their own education or who want to hire people with better training than that offered in the past. . . .

I feel that librarians should be the last people in the world to shy away from digital computers or fight against their use. Library schools should be among the first academic centers to teach the functions of machines or, at least, their application to library work. . . .

It is hard for me to believe that library scientists and information scientists need to pull in different directions. I think the library schools have the power to bring all their students together into a unified program, but only if the librarians want this to happen. If the librarians want to be clerks rather than scientists, no change in the present curricula is needed—except to separate the men from the boys and provide training for those who will fill the gap that the "think small" librarians create.

(Presented at the General Session, "Library Education: A License to Learn," June 11, 1963.)



# Use of a Publishers' Catalog File In a Special Library

JOHN GADDIS

THE TERM "publishers' catalog" as used here means any kind of printed material distributed free of charge by a book publisher or dealer describing his publications and including a price list. This paper discusses the reasons why a special library found it necessary to set up a file of publishers' catalogs, how the file is organized and used, the problems the library has encountered in using the file, and the improvements that could be made to facilitate its use. An examination of library literature indicated a lack of published material on this subject, and a survey of public and university libraries in the Dallas area did not indicate any extensive use of publishers' catalogs. This article is therefore limited to a discussion of one special library's use of publishers' catalogs, but it is felt that the information may be of value to others.

## Necessity for File

The Socony Mobil Field Research Laboratory Library serves a research staff of 155 technical people. Because of the nature of the research done at the Laboratory, speed is a most important factor in the acquisition of books for the library. The median time lag between the date of order and receipt of the book now stands at 28 days, and the library is constantly seeking means of further reducing this lag. The library does virtually all of its ordering directly from publishers. In an eighteen-month period it contacted 440 different sources for 1,900 book orders.

The Field Research Laboratory Library organized its file of publishers' catalogs because the standard bibliographic tools to which the library subscribes are not designed to meet certain needs of an acquisitions li-

brarian. The library subscribes to: *Cumulative Book Index*, *Monthly Catalog of U. S. Government Publications*, *Books in Print*, *Technical Book Review Index*, *Library Journal*, and *Monthly Index of Russian Accessions*. In addition, the 460 technical journals and the 30-odd abstracting journals received in the library supply much bibliographic data on current imprints. To meet the specific needs of the acquisitions librarian these tools would have to provide:

1. *Immediacy in listing new publications.* Notices in advance of publication are of the greatest value to the library. It is desirable that at most no more than two weeks elapse between the date of publication and receipt of a publication announcement in the library.
2. *Coverage in depth of both new and out-of-print publications within the library's field of interest.* The library purchases material from a large number of sources and to be informed of new publications of only the well known scientific publishers is not enough. The library must also be aware of the publications of lesser known publishers, for example, The West Texas Geological Society. Since the library must often attempt to procure out-of-print publications, broad coverage of OP dealers and agencies is also important.
3. *Descriptive annotations as an aid to book selection.* It is important for the library to know as much about a book as possible before ordering, but the title often gives little indication of its contents. The library cannot spend the time required to order books on approval. To achieve maximum usefulness, a bibliographic tool should provide some kind of subject analysis of the book, even if just an abstract or partial table of contents.

---

The author graduated in June from the University of Texas with a minor in library science and hopes to do graduate work in library science. This paper is based on his work experience at the Field Research Laboratory Library of the Socony Mobil Oil Company, Inc., in Dallas during the summer of 1962.

The standard bibliographic tools do not meet all of these requirements. Publishers' catalogs, however, do meet them and have several unique features of their own. For example, bibliographic information concerning a certain book can frequently be found faster in a well-organized file of publishers' catalogs than in the more conventional bibliographic tools. Catalogs are especially valuable for locating prices quickly. For libraries that do not subscribe to *Publishers' Weekly* or *Publishers' Trade List Annual*, a file of publishers' catalogs would seem to be a virtual necessity. No other source of bibliographic information provides information about new books as rapidly, and catalogs often provide a fuller description of books than do other sources. Libraries that do subscribe to *Publishers' Weekly* and *Publishers' Trade List Annual* probably still find it necessary to maintain a file of catalogs, though the file could be smaller than that of a library that does not subscribe to these tools. Finally, a point of importance to libraries that operate on a limited budget is the fact that publishers' catalogs are free. If a file can be organized so its maintenance will not be expensive, considerable savings can be realized.

#### Use of the File

The Field Research Laboratory Library's file of publishers' catalogs is at present used for four purposes:

1. *Bibliographic tool.* Publishers' catalogs are often the only source of bibliographic information for obscure or recent publications. An examination of 150 recent orders showed that in 45 cases the publishers' catalog file provided the only available bibliographic information about the publication. In almost all cases, the author, title, edition, series, place, and date of publication can be obtained from a publisher's announcement. In addition, announcements of publications in a series or set can often serve as a record of the library's holdings of that series or set.
2. *Order information.* Publishers' catalogs are an important source of order information, especially since the library does a large amount of its ordering direct. A publisher's address can always be obtained from the

catalog. This is a particularly valuable feature since *Cumulative Book Index* no longer gives complete listings of publishers' addresses. The price of the publication, and occasionally its Library of Congress card number, are also given.

3. *Reference tool.* The file is an aid to the reference librarian in determining what publications certain publishers have issued or in determining what publications make up a particular set or series.

4. *Stimulating use of the literature.* For several years the library has routed publishers' announcements of new books to members of the research staff working in the field covered by the books. This was done to stimulate researchers to use the scientific literature. In a study conducted over a six-month period, it was found that 192 announcements were routed to 562 people (an average of 2.9 people on each routing slip). Of those 192 routed announcements, 126 were returned with an order for the item described. Another study is in progress to determine whether a correlation exists between the number of announcements routed and the number of books ordered. Preliminary data indicate a negative correlation. In view of this evidence that scientists learn of new publications from sources other than routed publication announcements, the library has discontinued routing such announcements pending further studies of this use of publishers' announcements.

#### Organization of the File

The Field Research Laboratory Library's file of publishers' catalogs presently occupies eight legal-size vertical file drawers with a total of 11 linear feet of space. This file contains leaflets, folders, and flysheets. Arranged on shelves are 32 linear feet of Princeton files, containing catalogs in pamphlet form. As of August 1962, 415 separate sources of publications were represented in the file. The file is organized as follows:

CLASSIFICATION	NUMBER OF SOURCES
Commercial publishers and dealers	95
Societies and foundations	85
University presses	28

Federal and state government agencies	88
OP dealers (books and periodicals)	41
Business services	42
Maps and globes	16
Russian publications	11
Journal subscription agencies	9
	—
	415

From five to ten items are added to the file each day and two to three man-hours per month are spent in maintaining it.

Annual requests for catalogs are sent to publishers and dealers by means of a form letter. Catalogs are received daily, and date-stamping and preliminary weeding of extraneous and duplicate material takes place at this time. Selected catalogs and announcements are then routed to members of the research staff thought to be interested in specific titles. Catalogs not routed are filed. The folders and Princeton files are arranged alphabetically by publisher within each classification. Finally, routed catalogs that are returned to the library are filed with routing slips after items requested have been ordered.

### Problems and Possible Improvements

Several problems still exist, all of which create difficulty in retrieval. The most troublesome problem is that of weeding to eliminate duplicates, superseded announcements, and rarely-used items. The only serious weeding presently being done is an annual removal of duplicates. A more frequent and more rigorous weeding policy needs to be established, but before this can be done, the following questions need to be answered:

1. How long should leaflets and flysheets be kept in the vertical file? At present they are kept indefinitely. Some of the items represented in these announcements have long since been listed in annual catalogs. These announcements could, therefore, be discarded.
2. How long should annual catalogs be kept? Does an occasional request for an older work justify retaining old annual catalogs?
3. How long should the catalogs of OP dealers and other special lists be kept?
4. How can these three kinds of weeding be done with the least possible time and effort?

A second major problem concerns the physical form of the catalogs. They appear in a multitude of shapes and sizes that can be broken down into at least five major categories: 1) pamphlets (with stitched or stapled binding); 2) leaflets (several folded unbound pages); 3) flysheets (single-page announcements); 4) postcard announcements; and 5) publishers' catalogs on cards. At present, pamphlets are placed in the Princeton file, and everything else is put in the vertical file. A more clearly defined policy for handling this material is necessary.

A third major problem is a lack of consistency in the classification scheme. As the file is now set up, the classification of some categories is according to the kind of publisher and in others according to the type of publication. Although this classification system worked well when the file was small, the present size of the file is such that a revision is needed. Retrieval is also made difficult by the lack of a subject approach, except through familiarity with publishers' specialties.

Consideration of the above problems suggests several improvements that could be made, both by the library and by the publishers, that would contribute to making the catalog file more useful. The library could: 1) establish a more frequent and more rigorous weeding policy; 2) establish a more definite policy on the handling of different forms of catalogs; and 3) improve its classification scheme.

Usefulness of the file could be improved if publishers could: 1) standardize the form of catalogs; and 2) provide a better subject approach to their catalogs.

The Field Research Laboratory Library's file of publishers' catalogs is a necessary and vital tool. An estimated 25 to 35 per cent of the orders processed by the acquisitions librarian can be bibliographically verified only through use of the file. Without the file, book delivery time lag would be increased, while the library's awareness of new publications would decrease. The file is used frequently enough to justify the time and space required to maintain it. Until a bibliographic tool that can meet the special needs of the library appears, maintenance of the file will be a necessity.

# Interlibrary Loan Work at The United Nations

ERNEST MAASS, Associate Librarian

Dag Hammarskjold Library, New York City

TAKE A STAFF MEMBER from Australia, a diplomat from a newly independent country in Africa, or a journalist from the Netherlands. Picture the sources for the latest official birth statistics of the 15 constituent republics of the Soviet Union, a French comment on a human rights document issued by Cyrus in 538 B.C., or the legal connotations of a fateful plane crash in Northern Rhodesia. Put these elements together, and you can gauge in some measure the nature of the work expected of the Interlibrary Loan Service at the Dag Hammarskjold Library and of the requesters it serves. You can also sense some of the opportunities and challenges presented to that Service.

Most likely the stimulation that goes with interlibrary loan work at the United Nations stems largely from the international and varied background of the readers and the wide range of subjects that are their official province. As in all human affairs, stimulation and tribulation are often intertwined in this aspect of library work. Among the readers, two extremes are well represented. One is the distinguished scholar who knows how some of the world's great libraries operate. The other is the bewildered young secretary eager to assist her chief but hardly able to distinguish between a book and a periodical article. Taken as a group, the readers differ widely as to levels of experience, educational backgrounds, and linguistic and ideological training. The Interlibrary Loan Service must be—and is—prepared to serve all of them.

The readers' needs are as manifold as the topics in *Subject Guide to Books in Print*. In one month alone requesters required information on wool market conditions, the slave trade, mining problems, dairy science, building construction costs, tourism, foreign tax laws, fisheries, plant location factors, parlia-

mentary debates on disarmament, population statistics, radiation effects on animal cells, energy requirements, boundaries, ethnographical publications, waterway disputes, civil engineering, penal codes, and industrial chemicals. The material had been written in various languages and published in a multitude of countries. Some of the world's great literature was also in demand, and the demands were processed because they were connected with official work, *Gulliver's Travels*, *Don Quixote*, and Schopenhauer's *Aphorismen*, for example.

At first sight somebody might raise an eyebrow about the nature of these requests. Should not a library holding over 200,000 volumes own most of this material, he might ask. For the Dag Hammarskjold Library the answer is "no." New York City, it is true, was chosen as the headquarters site of the United Nations largely because of the gift of land received from the Rockefeller family. However, an important additional factor was the availability of so many well known libraries. These institutions, it was hoped, would lend to the world organization materials from their vast and valuable collections whenever the need arose. That hope has been amply fulfilled. The United Nations Library has thus been able to concentrate its acquisitions in selected subject fields, to choose only what seemed to be the most important works in a given area, and to rely for the rest on interlibrary loans, within reason. Even today, given this cooperation, the Library does not acquire books in certain disciplines, such as history, for example.

## Library Cooperation

First in importance among the libraries whose help is indispensable to the United Nations is the New York Public Library (Astor, Lenox, and Tilden Foundations).

An unprecedented decision of its Board of Trustees opened the priceless reference collections of the New York Public to the United Nations through interlibrary loans, a privilege granted to no other institution on the same scale. The relationship is a contractual one and includes a number of services on the part of the United Nations, such as the deposition of all United Nations documents in the Library and payment by the United Nations of the salary of one New York Public Library staff member who is mainly occupied in filling United Nations requests. Every day drivers from the United Nations deliver UN requests and pick up boxes filled with the Public Library books. One could count on his fingers the number of days of the year when neither requests are made nor books are received.

Second in importance for the supply of loans is the Columbia University Library, another almost daily stop on the circuit of the United Nations drivers. So heavy is the volume of these transactions that special colors have been assigned, for easy identification, to the request slips sent to these two libraries.

For books and periodicals in subjects outside the usual concern of the United Nations, the Interlibrary Loan Service calls upon a host of special libraries in New York City. Medical, legal, business, and technical libraries are important lenders. Again, the assistance rendered by some of these is extraordinary. Thus, the New York Academy of Medicine, the Bar Association of the City of New York, the Engineering Societies Library, and other private institutions have extended what amounts to the privileges of membership, sometimes by exceptional approval of their trustees.

Naturally the search for an important item does not end in the metropolitan area, and occasionally it may be found only on the seventh or eighth try, far away from New York. Harvard College and the Library of Congress—to mention but two outstanding institutions—frequently help to bring a search to a successful conclusion. All told, the Dag Hammarskjöld Library receives loans from over 50 libraries all over the United States in the normal course of a year. Which libraries to approach, and in which

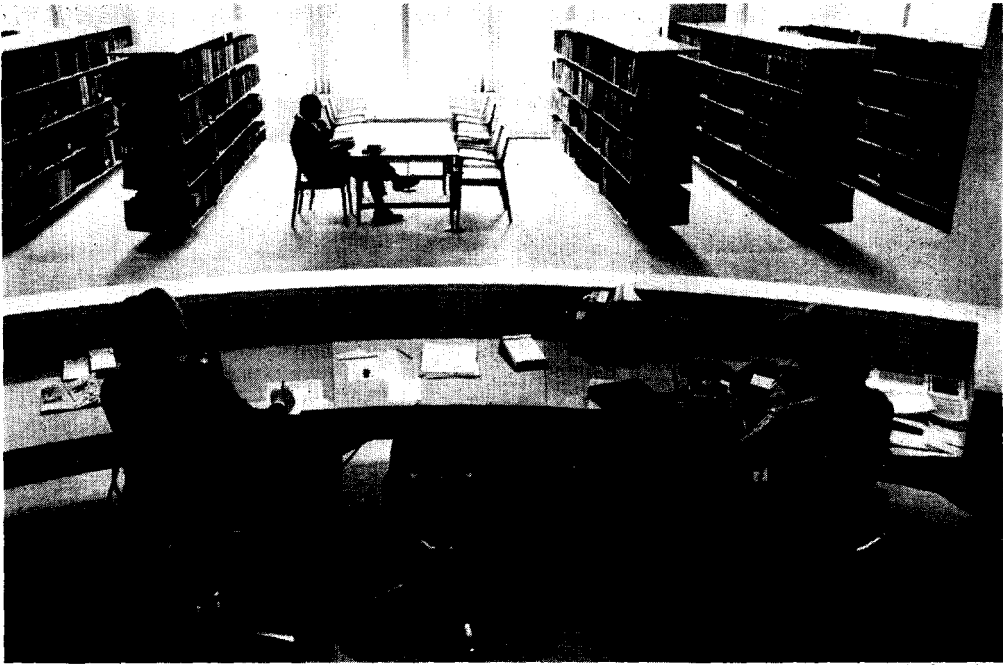
order, are decisions the staff settles on the basis of past experience and with the help of such guides as the *Special Libraries Directory of Greater New York*, the *American Library Directory*, and *Special Library Resources*.

### Search Problems

Some time ago when the beautiful Dag Hammarskjöld Library was still a steel skeleton and the library staff operated in the public lobby of the Secretariat skyscraper, a reader appeared at the Interlibrary Loan Desk with a somewhat embarrassed smile. "Is this the place," he inquired, "where you ask for books that don't exist?" It must have been the puzzled look on the librarian's face that prompted the inquirer to continue, "I mean, books you don't have in this library!" Little did the reader realize how close to the truth his original question had been—at least in some cases. Requests for non-existent books do float across the librarian's desk. A faulty memory, a wrong title, a book published in German but never in English as requested, a manuscript prematurely announced as "in preparation" and never published—these things are at the root of some quests for the impossible. Even wishful thinking leads to loan requests: ". . . The Library of Congress informed you that there is no census for Q country in 1800? Too bad! I've always felt there ought to be one," as one reader put it.

Librarians need hardly be told that this problem is met by searching each request bibliographically. To process a "rush" request without a search is very often wasteful, because the librarian at the lending library cannot be expected to check more than his own library's catalog. If the citation is incorrect, the item might easily be reported as "not available," even though it may be sitting on the shelves.

Accordingly, at the United Nations all interlibrary loan requests are searched thoroughly by the staff. Since a reader usually has some information on the book—he may have seen a publisher's announcement or a footnote—he is asked to give as much data as he can. The Interlibrary Loan Service designed a Bibliographical Work Sheet which



United Nations

View of the Main Reading Room, which is 112 x 49 feet and decorated in marble and white oak.

gives the requester an opportunity to indicate the author, title, imprint, and last but not least, his source. Many times the reader can give but the sketchiest details, and the librarian takes over. But even then the work sheet is not wasted because it makes the reader sensitive to what he ought to tell the librarian, in his own interest, to obtain the loan. Once the problem is explained to the reader, he often cooperates, sometimes to the extent of furnishing the classification number if it is a question of borrowing a missing issue in a serial.

A comment or two about the question relating to the "source" on the work sheet may not be out of place. In an unobtrusive way it invites the reader to look once more at the book or periodical from which he culled his data, and a second look can lead to a more accurate citation. But the chief purpose is to allow the librarian to consult the source personally. For instance, a reader may omit a series note, which to him is meaningless; to the librarian, it is the key to the treasure trove. A reader may request the journal of a non-existent Royal African Institute; the librarian discovers in the source that the

reader misread the abbreviation "JRAI," which stands for the *Journal of the Royal Anthropological Institute of Great Britain and Ireland*. A reader may request books apparently not yet published; the librarian notices, through the source, that the reader quotes from an announcement in the air mail edition of a foreign newspaper that arrives at the Dag Hamarskjold Library much earlier than the standard bibliographies sent by surface mail. Incidentally, since a book of such recent vintage is not eligible for inter-library loans, under the General Interlibrary Loan Code, the loan request is politely rejected and, if the case warrants it, referred to the Acquisition Section, since it may be worth while to acquire the book.

#### Bibliographical Tools

To mention each and every bibliography used would exceed the patience of both reader and writer, but it may be of interest to indicate the types of bibliographical tools consulted more or less regularly. Among library catalogs, there is the *Catalogue of Books Represented by Library of Congress Printed Cards*, its successor publications, and

accompanying subject bibliographies, or the *Catalogue Général des Livres Imprimés* of the Bibliothèque Nationale in Paris. The *Manual del Librero Hispano-Americano* by Palau y Dulcet or *Brinkman's Cumulative Catalogus van Boeken* are typical of the national bibliographies. Trade bibliographies such as *Books in Print* or the Koehler and Volckmar *Literatur Katalog* are very helpful. Also of great value are specialized bibliographies, works of the order of the *Bibliographie Géographique Internationale* or the *Introducción a la Bibliografía Jurídica Latino-Americana* by Alberto Villalón.

For periodical lists on a world-wide basis, we rely heavily on standard works like *Ulrich's Periodical Directory*, *New Serial Titles* of the Library of Congress, or guides like the *Répertoire International des Principaux Journaux et Périodiques*. Among the national periodical bibliographies publications the *Katalog Prasy Polskiej* or the *Schweizerischer Zeitschriften- und Zeitungskatalog* serve well. A union list like the *Union List of Serials* or the *British Union-Catalogue of Periodicals*, a specialized periodical index like the *Index to Legal Periodicals* or an abstract service like *Nuclear Science Abstracts* are practically indispensable.

#### Records and Relations with Readers

At the end of a search the available information (including the bibliographical source) is typed on a 3 x 5 inch slip; occasionally, and reluctantly, we are forced to admit that verification of an item was impossible. Slips are numbered in consecutive order. The original is used for the author file (arranged alphabetically); the duplicate for the chronological file (arranged numerically). In the inactive author file (material returned to the lending library), we preserve the requests of the past 16 years or so, because the material is frequently re-requested. However, slips are weeded constantly, since it is detrimental both to filing and to quick searching to keep any but the latest slip requesting an identical publication. Important information such as "also held by Harvard" is added to the latest slip as needed.

In contrast, the inactive chronological file covers only requests made during the preceding year. The reason is that the "Chron" file is useful only as long as the lending library is likely to claim its material had not been returned by the United Nations. Such claims do not usually arise after one year. When they do, they can easily be searched in the author file.

On receiving an item, a reader signs for it on the request slip. He is also given a rider instructing him when the book is due and where it should be returned (unless he is required to use the material in the library). Loans are entered on a reader's card by order number; subsequently the number is crossed out when a requester returns the material.

It is obvious that readers appreciate having the resources of so many libraries at their disposal, even though they do not always put that appreciation into words. The staff member who reports, "Remember how many sources you borrowed for us for our report? You should have seen how pleased the Commission was!" or the delegate who brings a bottle of Tokay for Christmas before he catches the plane for Utopia are still the exception.

So far as returning books with reasonable promptness is concerned, most readers cooperate, with some prompting added. But that perennial headache of librarians—how to get an overdue book back—has plagued the Interlibrary Loan Service of the United Nations also. In fact, a minority of uncooperative borrowers forced the Library to tighten its loan regulations. Typical of this minority was the "tough" reader who would not return his loans, no matter how many reminders he received. "Nobody in the other library reads that book and I need it!" was his stock reply. Not so any more. When the normal loan period of two weeks (shorter in certain cases) is over, readers receive one telephone call and one call only. Extensions are granted within limits. After that, two letters of increasing directness remind readers of their obligations. So far no further action has ever been required since the new regulations went into effect. This system works well mainly because the recalls are made every single week, without fail, and because they

leave no doubt, in spite of polite language, that the Library "means business." But pity the "tough" reader! He has changed his tune, "I used to borrow a great deal through you but now you make it so difficult for me that I request only a minimum. . . ."

### Lending Operations

If nothing has been said about the interlibrary lending operations of the Dag Hammarskjöld Library, the reason is simple—they are much fewer in number than the borrowing transactions. For one thing, libraries normally do not obtain United Nations documents from the Hammarskjöld Library but from the United Nations depository libraries strategically placed all over the United States and all over the earth. But the Library does lend material not issued by the United Nations when it appears that the item in demand is not easily obtainable elsewhere. Such is sometimes the case with elusive foreign government documents (that is, governments other than that of the United States), because member states supply their publications to the UN as requested.

### A Service in Two Directions

One may suppose that the interlibrary loan operations of the Dag Hammarskjöld Library

do not differ basically from similar operations at other institutions, except that perhaps the demand for works from a great variety of countries is unusually high. However, it is unlikely that many other libraries have depended on interlibrary loan cooperation as extensively as the United Nations Library. In the beginning, the need arose when quick library service was required even as the United Nations collections were being assembled. The need for extensive loans arose again when the new building of the Dag Hammarskjöld Library (completed 1961) was being constructed and the collections were partly stored away; at present, operations proceed at a normal pace. Thus the Dag Hammarskjöld Library is a good example of how an interlibrary loan service can contribute to well rounded library operations.

The results have not benefited the United Nations alone. Whatever material other libraries have generously lent to the international organization has been utilized in the literally thousands of publications of the United Nations, publications intended for the fight to improve man's lot socially, economically, and politically. In its own way, service has been—and is being—rendered for services received.

---

## NSF GRANT EXPANDS ACTIVITIES OF SLA SPECIAL CLASSIFICATIONS CENTER

The National Science Foundation has recently awarded a \$13,838 grant to SLA to support expansion of the services and holdings of its Special Classifications Center maintained at the School of Library Science, Western Reserve University, Cleveland. Barbara Denison has been appointed Director of the Center, which had formerly been called the SLA Loan Collection of Classification Schemes and Subject Heading Lists. The current collection totals approximately 850 classification schemes and subject heading lists in more than 400 special subject areas; all items may be borrowed, or photocopies may be purchased at cost by librarians and others who wish assistance in organizing material in specific subject fields. The collection was started in 1924 and since 1955 has been housed and serviced by the Library School

of Western Reserve University, under the supervision of Dean Jesse H. Shera. During this eight-year period the collection has grown rapidly, and through the cooperation and joint efforts of the Association's Special Classifications Committee, the Library School, the Classification Research Study Group, ALA's Classification Committee, American Association of Law Libraries, Aslib, and Unesco, many new schemes and lists have been collected, cataloged, and made available to users. The one-year grant will enable the Center to broaden the scope of the collection, purchase published schemes and lists, increase the number of duplicate copies, initiate studies, offer consultation, promote contributions and use, and compile an up-to-date list of holdings for publication.





Leslie Wilson  
Director, Aslib

# ASLIB



Lord Shackleton  
President, Aslib

ASLIB WAS founded in 1924 as the Association of Special Libraries and Information Bureaux but formally took the name of Aslib in 1949 when it amalgamated with the British Society for International Bibliography. Its 2,600 members include industrial and commercial firms, universities, national libraries, public corporations, learned societies, government departments, and colleges and institutions of various kinds as well as about 400 individuals; nearly 600 members are outside the United Kingdom. Aslib's work in microfilming enemy technical journals during the Second World War attracted government support, and approximately one-third of its income now comes from the Department of Scientific and Industrial Research. This Association and the needs of post-war industrial development have concentrated much of Aslib's activity in the field of scientific and technical information, but the social sciences and humanities are strongly represented in its membership. The headquarters staff now numbers 44.

The Association's objectives, briefly stated, are to encourage the formation of special libraries and information services and, by all appropriate methods, to promote their effective operation.

## Activities and Services

### *Research*

Since 1959 a systematic programme of research has been developed into factors inhibiting full use of available information and into methods of improving the efficiency of special libraries. Some work has already been done on the information needs and literature searching habits of scientists, on ways of overcoming the foreign language barrier to scientific communication, on the retrieval efficiency of certain selected indexing systems, and on a number of minor problems.

Current plans for the next two or three years are to investigate the potentialities of mechanisation in information work, the effectiveness of searching procedures and tools, and the need for personal, auxiliary, and accessory indexes. It is also hoped to carry out a study in depth of the information needs of scientists. The results of Aslib's researches are usually published as separate reports or as articles in the *Journal of Documentation*.

### *Library*

The Aslib library, which is both a basic tool of the research staff and a special collection for the use of members, is the principal British collection on special librarianship and technical documentation. It is now being extended as a demonstration unit and test-house for library equipment and techniques.

### *Consultancy Service*

A full consultancy service is provided by the headquarters staff for organisations wishing to establish or overhaul their own information services. Alternatively, advice can be given on specific documentation problems. Fees are by negotiation on a time-cost basis.

### *Education and Training*

Aslib is not an examining or qualifying body, though it maintains a watching brief on national arrangements for instruction and examination of information staff and offers guidance to member organisations. It offers an extensive range of short, intensive courses on special topics, *e.g.*, the use of Soviet and other East European scientific literature, literature searching techniques, the use of patents as source material, and theory and practice of classification. Longer periods, usually of one or two months, of personal tuition, supervised reading, and practical experience

are also offered. Fees are by negotiation; students have come from all parts of the world, especially the developing countries.

### *Publications*

Directories of sources of information, handbooks of information practice, surveys, and research reports are published. Four serial publications are issued:

*Aslib Proceedings*, monthly, contains papers read at Aslib meetings, news of Aslib and related activities, letters, Aslib library accessions, and references to recent articles on documentation. A subscription is included in corporate membership privileges. The annual subscription to nonmembers is 60s (\$8.40).

*Journal of Documentation* is a quarterly devoted to the recording, organisation, and dissemination of specialised knowledge. It contains articles, abstracts of recent articles, letters, and reviews. It is included in corporate membership privileges, and the annual subscription to nonmembers is 48s (\$6.72).

*Aslib Book List*, monthly, is a classified list of recent, recommended scientific and technical books in the English language. It is included in corporate membership privileges, and the annual subscription to nonmembers is 27s (\$3.78).

*Index to Theses Accepted for Higher Degrees in the Universities of Great Britain and Ireland* is an annual, a classified list, including information on the availability of theses at the various universities. A subscription is 21s (\$2.94) to members, 25s (\$3.50) to nonmembers. All rates are at present under review.

### *Information Service*

Started originally as a clearing house for members' inquiries, the service has since been extended to include literature searches, bibliographical checking, locations, and inter-library loans of uncommon material. These services are particularly useful for small firms, without fully organised library services of their own, as an educational factor in utilising external sources of information.

The Commonwealth index of unpublished scientific translations, maintained on behalf of the British Commonwealth Scientific

Committee, records the location of approximately 150,000 translations made from all languages by firms and other organisations and available for consultation or loan; about 10,000 new locations are added annually. The index is not published but is to be used as a check-list.

A document reproduction service, for which special charges are made, covers checking of bibliographical details, tracing of a copy of the original document in any library, clearance of any copyright formalities, and supply of a microfilm or photocopy. Books of eight requisition forms cost 20s (\$2.80).

### *Conferences*

An annual residential conference of about three days' duration is held in various parts of the United Kingdom; no uniform pattern is followed. Between two and five one-day conferences are held each year on a special theme of current interest, e.g., the information implications of the Common Market or coordinate indexing systems. Occasionally small working conferences are held for invited participants on selected specialised topics. Series of evening lecture and discussion meetings are held between September and May in London and provincial centres.

### *International Relations*

Though primarily a British national organisation, Aslib has nearly one-quarter of its membership overseas. It is the British national member of the International Federation for Documentation and maintains a close working relationship with other international and national documentation bodies.

### *Staff Registers*

Registers are kept of vacancies in special libraries and information departments and of candidates seeking both full-time and part-time employment. Details of suitable candidates are submitted for consideration by employers. Registers are also kept of translators with verified linguistic ability and subject knowledge, and of indexers with verified indexing experience and subject knowledge. All registers are subject to the licensing system of the London County Council. Only nominal charges are made.

## Membership

### *Provincial Branches*

In Scotland, Northern England, and the Midlands, branch committees organise meetings and advise on local training schemes. At present these activities are conducted on a voluntary basis, but plans have been drawn up for a system of regional liaison offices with permanent staff to assist and advise local member organisations and to stimulate recruitment.

### *Special Groups*

Members may join, without additional subscription, any of the special groups, at present numbering 11. They are concerned with:

Aeronautics	Engineering
Biology	Film Libraries
Chemicals	Fuel and Power
Economics	Furniture
Electronics	Technical Translation
	Textiles

Besides holding meetings, the groups compile glossaries, handbooks, cover-to-cover translations, and specialist directories. Some have undertaken revision of specific sections of the UDC or organised short courses relevant to their subject interest.

### *Fees*

Aslib's services and facilities are normally available to members only. Annual subscription rates are negotiable, but there are basic minima as follows:

Industrial and Commercial Organisations

£15.15.0. p.a. (\$44.10)

Non-Profit Organisations

£6.6.0. p.a. (\$17.64)

Special rates are available to individuals interested in Aslib's objectives but, to qualify, applicants should *not* be employed by an organisation that might reasonably be expected to take out corporate membership. All subscription rates are subject to review. For up-to-date information, write to:

The Director, Aslib  
3 Belgrave Square  
London, S.W.1., England  
Telex: 23667

LESLIE WILSON

## SPOTTED

● Found: one word to include all the ramifications of information storage and retrieval—"prohibition." ● Lost: the January 18 issue of the "Wall Street Journal" from the Air University Library at the Maxwell Air Force Base. Why? The borrower had to "chink a crack in an airplane" with it. ● The inmates of the California State Prison at San Quentin published a special National Library Week bulletin in which they told of their personal responses to the prison library. According to the staff librarian, an "outsider," in one year the men not only borrowed 60,260 books of nonfiction, 89,592 works of fiction, and 15,420 periodicals but also took part in creative writing courses, the Great Books and the Great Decisions program discussions, and debates. ● Albert Szent-Gyorgyi, a Hungarian-born, Nobel prize-winning biologist, comments on an aspect of creativity: "I, being fairly ignorant of scientific literature, could find more knowledge new to me in an hour's time spent in the library than I could find at my workbench in a month or a year. It is not truth that I am searching for; it is new truth." ● Data Information, an information clearing house, operates by a chain reaction, which causes the gathering of requests through missionary outposts in remote parts of the world, which, in turn, receive them from native farmers, business, and professional men. A volunteer staff of about 15 (originally a one-man, ex-Marine operation) researches, then relays the answers. ● Just after the publication of her novel, "The Dollmaker," Harriette Simpson Arnow had this accolade for librarians: "I always feel that libraries and librarians, rather than our institutions of higher learning, are the real educators of our adult population. The institution, if it be successful, can, at most, only make the young one curious; and so the librarians must satisfy the lifelong curiosity." ● The titles of technical papers produced by scientists at Bell Telephone Laboratories are fed into a computer, which once indexed 1,703 titles into 9,606 separate entries in 12 minutes. ● A definition from American Documentation: Training—n., the next step after self-instruction, the outstanding lack in the field today. Education is never mentioned in connection with documentation.

SPECIAL LIBRARIES

# Library Technology Project Report

GLADYS T. PIEZ, Senior Editorial Assistant

Library Technology Project, American Library Association, Chicago, Illinois

## New Project

A study of the question of the most suitable face and size of type to use in books designed for people with limited vision got under way in September. Its objective is to develop a set of standards for these books for the use of publishers and librarians. The study is being conducted for the Library Technology Project by Dr. Jack H. Prince, Associate Professor of the Institute for Research in Vision of The Ohio State University.

Dr. Prince is proceeding in three ways. He will first evaluate, for relative legibility, existing type faces and sizes ordinarily used or recommended for the use of readers with subnormal vision. As a result of this evaluation, he will then establish the most suitable type face for these readers from faces already available, but not necessarily in common usage. And finally, Dr. Prince will produce a short educational film to promote and disseminate the information he obtains. March 31, 1964, is the scheduled completion date of the study, which will cost \$1,230.

The project is the immediate outcome of a suggestion by the Chairman of the President's Committee on Employment of the Handicapped, General Melvin J. Maas. However, the lack of such standards has been the concern of the American Library Association for some years.

## Protection Report Published

The report of the protection study announced in the October 1961 issue of *Special Libraries* was published in July under the title *Protecting the Library and Its Resources: A Guide to Physical Protection and Insurance*. The report is for sale by the ALA Publishing Department for \$6.

Part I of the report is concerned with the subject of protection against physical loss and covers types of physical losses and their prevention, fire defense measures, fire pro-

tection equipment, and fire protection in library planning.

Part II deals with insuring the library. It discusses the librarian as an insurance administrator, the nature of risk, insuring physical damage to property, protection against dishonesty, liability insurance, workmen's compensation and employers' liability, construction work, recent developments in insurance, and a model insurance policy for libraries.

The appendix adds valuable material including the evaluation and insurance of great rarities by Roland Baughman of Columbia University Libraries, the salvage and restoration of damaged materials, the evaluation of library materials for insurance purposes, and an extensive glossary.

## Planning for LTP

The LTP Advisory Committee, on which SLA is represented, believes that the Project needs a long-range program with a broader operating and financial base than it has at the present time. To prepare such a program, the Committee agreed, it was necessary for LTP to develop more fully the general problem areas in library administration and the specific problems that must be solved in each area.

To help in determining what the problems are and their relative importance, three regional meetings were held last spring in San Francisco, Chicago, and New York. From ten to 12 representative librarians attended each meeting in addition to the Director of LTP and the Chairman of the LTP Advisory Committee. Members of SLA were present at all meetings. Many valuable suggestions were made by the participants, and there was a surprising unanimity of problem identification among the three groups.

A long-range program for LTP, based on the projects and ideas that came out of these meetings, is being prepared, and it is hoped it can be adopted to provide a program that

will be of increasing value to the entire library profession.

#### **Caster Project Completed**

A project to evaluate the type of caster best suited to use on book trucks, which must be moved over carpeting, has been completed. An article reporting on the results of the project appeared in the September *ALA Bulletin*. Reprints of the article are available from LTP on request.

#### **Evaluation of Photocopiers**

William R. Hawken, author of the LTP publication *Photocopying from Bound Volumes*, is evaluating new copiers as they come on the market to keep the book up to date. He has recently completed evaluations of the Docustat, manufactured by Documat, Inc.,

and the 3M "107" Standard and Portable Dry Photo-Copying Machines, from Minnesota Mining and Manufacturing Company.

The Docustat is a coin-operated optical copier, which employs the stabilization process. The "107" machines are contact reflex copiers that use the Dual Spectrum process.

The evaluations of these machines have been published as Supplement No. 1 to *Photocopying from Bound Volumes*. The supplement is available from the ALA Publishing Department for \$2.

#### **LTP Funds Approved**

The Council on Library Resources has provided funds for the operation of the Library Technology Project through the fiscal year 1963-64.

---

## **Developments in Document Reproduction**

LORETTA J. KIERSKY, Librarian

Air Reduction Company, Inc., Murray Hill, New Jersey

SLA Representative to the National Microfilm Association

**T**HE FIRST Recordak microfilming machine was installed May 1, 1928, in the Empire Trust Company in New York. This year Recordak Corporation celebrates its 35th anniversary. Several new advances in microfilming were announced by the company at the National Microfilm Association's 12th Annual Meeting and Convention held April 30-May 2 in San Francisco. The theme of the Convention was "Microreproduction: Key to International Communications." The program covered the following broad classifications: general subjects, materials, processing, and mechanized systems. Developments such as magnetic tape, thermoplastic film recording, and mechanized systems were discussed.

A new automatic retrieval system known as "Miracode" was introduced by Recordak Corporation, New York City. It permits complicated searches of extensive files of

16mm microfilm by means of a binary code system. A million pages of microfilmed documents can be scanned for one or all documents related to a particular reference in an average retrieval time of about eight seconds. The Miracode Microfilmer model MRK-1 is used in the encoding operation. A microfilmed document can be coded with as many as 1,000 descriptors. A master index prepared as part of the programming is the operator's manual. Indexing patterns can range from simple numeric sequence to a combination of numeric and word descriptor symbols. These are converted to binary code. The documents, up to 14 x 22 inches in size, can be microfilmed at one exposure at reduction ratios ranging from 12:1 to 28:1. The coding pattern is set by a series of selector slide switches that comprise the input control keyboard.

To retrieve information, the operator keys the appropriate index numbers into the push-button keyboard, which controls the electronic reading of the code patterns. The film is positioned on the screen of a Lodestar Reader-printer, which is part of the system. Documents answering the index descriptions are flashed on the screen. They can be printed one after another when the automatic print button is pushed. The keyboard controls provide the means to initiate a search, stop a search, rewind the microfilm into its magazine, advance or back up an image, center an image for print-out, or select parts of documents for print-out. The "Miracode" system is already in use by the Atomic Energy Commission, Oak Ridge, Tennessee. It represents an advancement over Recordak's earlier Image Control system and also backs up Recordak's recently announced Rotamatic Microfilmer. The company claims it can transform a mile of computer print-out to 220 feet of 16mm microfilm in 29 minutes.

Recordak has also introduced a new 35mm microfilm stock called Micro-File A-H-U film. It claims the A-H-U (Anti-Halation-Undercoat) film has higher resolving power and permits upgraded image quality. This is due to the placement of the anti-halation layer, which is combined with a new thinner and harder emulsion. It has greater resistance to abrasion and scratching and decreased light scattering. The improved image quality is transmitted to film prints and enlarged photo-facsimiles made from the negatives. The image is more readable on the screen, and the hard copy print is sharp.

Early this year, Micro III, the newest model in its line of Microcard readers, was introduced by the Microcard Reader Corporation, West Salem, Wisconsin. It is a portable reader weighing only six and one-half pounds. The outstanding feature is its capability of reading other microforms as well as Microcards. One of the accessories is an illuminator attachment for reading microfiche (sheet film) unitized cards and microfilm in jackets. The magnification ratio is 19x. The screen size is 8 x 9½ inches. Images may be viewed in ordinary room light due to the construction of the viewing screen, which rejects extraneous light. This means

that images from windows and lights are suppressed rather than reflected into the user's eyes. The reader is 9 x 13 x 3 inches and folds into a small case. Price is \$129.95.

A new private network communications system called AL PUR COM (ALL PURPOSE COMMUNICATIONS) was developed last year by Alden Electronics and Impulse Recording Equipment Co., Inc. and the Automation Management Inc., both of Westboro, Massachusetts. Basically the system combines telephone transmission lines with wide-scan facsimile equipment to handle a range of message traffic between interplant and inter-office points where volume message exchange takes place. It was demonstrated, as was the Micracode system, at the SLA Management Information Center, at the International Management Congress, September 16-20, in New York.

The facsimile system is described by Alden as "person-to-person" transmission or as "brain-to-brain" transmission. It provides immediate exchange of messages regardless of distance. The 18-inch Flat Copy Scanners accept all types of messages with little or no preparation or editing. They handle legal or letter size documents, standard drawings, memos, newspapers, cards, and other hard copy of any thickness, length, or width. The Automatic Continuous Recorders receive information on all formats of the message spectrum. As the number of messages sent per month increases, the total cost per message decreases. Optimum utilization might bring the cost down to the cost of mail.

The system has possibilities for the transmission of library type information. The ability to move information from point-to-point on a real time basis would decrease the amount of duplication of information at other libraries in a system where they were geographically distant from the central library.

A new tab card for microfilm files is available from Microseal, Chicago, Illinois. It is called "Tab-Jac." The card contains three transparent microfilm jackets, open at one end so that microfilm can be inserted or removed. Cards are available for either 16mm or 35mm microfilm and have housing capacities of 9, 12, or 15 inches of microfilm.

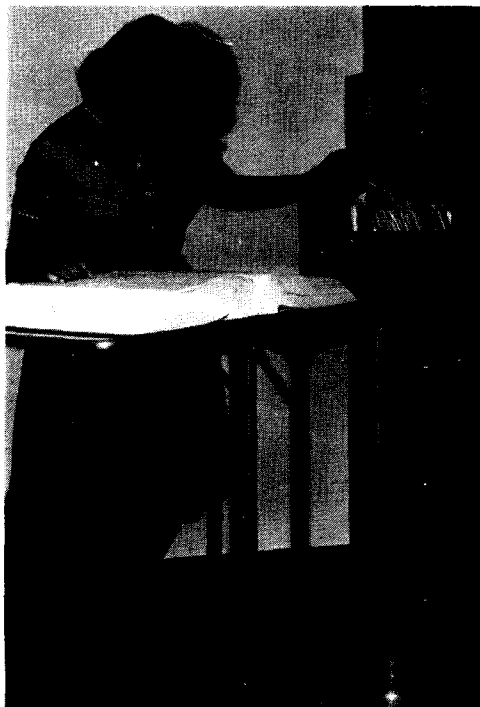
# This Works For Us . . .

## Mobile Equipment

In the Lee Higginson Corporation Library, we have a mobile card catalog cabinet that is completely flexible as to arrangement and function. It consists of units made by the Watson Manufacturing Company, Inc., which may be changed or added to. There are 15 drawers for 3 x 5 cards, each drawer 18 inches deep. Below are two shelves, each approximately seven inches high, used for sorting material to be indexed or cataloged. The top, which is 18 x 33 inches, is covered with attractive linoleum, and since it is at counter height (40 inches), serves as a sorting and writing surface.

The cabinet is mounted on swivel wheels and is easily moved. This is most convenient, as it enables a staff member to have it at her desk when the spring deluge of corporate annual reports arrive to be checked in or there are many catalog cards to file. The staff member works from a sitting position and does not remove the drawers from the cabinet. The cabinet was devised for the library by Mr. W. Z. Monday of the Monday Company, New York, and can be supplied by them for \$275.

Our mobile high typewriter table with a



The drop leaf of the high typewriter table is handy for carrying large reference works when using files, and wheels make the table accessible to any cabinet.



The mobile card catalog can be positioned for use when standing or sitting. Items to be cataloged can be placed on shelves below.

drop leaf is useful in several ways. It serves to hold material being filed, and when the drop leaf is extended, the surface, 18 x 34 inches, is large enough to alphabetize and sort items, and also serves as a reference table for library visitors making brief use of large reference books. With the drop leaf down, the table, 18 x 18 inches, can be moved easily on its swivel wheels, between rows of vertical files. Since the table is steady and the top is at counter height (36 inches from the floor), it can be used as a writing surface. This is much more effective than a filing tray. One or two shelves of wood or metal could be devised to add below.

High typewriter tables are standard equipment, and this one was manufactured by the Tiffany Stand Co., St. Louis, for \$40.50.

MRS. ELIZABETH R. BOUTINON, Librarian  
Lee Higginson Corporation, New York City

SPECIAL LIBRARIES

# Planning the New Library:

## Applied Physics Laboratory

### The Johns Hopkins University

RICHARD A. EVANS, Librarian

Applied Physics Laboratory, The Johns Hopkins University, Silver Spring, Maryland



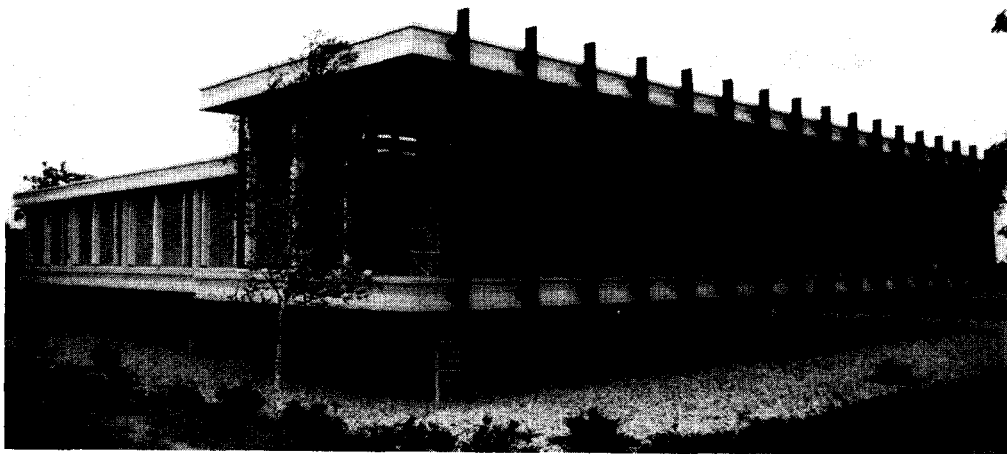
THE NEW library building at the Applied Physics Laboratory, a division of The Johns Hopkins University, attests to the significance of scientific literature in advanced missile research and development. Dedicated in June 1963, the building will house a 20-year-old collection that serves the needs of the Laboratory and augments the resources of the scientific community in the Washington, D. C. area.

Since 1942, APL has been involved in research and development for the Navy. During World War II, APL designed and developed the radio proximity fuse for anti-aircraft shells, and after the war, its guided missile research led to development of the major anti-aircraft missile defenses of the fleet. APL has also contributed significantly to the evaluation of the Polaris weapon system and has done extensive research and de-

velopment in the field of artificial earth satellites.

Mindful of the need for reference to classic literature in even the most advanced studies for missiles and space exploration, and having encouraged the development of the collection from the outset, the Director of the Laboratory, Dr. R. E. Gibson, also showed great concern for the design of the library building itself. As a reflection of this concern, he selected Stanley James Goldstein, A.I.A., as the architect of the building.

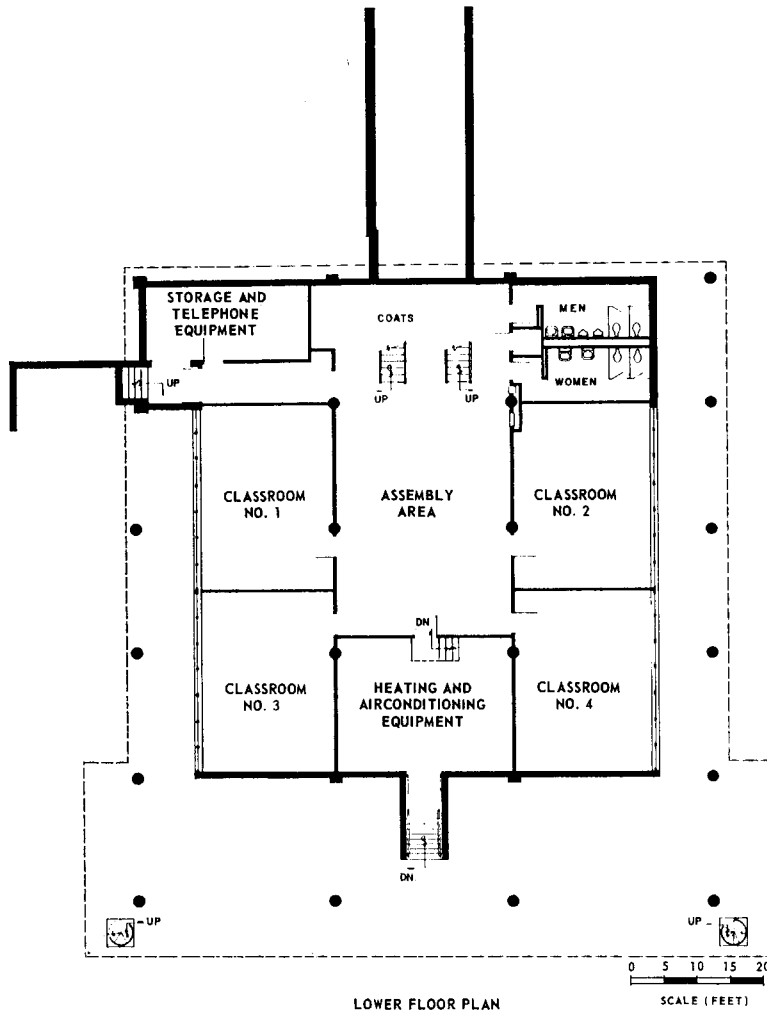
With so diverse a research program, the role of the technical library in making available the most recent scientific literature has been invaluable. Two years ago, at a time when library facilities consisted of 3,000 square feet in the main Laboratory building, plans were begun to relocate the old facility and to extend its services. These plans called for a building whose size and design would maintain an atmosphere conducive to concentrated research and study and would per-



The T-shaped library was built with glass and wood to harmonize with the surrounding landscape. The first floor is below ground level.

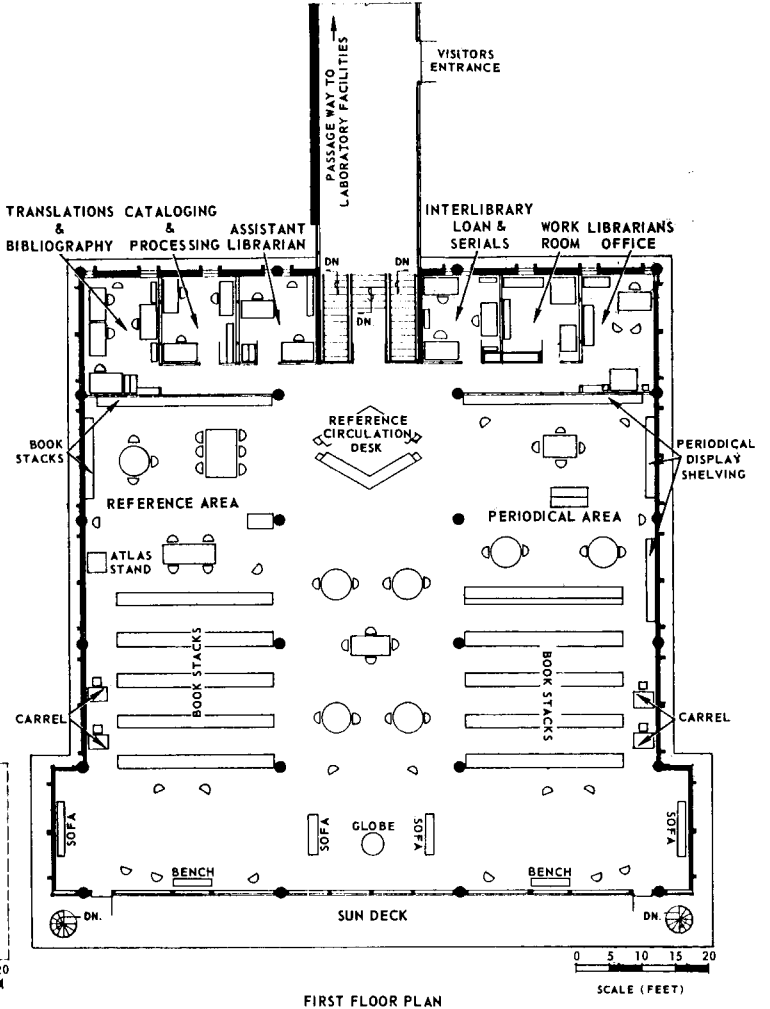


### Floor plans of Applied Physics Laboratory Library, The Johns Hopkins University.



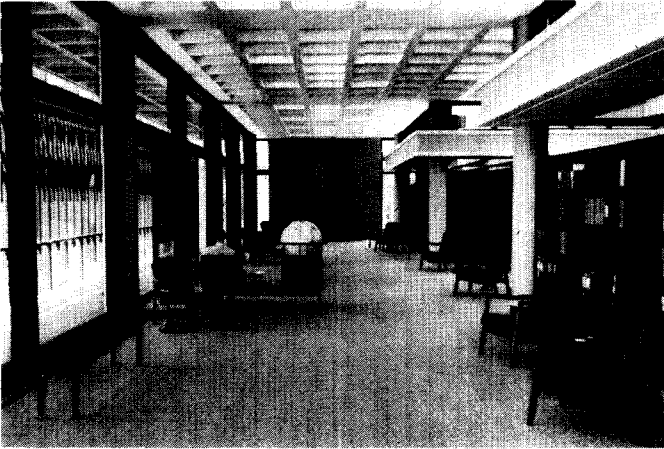
LOWER FLOOR PLAN

SCALE (FEET)



FIRST FLOOR PLAN

SCALE (FEET)



A latticed redwood sun shield filters the sun's rays in the reading and open stack area. Sun deck is at left.

mit expansion during the next decade. The external design had to be harmonious with that of the other buildings of the Laboratory complex.

The new library is a two-story building, with the 8,000 square foot first floor built at subsurface level to maintain the natural contour of the land. The second floor (10,000 square feet) houses the library's collection and staff offices. The building is constructed in the shape of a "T" of precast concrete with a curtain glass wall extending along the top bar of the "T." Sliding glass doors in the glass wall provide access to a sun deck, which overlooks the Maryland countryside. A natural color, weather resistant, redwood

sun shield filters the sun into the reading area through the glass wall. The building may be entered from the main Laboratory areas through a wide glass and brick passageway, while visitors may enter through an outside entrance without obtaining the security clearance necessary for access to other areas of the Laboratory.

In the study and reading areas, beige carpeting blends with the walnut study tables, upholstered chairs, and sofas. The colors selected for the upholstered furniture are blue, brown, and terra cotta. Walnut parquet flooring is used in the stack areas, periodical display area, and reference area.

The stack areas, located on both sides of

Looking toward main entrance past study area and circulation desk. Windows and ceiling lights provide indirect illumination.



Circulation desk has built-in card catalog, which can be used from either side of the desk. Periodicals are at rear.



the study area, are furnished with Remington Rand Library Bureau bookshelves finished in walnut. Remington Rand bin-type periodical display shelves are used because they best suit the purposes of the library.

The reference and periodical areas, located opposite each other to the left and right of the main entrance, are furnished with walnut study tables and chairs convenient to the current journals and reference materials. Study carrels and reference tables in the stacks provide additional convenience for Laboratory staff members.

The central reference and circulation desk, designed by Fenton L. Kennedy, APL Document Librarian, is constructed of walnut and is in the shape of two opposed chevrons. It has adequate space for three persons to work simultaneously during those times when the demand for service is exceptionally heavy. An unusual feature of the desk is the built-in card catalog on the side facing the study area. The catalog drawers may be opened from either side of the desk, thus providing accessibility for the user and the attending librarian. Large planters, adding to the general decor of the library, have been constructed on the four corners of the chevrons. All incoming telephone calls are received in this area and relayed to specific offices as required.

The first floor contains a large assembly area, four classrooms each accommodating 40 students, rest rooms, cloakroom, storeroom, and heating and air-conditioning equipment. The classrooms may be used for educational

programs, conferences, meetings, or briefings.

Library services are provided by 14 full-time staff members. Services include reference, circulation, literature searching, bibliography compilation, interlibrary loan, translation, and Xerox reproduction. The staff members of the translation service of the library provide oral and written translations on request and are proficient in Russian, German, French, and Italian. Fields of special concentration include aerodynamics, aerospace, automation, chemistry, electronics, engineering, geophysics, mathematics, physics, and propulsion.

The library publicizes its resources and services in a serial publication entitled the *APL Library Bulletin*. The accessions series of the *Bulletin* (biweekly) lists recent acquisitions, book reviews, conference proceedings, selected periodicals, articles published by APL personnel, bibliographies, and translations. *Bulletins* of the translation series are published as complete translations (irregular), abstracts of foreign scientific journal articles (biweekly), tables of contents of foreign language journals (biweekly), and translations available from sources other than the APL Library (irregular). A colorful leaflet containing a floor plan of the library and a sample copy of the *APL Library Bulletin* is given to each new employee by the Personnel Office during his Laboratory indoctrination. Book jackets of recent and significant new acquisitions as well as important announcements pertaining to the library are displayed, on a rotation basis, on several

bulletin boards conveniently located in the many buildings that comprise the facilities of the Applied Physics Laboratory.

Plans for the immediate future include the application of computer techniques to the journal resources of the library. By use of a computer, the library intends to provide reading lists of current journal titles, ar-

ranged alphabetically by subject and title, and information on the renewal of journal subscriptions. In the more distant future, studies will be made of the application of computer techniques to several other areas of the library operation, and such techniques will be introduced when feasible.

*All photographs courtesy APL, The Johns Hopkins University.*

#### VITAL STATISTICS FOR APPLIED PHYSICS LABORATORY LIBRARY

Total square foot area	18,000
Library proper	10,000
Lower level	8,000
Staff	14
Professional	5
Nonprofessional	9
Employees served at location	2,400
Average number of users per day	250
Volumes (books and bound and unbound periodicals) as of June 1963	40,000
Current periodical subscriptions	600
Vertical file shelves	15
Date of completion	March 1963
Planned by librarians and architects	
Special facilities or equipment: Microcard reader, microfilm reader, Xerox 914 office copier.	

## Have You Heard . . .

### New LTP Staff Appointments

Late in July, Forrest F. Carhart, Jr. became Director of the Library Technology Project, replacing Frazer G. Poole who resigned to become the Director of the University of Illinois Undergraduate Library in Chicago. Mr. Carhart has been with the Project since its first month and its Assistant Director since August 1, 1960.

Replacing Mr. Carhart as Assistant Director is Richard W. Luce who came to LTP from the Continental National Insurance Group, Chicago, where he was Librarian. Mr. Luce received his M.A. degree from the Graduate Library School of the University of Chicago. He is a member of the Committee on Insurance Periodicals Index and the Immediate Past-Chairman of the Insurance Division of SLA. He is also a mem-

ber of the Nominating Committee of the SLA Illinois Chapter.

The new head of the LTP information service is David R. Hoffman. Before joining the LTP staff, Mr. Hoffman had been Administrative Assistant to the Secretary of the Wisconsin Free Library Commission since 1959. He received his M.S.L.S. degree from Western Reserve University in 1955.

### Coming Event

Seminars on Systems for the Organization of Information are being sponsored this fall by RUTGERS UNIVERSITY GRADUATE SCHOOL OF LIBRARY SERVICE. The first of the two seminars scheduled so far concerns the Universal Decimal Classification system and will be held October 31 to November 1. The subject for the December 5-6 seminar is Syntag-

matic Organization Language (SYNTOL). Details are obtainable from Dr. Susan Artandi at the library school, New Brunswick, New Jersey.

### Three CLR Grants

The Committee to Investigate Copyright Problems Affecting Communication in Science and Education received a \$700 grant from the Council on Library Resources, Inc., to study the feasibility of setting up a clearing house, or copying service, for the benefit of owners of copyrighted material and those wishing to make one or more photocopies of it. The service would routinely collect royalties according to a fixed rate scale for the publishers and their authors. Publishers' participation would be on a voluntary basis.

The need to establish a regional science library and information center in Claremont, California is being investigated by Harvey Mudd College, Honnold Library, and representatives of industry in the area. The survey, with the help of a \$5,000 CLR grant, calls for the study of the academic and industrial resources in the area, which would be shared by the scientific community.

A survey of the major indexing and abstracting services for library science and documentation in the United States and Europe is being conducted by H. Allan Whatley, F.L.A., with a \$2,000 CLR grant to the Library Association, London. Mr. Whatley, who is a lecturer at the Scottish School of Librarianship, Glasgow, and editor of *Library Science Abstracts*, will study, evaluate, and make recommendations for the improvement of methods of production, cooperation between editors, and effectiveness of the services in countries where they are used.

### Biomedical Translations and Directory

The National Library of Medicine is attempting to add to the availability of biomedical information by granting, through its Extramural Program, contracts for translating and abstracting foreign biomedical literature and the preparation of a directory of Soviet research institutions. Biological Abstracts, Inc., will translate and/or abstract Soviet literature, which will be published in its

journal. Excerpta Medica Foundation, Amsterdam, will do similar work on both Russian and Japanese literature to be published in *Excerpta Medica*. Fordham University, New York, will compile a "Directory of Medical and Biological Research Institutions in the USSR," and the Federation of American Societies for Experimental Biology, Inc., Bethesda, Maryland, will provide selective translation and publication of other foreign research information in its journal.

### Members in the News

WALTER HAUSDORFER, Professor of Bibliography at Temple University and Library Advisor to Temple's Sullivan Memorial Library for 17 years, will retire this year. He was SLA President in 1944-45, a member and chairman of the Philadelphia Library Council, and a member of the executive committee of the Board of Directors of the Union Library Catalogue. He was also the author of 1944 and 1956 editions of SLA's *Handbook of Commercial, Financial and Information Services*.

DR. THEODORE C. HINES, former Assistant Professor at Rutgers University's Graduate School of Library Service, has become Special Assistant to the Dean, Columbia University School of Library Service. DR. SUSAN ARTANDI will replace Dr. Hines as principal investigator for the Rutgers information seminars being given with the aid of a National Science Foundation grant.

### AMA Company Library Seminar

The American Management Association sponsored a workshop seminar, "Establishing and Managing the Company Library," at the Hotel Astor, New York City, September 11-13. A capacity audience of 15 attended the seminar, the third of its kind. Discussion was centered around six general problems—mission and objectives of the company library, organization, library facilities, service systems, specialized services and techniques, and service criteria and controls—and included a question and answer period from the registrants. Alice G. Anderson, Librarian, Raytheon Company, Wayland, Massachusetts, was discussion leader.

# Off the Press . . .

## Book Review

THE PRODUCTION AND DISTRIBUTION OF KNOWLEDGE IN THE UNITED STATES. Princeton, N. J. Princeton University Press, 1962. 416 p. \$7.50.

Fritz Machlup, one of America's foremost economists, Professor at Princeton, and currently President of the American Association of University Professors, will be remembered by the library world for his creative pioneering of an important new library technique—the first and only publication to critically evaluate and grade for size of library all books in a major subject field (*Economics Library Selections*, Johns Hopkins University, 1954-63).

Again Machlup has approached closely to the boundary of the library world (since knowledge is obviously the sole commodity dispensed from libraries) in his pioneering synthesis, analysis, and definition of "the knowledge industry."

His definition includes education (at schools, in the home, on the job, at church, or at libraries), research and development, printing and publishing, photography, stage, screen and broadcasting, advertising, telecommunication, conventions, and the portions of such professional services as law, engineering, architecture, medicine, and accounting that are concerned with diagnosis and advice.

He finds that this sector of the economy, never before analyzed in terms of its contribution and function to the total economic system, comprises 28.7 per cent of the total gross national product and is increasing at the rate of 8.8 per cent per year, compared to a 3.7 per cent per year growth rate for other goods and services. Thus, the rate of increase is two and one half times as great. Machlup does not emphasize, as he perhaps should, that unemployment is virtually no problem in the "knowledge industry" but is of the most critical importance in the production of goods and services.

The interaction between educational or "knowledge" activities, capital investment, and growth in goods and services is of profound contemporary concern to economists. Does an investment in the knowledge industry result in increased goods and services, or vice versa? Machlup has made a significant contribution in quantitatively defining the knowledge industry but does not develop any basic solution to this chicken or egg dilemma.

For each aspect of the knowledge industry, Machlup reviews the history of the economic development, assembles the basic statistical data, discusses the type of knowledge distributed and the allocation of human, fiscal, and natural resources, evaluates the output in terms of its productivity, growth, and contribution to the body of knowledge, and sometimes makes recommendations for new economic relationships.

Libraries or information agencies as distinct institutions are not discussed in the text, and the statistics relating to libraries are incomplete. It is frustrating and tantalizing to a librarian to see how closely he approaches, yet eludes, a new definition and appreciation of the key role of librarianship (particularly in America) in relation to the knowledge industry. Only by extrapolation and implication can the reader develop this relationship. Here is a challenge for a librarian interested in economics (or an economist interested in the function of libraries) to write a sequel to Machlup's initial work.

Useful as a reference source, this book is filled with a wealth of charts and indices assembled from the leading statistical series of the Census Bureau, Department of Commerce, Office of Education, National Science Foundation, and others. The profound analysis and integration of these statistical sources (dependent on the new wealth of statistical information first available since the Second World War) is a commendable feat in extracting significance from economic statistics in a format understandable to the layman.

Any library purchasing any books on research and development, computers, publishing, or education would want Machlup's book because of the significant summaries on current developments and prospects in each of these areas. These summaries are, in effect, separate books within a book and go far beyond the discussion needed to develop the validity of the knowledge industry as a model.

His essay on education is particularly noteworthy. He makes many recommendations for basic reforms of our educational system. He is strongly in favor of equality of opportunity in education, but he is highly critical of our practice of forcing children to attend school after the age of 14 and fears that this practice results in more harm than good. He proposes that all grades be accelerated so that all pupils would learn in nine years what now takes 12. He is convinced that high school is largely a repetition of the earlier years, with great economic waste and loss of potential labor. He is also fearful that college might become a glorified high school.

Despite the pertinence of this book to basic problems in contemporary economics, the text is uncomplicated and readable. From his willingness to cut through conventional conceptions and formalizations, one sees a man with broad interests and an original and critical mind.

This is a seminal work, one that will undoubtedly be referred to in many citations in the future by authors who will seek to explore further the implications highlighted by Machlup's brilliant searchlight.

ROBERT T. JORDAN  
Council on Library Resources, Inc.  
Washington, D. C.

## SLA Official Roster

The Special Libraries Association *Official Directory of Personnel 1963-1964* is now available from Association Headquarters in limited supply for \$1.50. Copies, which have been issued to the Advisory Council and the Board of Directors, include the names, addresses, and other pertinent information about the Board of Directors, Committees, Chapter and Division officers, Special Representatives, and Headquarters and other Association personnel.

## British Technology Index

The Library Association, London, has published its first annual volume of *British Technology Index*, a 900-page volume covering all major articles in 400 British 1962 technical journals in the fields of engineering, chemical, and manufacturing technology. The volume, which is part of a service including monthly subject indexes, includes 28,000 subject entries having about 50,000 cross references.

## Surplus 1950 and 1954 Census Reports

The Bureau of Census is planning to dispose of its remaining supply of publications of the 1950 Censuses of Population and Housing and the 1954 Census of Agriculture. Copies of the *County and City Data Book, 1956* are also available. Requests will be filled on a first-come, first-served basis while the supply lasts. Interested persons should write to the Publications Distribution Section, Bureau of the Census, Washington, D. C. 20233.

## SLA Authors

ADAMS, Scott. Medical Libraries Are in Trouble. *Library Journal*, vol. 88, no. 13, July 1963, p. 2615-21.

BRODMAN, Estelle. Introduction to Continuing Education of Medical Librarians. *Bulletin of the Medical Library Association*, vol. 51, no. 3, July 1963, p. 354-6.

———, et al. Mechanization of Library Procedures in the Medium-sized Medical Library: I. The Serial Record. *Bulletin of the Medical Library Association*, vol. 51, no. 3, July 1963, p. 313-38.

BURNESS, Jean F. Canadian Library Association. *Library Journal*, vol. 88, no. 14, August 1963, p. 2844-6.

CAMPBELL, Irene R. *The Role of Fluoride in Public Health: The Soundness of Fluoridation of Municipal Water Supplies*. Cincinnati: University of Cincinnati, 1963. 107 p. pap. Apply.

CLARKE, Robert F. The Impact of Photocopying on Scholarly Publishing. *Library Journal*, vol. 88, no. 13, p. 2625-9.

DARLING, Louise. Development of Training Programs in American Medical Libraries. *Bulletin of the Medical Library Association*, vol. 51, no. 3, July 1963, p. 339-53.

FILBY, P. W., comp. *Calligraphy and Handwriting in America, 1710-1962*. Caledonia, N. Y.: Italmuse, Inc., 1963. pap. \$6; \$5.50 with remittance. Copies may be ordered from the author at the Peabody Institute, Baltimore. (361 examples of 252 years of American handwriting and calligraphy plus names of private or public collections where they are found.)

HAWTHORNE, Gladys. Library Moving Made Easy. *ALA Bulletin*, vol. 57, no. 7, July-August 1963, p. 671.

HINES, Theodore C. Conference Reports: Special Libraries Association. *Library Journal*, vol. 88, no. 14, August 1963, p. 2842-4.

HOLLEMAN, Marian Patterson. President's Page. *Bulletin of the Medical Library Association*, vol. 51, no. 3, July 1963, p. 421-4.

KLEMPNER, Irving M. The Influence of Photoreproduction on Library Operations. *Library Resources and Technical Services*, vol. 7, no. 3, Summer 1963, p. 244-53.

PAINTER, Ann F. Convertibility Potential Among Government Information Agency Indexing Systems. *Library Resources and Technical Services*, vol. 7, no. 3, Summer 1963, p. 274-81.

SHARP, Harold S. *How to Use Your Library*. New York: Consolidated Book Service, Inc., 1963. 17 p. pap. Apply.

TAUBE, Mortimer. Extensive Relations as the Necessary Condition for the Significance of "Thesauri" for Mechanized Indexing. *Journal of Chemical Documentation*, vol. 3, no. 3, July 1963, p. 177-80.

WILKINSON, William A. et al. Information Retrieval at the New Monsanto Information Center. *Journal of Chemical Documentation*, vol. 3, no. 3, July 1963, p. 174-7.

## New Mexico Libraries Directory Published

The first directory of public, special, and university libraries in New Mexico, *Libraries of New Mexico*, has been published by SLA's Rio Grande Chapter. This 16-page multilithed listing is based on information received from questionnaires submitted by public, university, and special libraries listed in the *American Library Directory* and from libraries whose librarians are affiliated with the Chapter. The data for the 89 libraries covered, arranged alphabetically, include the name of the library, address, telephone number, name of the librarian, size of the collection, if the library is open to the public, loan regulations, contact for inter-library loans, copying and microform reading facilities, special collections, and special features. There is also a subject index. The compilation is the work of the Chapter's Library Resources Committee under the chairmanship of Barbara Hendry, Serials Librarian and Assistant Head of Technical Processes, Los Alamos Scientific Laboratories, Los Alamos, New Mexico. A limited supply of copies is available at \$1 each from Mrs. Eleanor Tedesco, 7309 McNeerney Avenue, N.E., Albuquerque, N. M.

## Education in Medical Librarianship

Much of *The Bulletin of the Medical Library Association* for July 1963, volume 51, number three, has been devoted to continuing education in medical librarianship. One of the articles, "Development of Training Programs in American Medical Libraries," was written by Louise Darling, newly elected MLA President. Also included were four papers, which were part of the first annual report of MLA's Committee on Continuing Education—"Continuing Education in the Professions," "The Medical Library Association and Continuing Education," "Evaluation of the Association's Past Performance and Suggestions for the Future," and an "Introduction," written by Dr. Estelle Brodman, Committee Chairman.

## RECENT REFERENCES

### Cataloging and Classification

*Film Cataloguing Rules*. London, England: Aslib, 1963. 71 p. pap. 14s., members; 18s, nonmembers.

Compiled by the Cataloguing Committee of the Aslib Film Production Librarians Group, rules cover complete films, newsfilms, picture material, and sound effect and dubbing tracts of sound materials. Information on added entries, style, definitions, abbreviations, and examples. Index.

FOSTER, Donald L., comp. *Notes Used on Music and Phono-record Catalog Cards* (Occasional Papers no. 66). Urbana, Ill.: University of Illinois Graduate School of Library Science, December 1962. 39 p. pap. \$1.

Compilation of examples taken from Library of Congress catalog cards primarily from 1959-1961. Notes show listing of composer, medium of performance, history, further necessary data. Only notes pertaining exclusively to scores, records, and other music materials are included.

*Guide to the Universal Decimal Classification (UDC)*, B.S. 1000C:1963 (FID no. 345). London: British Standards Institution. 128 p. pap. 15s plus postage.

Section 1 deals with the theory and use of classification in the library; section 2 outlines the UDC schedule in several categories; and section 3 lists some of the libraries using UDC.

HERALD, Althea C. *Processing Manual; A Pictorial Workbook of Catalog Cards*, 2nd ed. Teaneck, N. J.: Fairleigh Dickinson Press, 1963. 88 p. pap. Apply (L.C. 61-15899).

Illustrations indicate proper color of cards and type. Includes general directions for cataloging with variations for individual libraries, and cards for phonograph records, government publications, Microcards, and other catalog cards. Blank cards are printed for individual library's variations to be indicated. Subject index.

SWAIN, Olive, comp. *Notes Used on Catalog Cards; a List of Examples*, 2nd ed. Chicago: American Library Association, 1963. v, 82 p. pap. \$1.75 (L.C. 62-21563).

Alphabetical list of explanations and phrasing for simple and complex cards for books, including autographs, bibliographic history, commemorative publications, corrections, dissertations, reprints, translations, works based on broadcasts, and others.

### Information Systems & Handling Techniques

AMERICAN LIBRARY ASSOCIATION. *The Library and Information Networks of the Future* (RADC-TDR-62-614). [Chicago, Ill.]: April 8, 1963. vii, 43 p. pap. \$2 (Sold by OTS, Washington 25, D. C. and Library 21, ALA, 50 East Huron Street, Chicago 11).

Prepared for the Rome Air Development Center, Air Force Systems Command, Griffiss Air Force Base, New York. Describes the structure and organization of Library 21 and includes a summary of the planning ideas. The second section presents the concepts of regional information networks, and Section 3 is a compendium of applicable systems and equipment, available and theoretical.

BAGG, Thomas C. and STEVENS, Mary E. *Information Selection Systems Retrieval Replica Copies: A State-of-the-Art Report* (NBS Technical Note 157, December 31, 1961). Washington, D. C.: National Bureau of Standards, 1962. iv, 172 p. pap. \$1.25 (Sold by the Government Printing Office).

Description of 15 systems employing search-type selection principles, historical development, and microfilm aperture card systems and related devices. Conclusion is that processes can be achieved by available technology, and the principal problems that remain are those of initial human analysis of content, man-machine communications, and realistic user requirements. Bibliography.

BOTTLE, R. T., ed. *Use of the Chemical Literature*. London: Butterworths, 1962. x, 231 p. \$7.

Fifteen articles on various aspects of chemical literature, some of which are based on lectures at the Liverpool College of Technology. Includes discussion of libraries and their use, periodicals, translations, abstracting, patent literature, basic reference works, and others, plus glossary of terms used in photocopying and microfilming, work sheets, and index.

CENTER FOR DOCUMENTATION AND COMMUNICATION RESEARCH, Western Reserve University, School of Library Science. *Information Retrieval in Action*. Cleveland, Ohio: Western Reserve University, 1963. 323 p. \$7.50 (L.C. 63-13361).

Twenty-five papers presented at the Center on April 18-20, 1962, concerning research, development, and operation activities in machine searching systems at the Center. Includes a guide to the organization of case histories, an author and corporate name index, and a subject index.

*Current Research and Development in Scientific Documentation*, No. 11 (NSF-63-5). Washington, D. C.: National Science Foundation, 1963. xxi, 440 p. pap. \$4 (Sold by Office of Technical Services).



Descriptions of over 500 research projects in 264 organizations, including 79 foreign organizations and five independent projects. Discussion of methods, problems, and equipment. Index of individuals and organizations and subject index.

## CLASSIFIED ADVERTISING

*Positions open and wanted—50 cents per line; minimum charge \$1.50. Other classifieds—75 cents a line; \$2.25 minimum. Copy must be received by tenth of month preceding month of publication.*

### POSITIONS OPEN

**BUSINESS, Science and Technology Division Head** for public library. Opportunity to develop collection and services for business and industry as well as general public. New building being constructed. Growth possibilities available through personal contacts and aggressive promotional and experimental programs. Fifth year degree required. Usual benefits. Salary begins at \$6,200. Near Chicago. Write Jack Chitwood, Director, Rockford Public Library, Rockford, Illinois.

**ASSOCIATE LIBRARIAN**—For a large medical, research, and educational institution. Applicants must have a degree in library science with progressively responsible library experience. Areas of responsibility will include supervision and training of nonprofessional library personnel, acquisitions,

and binding. Interested applicants should contact the Personnel Manager, The University of Texas, M. D. Anderson Hospital and Tumor Institute, Texas Medical Center, Houston 25, Texas.

**PURDUE UNIVERSITY, Lafayette, Indiana.** Five professional positions: Processing supervisor (\$8,400); Cataloger (\$6,300); Assistant Head, serials unit (\$7,000); Assistant Reference Librarian (2) (\$6,000). Library degree required. Excellent opportunities in medium-sized library system (600,000 volumes, 136 staff total) in a state university of 17,000 students and 1,650 faculty members. Board range of established specialties in science, engineering, agriculture, pharmacy, veterinary science, industrial administration and home economics, but with rapidly growing departments in humanities, social sciences and education as well. Annual expenditures on the libraries are over \$1,000,000. Professional librarians have academic status and participate in generous fringe benefits and privileges. For further details apply to John H. Moriarty, Directory of Libraries, Purdue University, Lafayette, Indiana, enclosing small ID-type photograph.

**SCIENCE REFERENCE LIBRARIAN**—Wayne State University, Detroit. Starting salary \$5904-7475; automatic annual increment; 37½ hour week, month vacation, sick leave, social security, group insurance, TIAA-CREF retirement plan. Position open about December 1, 1963. Apply G. Flint Purdy, Director.

# NCR

## TECHNICAL LIBRARIAN

Position available for a person qualified to direct our Technical Library operation. Person should be familiar with technical publications used by Engineering and Research personnel; and be familiar with current library techniques.

BS or MS in Library Science is preferred; however, specific experience will also be considered.

Relocation paid; salary open.

For confidential consideration send resume to:

T. F. WADE, TECHNICAL PLACEMENT  
THE NATIONAL CASH REGISTER COMPANY  
MAIN & K STREETS  
DAYTON 9, OHIO

an equal opportunity employer

## LIBRARIANS!

### THE JOB:

Positions immediately available in new branches, subject departments, technical services, children's work, and bookmobiles.

### THE SALARY: \$516-\$641 PER MONTH

(Experienced librarians may start above minimum.)

### THE PLACE:

Los Angeles, where the climate is always good.

### THE FUTURE:

Good opportunity for professional growth and promotional advancement in a growing system; 35 librarian promotions within the last 12 months.

### STUDENTS MAY APPLY DURING THEIR LAST SEMESTER OF LIBRARY SCHOOL.

### LIBRARY DEGREE & U.S. CITIZENSHIP REQUIRED

For additional information write to:

Civil Service Department  
Los Angeles City Hall  
Room 5A  
Los Angeles 12, California 90012

---

**POSITIONS WANTED**

---

**ART LIBRARIAN**—B.A., M.A. (Art History), fifth year A.B.L.S., 15 years experience university libraries. Now Architecture Librarian, seeks museum or SL post. Write Box B 113.

**CATALOGER**—Male, M.L.S., 34, married. Humanities background. 8 years academic experience in cataloging and technical services, rare books, and teaching. Seeks administrative position. Write Box B 120.

**LIBRARIAN**—B.A., M.S.L.S. Recently assistant special business library, seeks position. Interest in collection containing Spanish and French. Write Box B 96.

**LIBRARIAN**—Woman desires responsible position in Chicago area technical or business library. Eleven years experience, including 9 years administrative. Will start company library. Box B 117.

**REFERENCE LIBRARIAN**—Young woman, M.L.S. degree, six years experience. Desires reference position in Manhattan advertising, film, TV, theatrical, music, or art library. Salary open. Box B 121.

---

---

**WANTED TO BUY**

---

**PERIODICALS**, duplicates, surplus for cash or exchange. Write for free Library Buying List. Canner's SL, Boston 20, Massachusetts.

---

**MISCELLANEOUS**

---

**JAPANESE PATENTS**—chemical, metallurgical, electronic devices and components, illustrated abstracts three weeks after publication from \$30 p.a., partial translations any patents quoted from C.A. or other sources airmailed same day. Rotha Fullford Leopold & Associates, P.O. Box 13, Black Rock, Victoria, Australia. Established 1953.

**LIMITED BUDGET?** Unlimited wants? Try our specialized free book-find service and solve both problems. Astonishingly successful finds and low prices make you happy. Send want lists to Martin Gross, Bookseller, One Beekman Place, New York 38.

---

**QUICK SEARCH**—prompt reports! Send us your hard to find book list. Cambridge Book Service, Box 18L, Cambridge 40, Massachusetts.

---

**MEDICAL LIBRARY ASSOCIATION PUBLICATIONS**

## Serials:

**VITAL NOTES ON MEDICAL PERIODICALS** \$ 5.00 year  
Records births, deaths, and title changes  
3 times a year

**BULLETIN OF THE MEDICAL LIBRARY ASSOCIATION** \$10.00 year  
Articles of interest to all librarians  
(\$12.00 foreign)  
4 times a year

## Monographs:

**DEVELOPMENT OF MEDICAL BIBLIOGRAPHY** \$ 5.00  
by Estelle Brodman. 1954  
An important contribution in the history of  
science bibliography

**HANDBOOK OF MEDICAL LIBRARY PRACTICE** \$10.00  
edited by Janet Doe. 2d ed. Chicago,  
American Library Association. 1956  
Discusses problems common to all libraries

## Indexes:

**BULLETIN OF THE MEDICAL LIBRARY ASSOCIATION**  
v. 1-40, 1911-1952 \$ 3.50  
v. 41-50, 1953-1962 \$ 2.00

**MEDICAL LIBRARY ASSOCIATION**  
919 North Michigan Avenue, Chicago, Illinois 60611

# Literature of Executive Management:

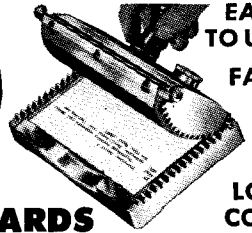
*Selected Books and Reference Sources for the International Businessman*

SLA Bibliography No. 5  
**Charlotte Georgi,  
Editor**

A selective, annotated listing of almost 500 books, journals, newspapers, and information sources of value to management personnel. Since it was prepared especially for the XIII International Management Congress held in New York City in September 1963, it is international in scope, with an emphasis on current materials. The philosophy, international aspects, science and technology, education and development, and history of management are treated in separate chapters as are books by and about executives, foreign language publications, and magazines, journals, and newspapers. Prices are given in most cases, and addresses of publishers and book dealers in the United States and abroad are included at the end as is an author index. Seven subject specialists assisted in the compilation, which was edited by the Librarian of the Graduate School of Business Administration, University of California, Los Angeles.

136 pages    1963    \$4.25

**Special Libraries Association**  
31 E. 10th St.    New York 10003



EASY  
TO USE  
—  
FAST  
—

AT  
LOW  
COST

## PRINTS CATALOG CARDS

Hundreds of Libraries—big and small—now print 3 x 5 professional catalog cards and postcards (any quantities) with new precision geared stencil printer especially designed for Library requirements. Buy direct on Five Year Guarantee. FREE—Write TODAY for description, pictures, and low direct price. **CARDMASTER, 1920 Sunnyside, Dept. 410, Chicago 40**

### SWETS & ZEITLINGER

Keizersgracht 471 & 487  
Amsterdam-C. Holland

New and Secondhand Bookdealers  
Current Subscriptions

Periodicals, Sets, Backfiles, and Separate  
Volumes.

*American Representative*

### WALTER D. LANTZ

555 WOODSIDE AVE., BERWYN, PA.

Suburban Philadelphia Phone: Niagara 4-4944



Complete composition, press and pamphlet binding facilities, coupled with the knowledge and skill gained through fifty years of experience, can be put to your use—profitably

## THE VERMONT PRINTING COMPANY

Brattleboro, Vermont

PRINTERS OF THE OFFICIAL JOURNAL  
OF SPECIAL LIBRARIES ASSOCIATION

# Two International Research Journals

## International Journal of Immunochemistry

**Regional Editors:** Dan H. Campbell, Chairman, California; Alain Busard, France; Henri Isliker, Switzerland; Fred Karush, Pennsylvania

Scheduled for publication early in 1964, IMMUNOCHEMISTRY is a new international journal intended to serve as a specific medium for material dealing with the chemical and physical aspects of immunology and related problems.

Immunochemical literature has heretofore appeared in a wide variety of publications. It is the purpose of this journal to eliminate the necessity for such dispersed publication. Not intended to replace any of the present journals dealing with general immunology, IMMUNOCHEMISTRY is more specifically a chemical journal dealing with antigens and antibodies, physical aspects of immune mechanisms and methodology or investigations related to such subjects.

Four types of articles will appear: original experimental investigations not previously published; preliminary reports of original work, and editorial-type articles dealing with some problem in immunochemistry; Book Reviews; and Comprehensive Critical Reviews of major problems of general interest.

Published quarterly.

Annual Subscription Rate: \$40.00

---

## Comparative Biochemistry and Physiology

Sponsored by the Division of Comparative Physiology, American Society of Zoologists

**Editors:** Dr. G. A. Kerkyt, Dept. of Physiology and Biochemistry, University of Southampton, England. Professor Bradley T. Scheer, Dept. of Biology, University of Oregon, U.S.A.

COMPARATIVE BIOCHEMISTRY AND PHYSIOLOGY publishes the results of original research by outstanding scientists on the biochemistry and physiology of animals, approached mainly from a comparative point of view.

*Some Papers Recently Published:* C. C. Thornburn and A. J. Matty: The effect of thyroxine on some aspects of nitrogen metabolism in the goldfish (*Carassius auratus*) and the trout (*Salmo trutta*). James W. Campbell: Urea formation and urea cycle enzymes in the cestode, *Hymenolepis diminuta*. James W. Campbell and Thomas W. Lee: Ornithine transcarbamylase and arginase activity in flatworms. G. A. Kerkut and G. A. Cottrell: Acetylcholine and 5-hydroxytryptamine in the snail brain.

Published monthly.

Annual Subscription Rate: \$60.00



**PERGAMON PRESS, INC.**  
122 EAST 55th STREET  
NEW YORK 22, N. Y.  
OXFORD LONDON PARIS

Tiger . . . Five O Last . . . Galahad . . . Measles . . . Priest . . . Samos . . . Gaolbird . . . Ivory Snow . . .  
 Rachel . . . Oatmeal . . . Albert I . . . Galla Vanters . . . Monkeypuzzle . . . Mush . . . Daisy Cutters . . .  
 The Black Monocle . . . Soxo . . . Louis the Louse . . . Zuni . . . Dagwood . . . Maczuga . . . T-Bone Hill

For General  
 Reference, and all  
 Special Collections  
 in . . .

Military History  
 Aviation  
 U.S. History  
 Aerospace  
 Defense Technology  
 Weaponry  
 Naval History  
 Rocketry  
 Atomic Energy  
 Meteorology  
 Communications  
 Slang  
 World War II  
 Korean Conflict  
 German History  
 Modern Languages  
 Data Processing  
 British History  
 Logistics  
 Ordnance  
 Canadian History  
 Place Names  
 Electronics  
 Chinese History  
 Nuclear Science  
 Russian History  
 Military Engineering  
 Aviation History  
 Space Technology  
 French History  
 Cartography  
 Climatology  
 Australian History  
 Geography  
 History of Science  
 Japanese History

Identify These and 10,000 Other Terms in

# CODE NAMES DICTIONARY

A Guide to Code Names, Slang, Nicknames,  
 Journalese, and Similar Terms:

**Aviation, Rockets and Missiles, Military,  
 Aerospace, Meteorology, Atomic Energy,  
 Communications, and Others**

NOWHERE ELSE can you find identifications for the puzzling, often crucial, always intriguing words sampled above . . . words which are almost certain to turn up begging for identification in nearly any library, sooner or later.

These words represent the formerly hush-hush names of military operations, fantastic new weapons, space hardware, secret names for places and people, nicknames for aircraft and other equipment, slang which is or has been in vogue in the armed forces and related activities, and other esoteric terminology.

CODE NAMES DICTIONARY provides key facts about each mysterious term, such as: nature of event; date of occurrence or period in which term was used; location; characteristics of missiles, aircraft, other named equipment; cross references.

10,000 Terms—550 Pages—\$15

### Contributing Editors

**Captain J. A. Skiera**

*Office of the Secretary,  
 United States Air Force*

**James L. Trainor**

*National Aeronautics and  
 Space Administration*

**Norman A. Matson**

*U. S. Weather Bureau  
 Department of Commerce*

**Rowland P. Gill**

*Office, Chief of Military History  
 Department of the Army*

*Introduction by*

**Eric Partridge**

ORDER ON APPROVAL TODAY!

## Gale Research Company

2225 Book Tower

Detroit 26, Mich.