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*October 1968, vol. 59, no. 8*

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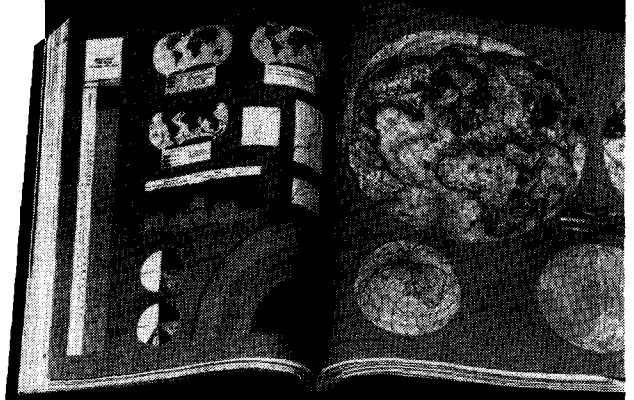
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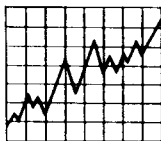
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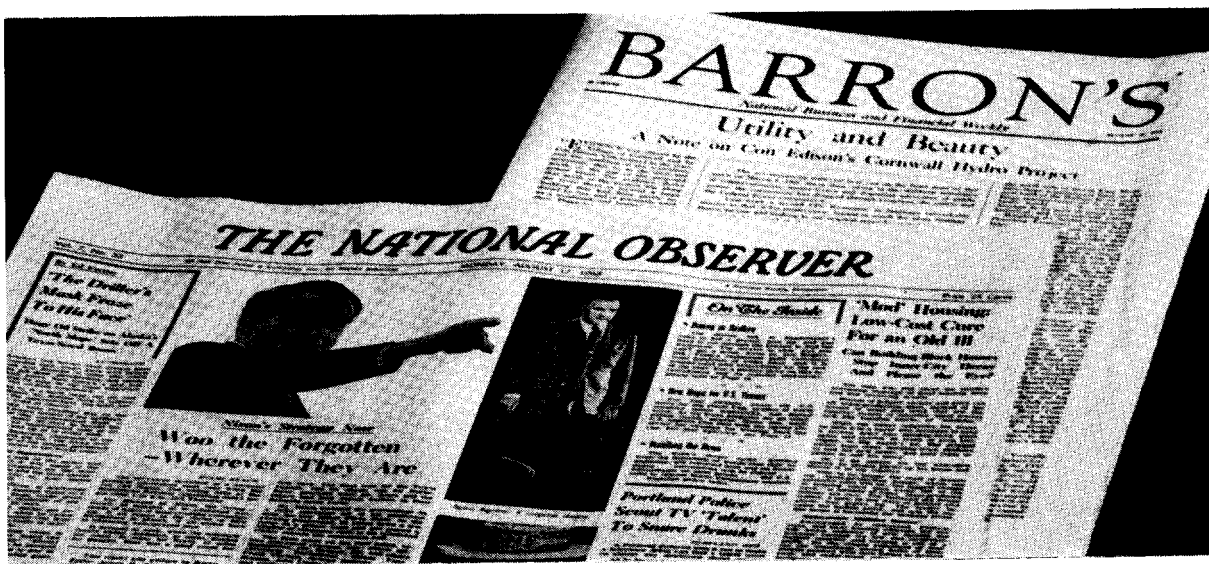
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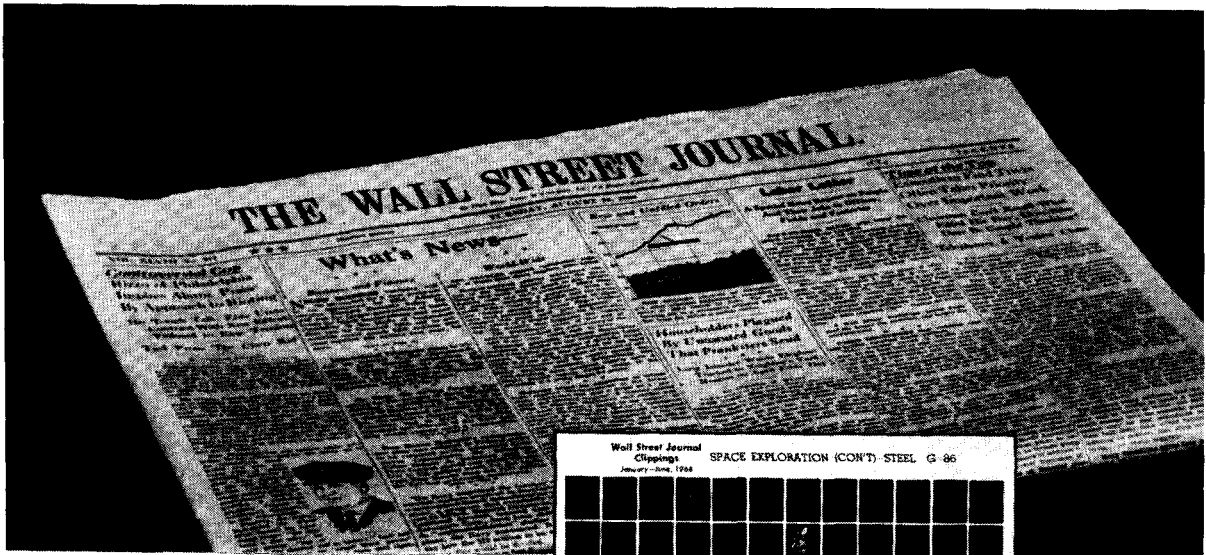
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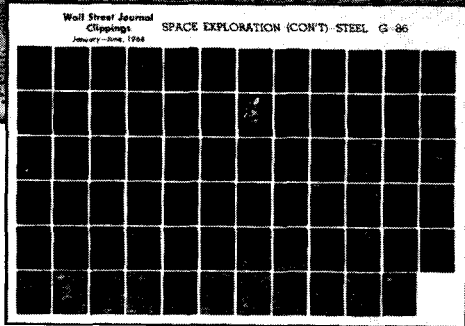
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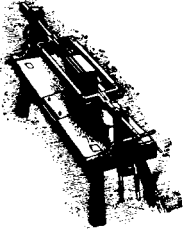
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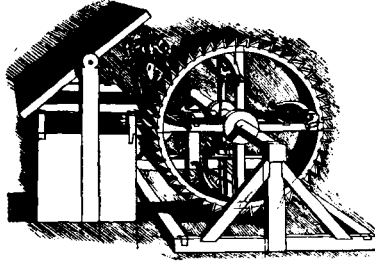
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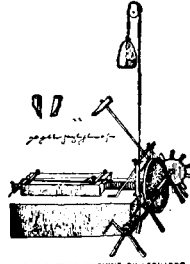
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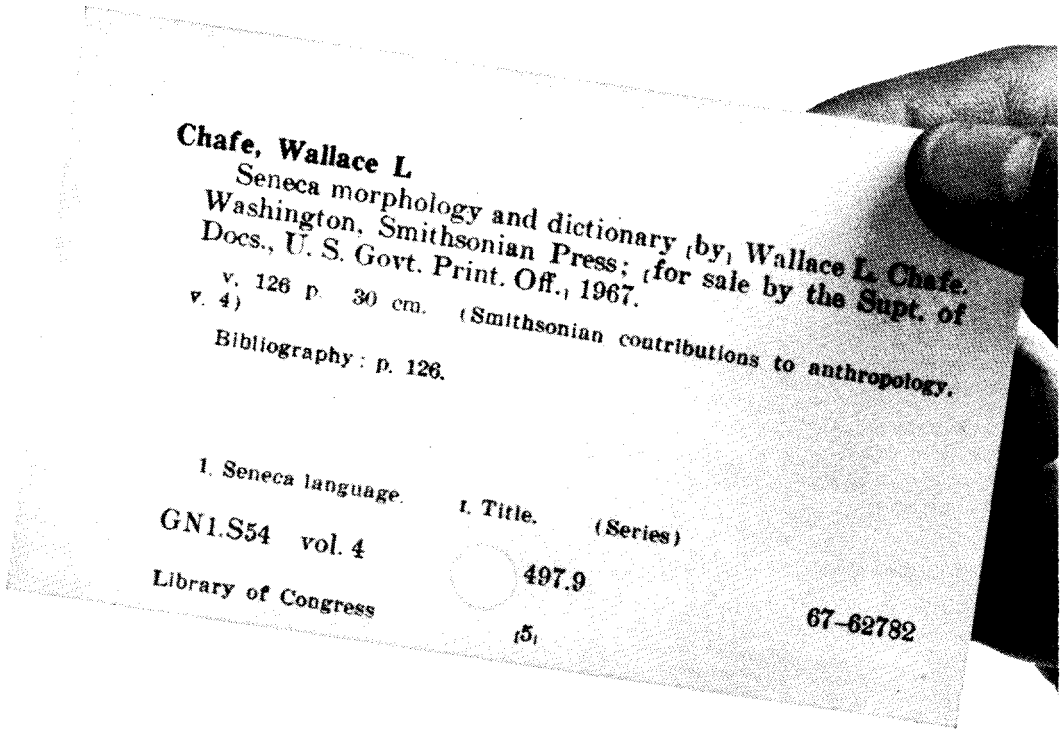
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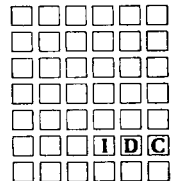
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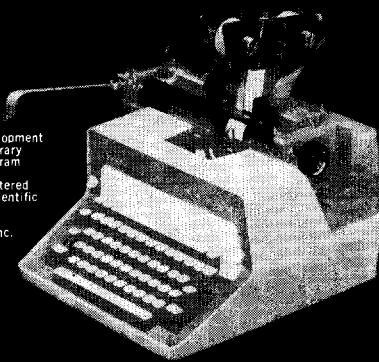
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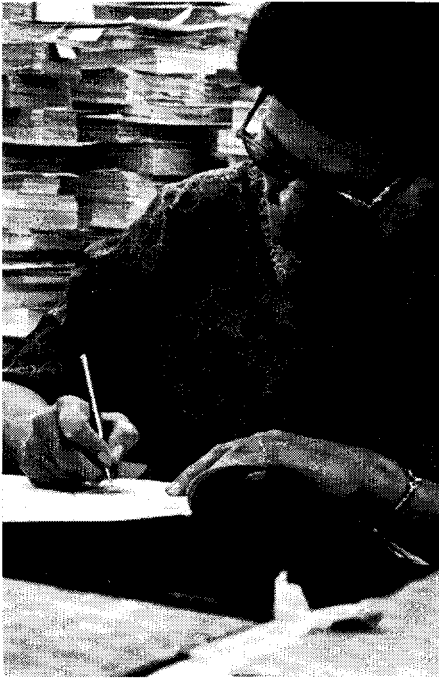
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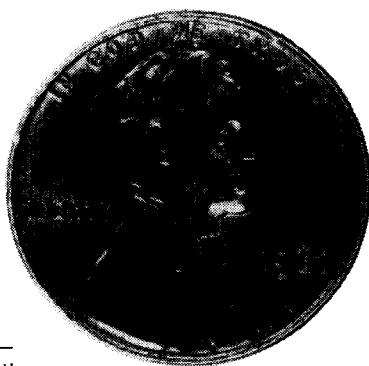
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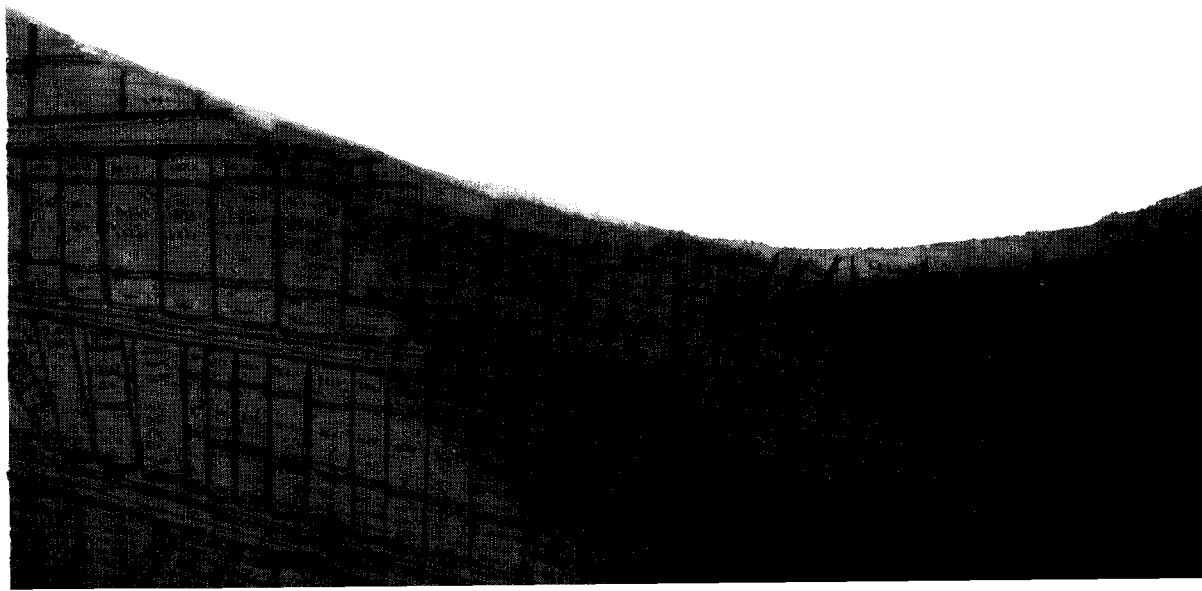
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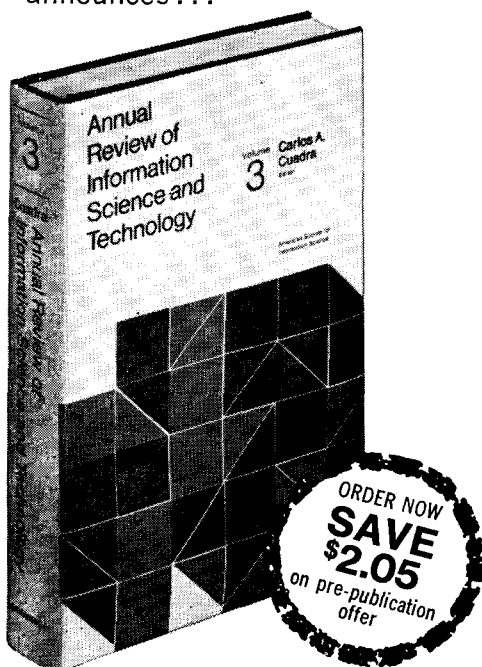
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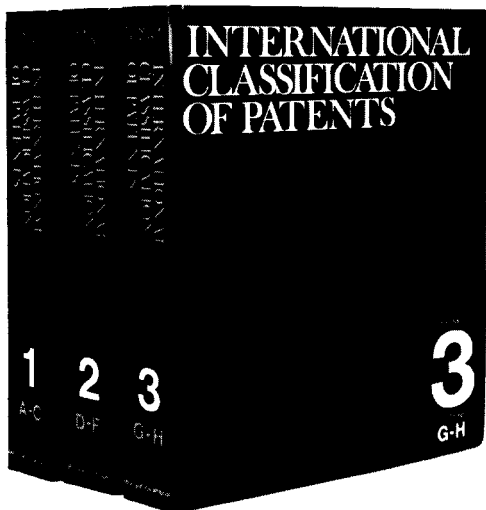
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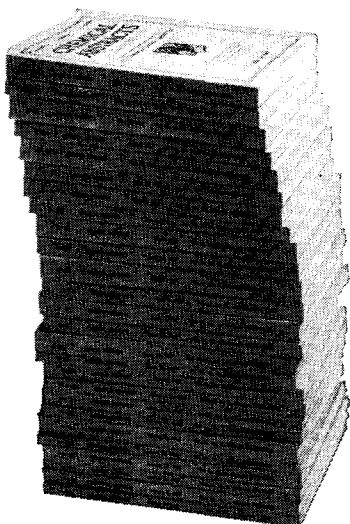
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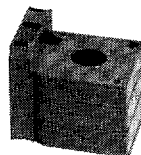
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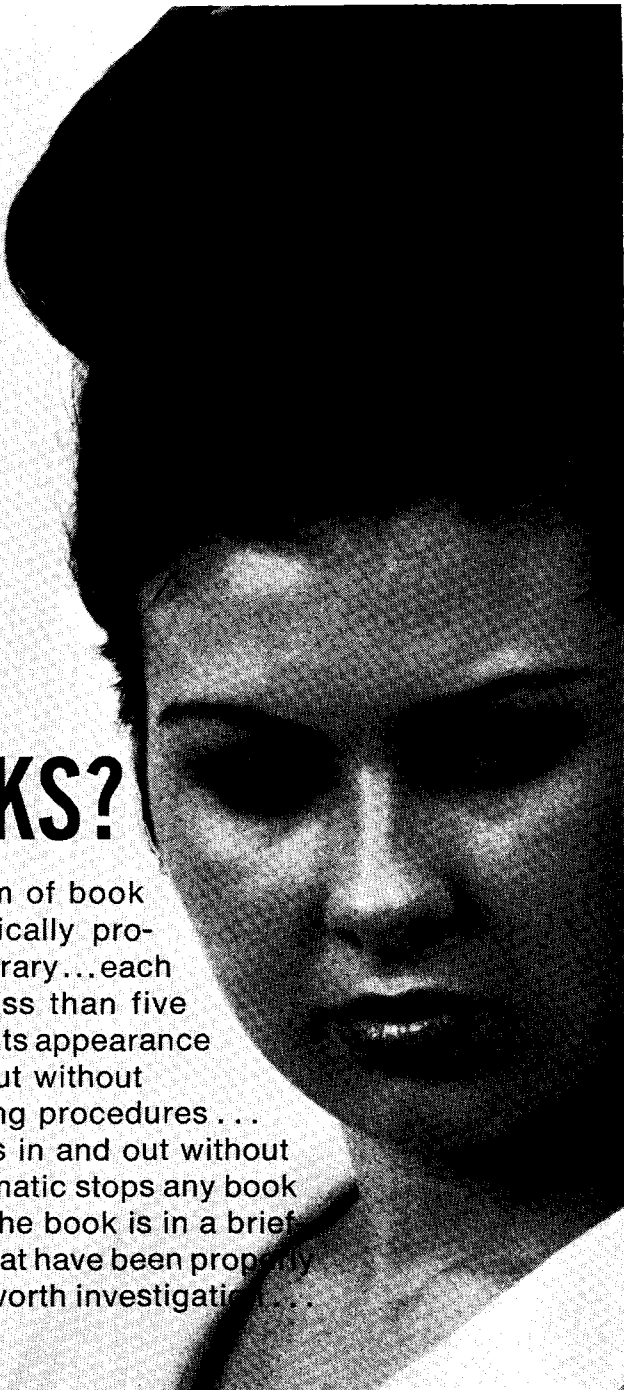
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### A Symposium of the New York Library Association

NYLA'S RESOURCES AND TECHNICAL SERVICES SECTION, through its Technical Committee, sponsored a program on preservation during the 74th Annual Conference of the New York Library Association (October 11, 1967). The symposium was planned to offer a complete, even though brief, presentation of major points as a general introduction to the subject of preservation for librarians and other interested persons. The moderator was Robert G. Krupp, Chief of the Science and Technology Division, New York Public Library.

Because of the favorable response to the program, NYLA/RTSS undertook to seek publication of the papers so as to give a wider distribution of this particularly useful and interesting information. Of the four papers, one by Richard D. Smith, "Guidelines for Preservation," has already appeared in *Special Libraries* (May-June 1968). Mr. Smith's paper set the stage for the symposium. The papers by Mrs. Hannah B. Friedman, Frazer G. Poole and Dr. Menahem Schmelzer completed the program.

The New York Library Association, a state chapter affiliated with the American Library Association, has as its objective the development of libraries and library service of all kinds within New York State. The Resources and Technical Services Section is one of five groups within NYLA devoted to library activity within a specific sphere of oper-

ation. With approximately 325 members, the section's objective is to contribute to the development of such activities as acquisitions and resources for reference and information work; the organization, preservation and care of library materials; and the establishment of procedures and systems encompassing various library operations. RTSS furthers its aims by its programs at the Annual Conference and through committee activity during the year. NYLA/RTSS membership cuts across boundaries; it includes technical services librarians and reference and resource librarians from all types of libraries and library systems—including school, public, college and special libraries, as well as library school faculty.

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Friedman



Poole



Schmelzer

Various ways and means being applied to restore and preserve deteriorating book papers both here and abroad are discussed. The roles played by the late William J. Barrow, the Association of Research Libraries, the Council on Library Resources and the New York Public Library are described. A plea is made for the use of paper of lasting quality in newly printed books.

# Preservation of Library Materials

## The State of the Art

HANNAH B. FRIEDMAN

SCHOPENHAUER, THE GREAT GERMAN PHILOSOPHER, once referred to libraries as the "only secure and permanent memory of mankind." This universal memory of mankind embodied in printed books is threatened with total destruction unless something is done, and done immediately.

Wars, floods, fires, censors, and other catastrophes have played havoc with books in the past. Whole libraries have been lost and some never replaced. With the advent of the 19th and 20th centuries, a new enemy threatened the book: the very paper on which the book is printed has—in itself—the seeds of its own destruction. In addition, this modern paper cannot withstand the threatening elements outside: dust, air pollution and extremes of temperature and humidity. As librarians, keepers and protectors of books, we have a responsibility to mankind; to explore the possibilities of finding methods of restoring and preserving books and of insuring their continued availability for as long as possible.

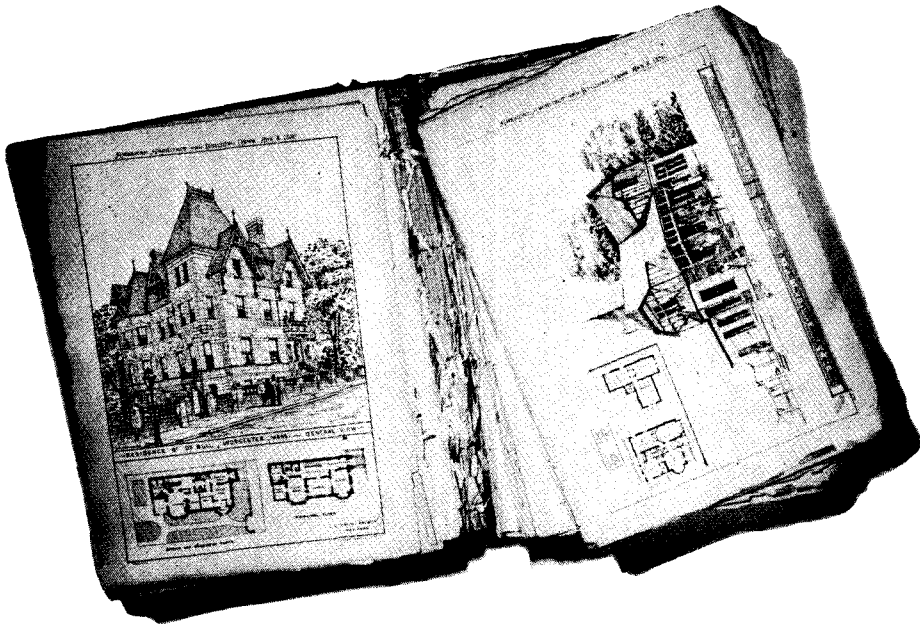
Before discussing the state of the art of preservation, we should read the definition of the word "preservation" from Webster's Third International Dictionary:

"Preservation is the act of preserving or state of being preserved; to keep safe from injury, harm or destruction; guard or defend from evil; protect; save; to keep alive; intact, in existence, or from decay."

From a library standpoint the scope of preservation includes: care and repair of books;

binding (both routine and extra); storage, shelving, cleaning, care in transporting and handling; air conditioning, ventilation; special treatment for newspapers, pamphlets, clippings, maps, films, phonorecords, pictures, rare books, unique material, archives; special processes such as deacidification and lamination; re-enforcement; enemies of books, such as mildew, insects and foxing; replacement of deteriorated material by microforms, reprints; reading and print-out equipment; paper and printing ink. Knowledge of the chemistry of paper as well as of physics of light is needed for all the items listed; the preservation of library materials is not merely an art but a science as well.

Libraries both in the United States and abroad have been aware for some time that books were deteriorating and they have tried various methods of conserving this material. A cursory examination of the literature on the subject, dating back to 1885, shows not only concern over the deterioration of library materials and its causes, but also methods of restoration and reproduction. However, it was not until the late William J. Barrow delved into the causes of the physical disintegration of paper and the extent of such deterioration, that libraries really became more aware of this problem. Thanks to Mr. Barrow and the generous help of the Council on Library Resources, the causes of deterioration of book papers are now better known, the principal target for attack has been identified, and a solution has been provided: deacidification and lamination. This method—because it is so expensive—is applied primarily to



archival documents and rare books, both here and abroad. Many other contributions can be traced directly to Mr. Barrow: the development of a permanent/durable book paper (a number of paper manufacturers now offer paper which meets the Barrow specifications), and print transfer (used successfully for rare documents in the Library of Congress). At the time of his death, Mr. Barrow was working on deacidification in connection with restoration work in Florence.

### A Central Agency

While Mr. Barrow was working in his laboratory, the Association of Research Libraries, in 1960, realizing that the problem was critical and that it probably could not be solved adequately by individual libraries, set up a Committee on Preservation of Research Library Materials. This committee concerned itself with such essentials as preservation of materials of research libraries; the use of the best preservation methods; establishment of a central agency to assure the physical and lasting preservation of at least one specimen of all disintegrating books and to make copies of these records available to any library when required; and also to seek federal support and to set up a bibliographical control

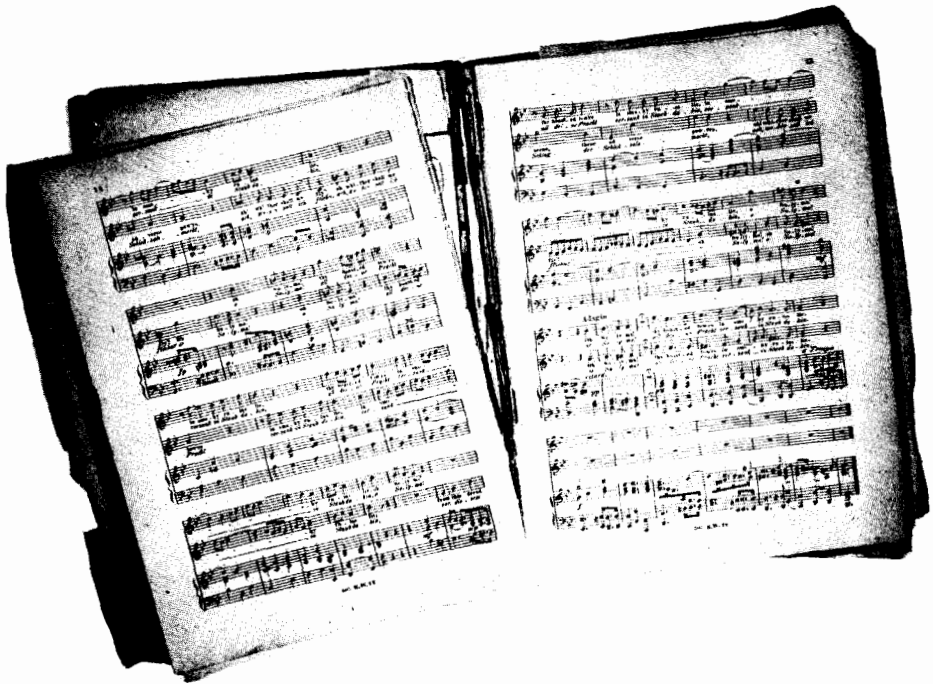
of microforms through the National Register of Microforms. A summary of the findings of the committee with recommendations for a solution was published in an admirable report by Gordon Williams.<sup>1</sup>

In January 1967, through a grant from the Council for Library Resources to the Association of Research Libraries, a pilot project now known as the "brittle book project" was inaugurated at the Library of Congress. This was the beginning of a national preservation program. Routines have been set up for obtaining information about the availability of the same works in other libraries. The New York Public Library, a member of the Association of Research Libraries, is cooperating in the project while at the same time proceeding with its own preservation program. A report on 24 books identified by the Library of Congress as brittle, which are in the collections of the New York Public Library, was forwarded to the Library of Congress. Presumably, the information will help to determine the comparable condition of books in various libraries and will record pertinent data in a central register showing the location

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Music Score Showing Deteriorated Condition before Restoration.

of the best copy for preservation purposes. Future plans will be based on such information.

#### Efforts of the New York Public Library

The New York Public Library has been relentless in its effort to cope with the rapid deterioration of its collections. Some of the material in our Special Collections is kept under controlled temperature and humidity; and our own bindery gives it special attention when required. The bindery mends pages, mounts on silk, laminates, makes protective cases for rare books and manuscripts, mends and matches leather, and prepares special bindings. When necessary, it also fumigates material acquired from foreign countries in its own fumigation chambers. Early in 1967 the bindery successfully restored water-damaged books from the Rare Book Division. What can be said about the material in the general stack areas and the other public service divisions? Which methods have been primarily used to preserve it?

One of the answers is microfilming. Micro-

filming in the New York Public Library began in the 1930's. Initially it was limited to newspapers printed on wood pulp to preserve them and to reclaim the space they occupied. The filming of periodicals and monographs followed. Microfilming—of material too deteriorated for restoration by any other method, or too bulky to keep on the shelves—is the order of the day. In 1967 a breakthrough came in the type of filming, especially for certain categories of material. While conventional roll film is excellent for newspapers and for long-run periodicals, microfiche lends itself admirably to monographs and short-run periodicals. Fiche has been found to be less costly, and it has added advantages: quick and ready fileability, elimination of splicing and easy identification. Routing, processing, cataloging, storage and servicing of microfiche have also been solved and procedures set up accordingly.

Recently, the library has contracted with the 3M Company to market the library's many rolls of filmed material. Further negotiations are in progress for 3M to assist in our preservation filming program and to assist in marketing it.

Xeroxing, either with our Xerox 914 or via microfilm, continues when a hard copy is preferable to film. Fewer requests for xeroopies are received because of the increased availability of commercial xeroopies and the many reprints on the market.

The policy of the New York Public Library continues to be one of cooperation with reprint publishers in lending its material for reprinting as an aid to book preservation. No attempt is made to solicit reprinters to reprint books which are out-of-print but still in demand. However, titles in need of reprinting are forwarded for inclusion in the *Reprint Bulletin*.<sup>2</sup> Last year a total of 329 titles were requested for reprinting. Of these, 251 titles were reprinted. NYPL receives one reprint free to substitute for the deteriorated copy, in return for lending it, as well as a service fee and other fees where necessary.

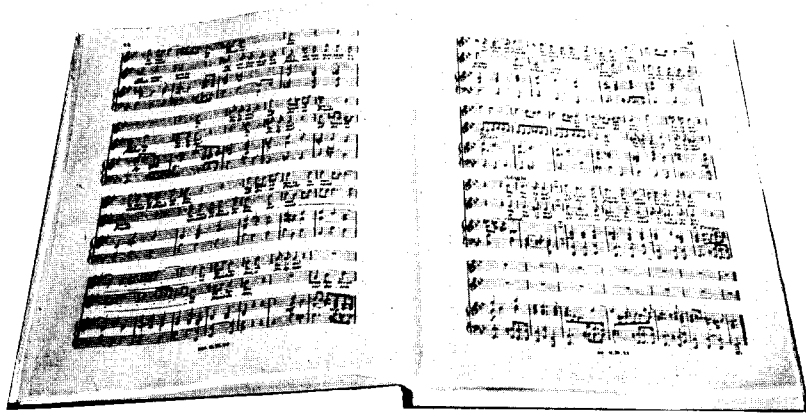
All matters pertaining to preservation of the collections are coordinated in one area: the Office of the Collections Preservation Coordinator. The Collections Preservation Coordinator, under direct supervision of the Chief of Preparation Services, is responsible for the integration of all current preservation programs. The coordinator also acts as liaison between staff members from the public service divisions who are concerned with preservation problems. The coordinator consults with the Chief of Photographic Service

regarding schedules and work flow of filming and xeroxing. Contact is also maintained with the bindery in regard to methods of preserving the book by other means.

A document concerned with the preservation of the collections spells out in full the policies and responsibilities for preservation of all collections in the Research Libraries of NYPL. A Committee on Preservation of the Research Libraries Advisory Council is responsible for recommending preservation policy and procedures. This committee is presently examining a better method for handling and transferring books from one building of the Research Libraries to another in an effort to help preserve the material. A cursory review of the collections reveals that about 2 million of the 5.5 million books in the Research Libraries are in need of preservation of one kind or another.

#### Council on Library Resources

This discussion has traced what has been done by the late William J. Barrow, the Association of Research Libraries, the Library of Congress, and the New York Public Library, to cope with the overwhelming problem of deteriorating paper in books. In addition, the Council on Library Resources has been a moving force throughout these activi-



Music Score after Restoration. Note reinforcements in gutters.

Photographs courtesy of The Arbee Company, Inc., Bernardsville, N. J. 07924. (Restorers of archival materials and manufacturers of processing equipment.)

ties. Some of its accomplishments in the field of preservation are:

- Supported projects in microphotography.
- Established the Library Technology Program which has been responsible for standardization of library equipment (including microfilm equipment); library binding standards; publication of a photocopying manual with a plan to issue supplements and a continued program of testing and evaluation. LTP is currently working on a three-volume manual on preservation.
- Established the W. J. Barrow Laboratory for research into paper and other book materials.
- Supported efforts to create a national plan for preservation of deteriorating books.
- Gave countless grants, among them a grant to prepare a manual of practice for evaluating, processing and preserving archival records.
- Gave a grant to the University of Chicago Graduate Library School for a laboratory study of non-aqueous deacidification treatments (as distinguished from the Barrow aqueous method) to improve the permanence of paper in library holdings.<sup>3</sup>

### Library School Courses?

In an effort to determine what library schools are teaching in the way of preservation, many library school syllabi and curricula (U.S. and Canada) were examined. *No* courses have been or are being offered on the subject of preservation. *Photoduplication*, one method of preservation, is being taught at Columbia. *Reprography*, the newer word for the same subject, is taught at the University of Maryland. Courses in technical resources are, of course, part of the curricula of most library schools, and preservation is included in one or two sessions. Although library schools in the U.S. and Canada offer such courses as data processing, automation, information storage and retrieval, *none* are teaching the vital subject of preservation.

A glance at professional library journals, published in Europe, reveals that their libraries are faced with the same problem. They look to the United States for leadership. The Istituto di Patologia del Libro (Italy), one of the oldest restoration laboratories, is continuing its investigations on the pathology of the book. *Zentralblatt für Bibliothekswesen*<sup>4</sup> reports activities that are mostly concerned with microfilming. *UNESCO Bulletin for Libraries* has devoted a lengthy article<sup>5</sup> to the bibliographic control of microcopies, and the same journal also describes the activities of the Central Conservation Workshop of the State Library of the Socialist Republic of Czechoslovakia.<sup>6</sup> The USSR has contributed to our knowledge of restoration methods and the aging of paper. Several articles on the subject have been translated and are available through the Office of Technical Services.<sup>7, 8</sup> The library literature of England abounds in books on the restoration and care of books, manuscripts and prints. A National Reprographic Centre was recently established in England.<sup>9</sup> Information about the Centre's policies of dissemination will be forthcoming.

### Have We Reached Our Goal?

We have identified the enemy of our books, poor paper. We have arrived at some conclusions as to how to deal with the already deteriorating books: deacidification of paper (through either aqueous or non-aqueous methods) given money and personnel. We have concluded that keeping these preserved books in good condition is to keep them protected against polluted air through control of temperature and humidity, namely air-conditioning.

But what about current acquisitions and the countless books to be written in the future? Does it not seem logical that greater effort should be made to insure the lasting quality of newly manufactured paper?

In May 1966 Mr. James Skipper, then executive secretary of the Association of Research Libraries in a memorandum to the ARL Preservation Committee, outlined steps being taken in a national preservation program. He also referred to the fact that the committee had agreed that steps should be

taken to encourage the Task Group on Permanence of Paper of the American Society for Testing Materials to accept responsibility to define standards which could be applied to currently produced book papers. Official representation from ALA, ARL and the American Book Publishers Council was also requested.

It seems obvious that the next step should be a concerted effort on the part of libraries, library associations, library schools and affiliated organizations to demand better paper quality.

Mention was made of Mr. Barrow's contributions in the field of permanent/durable paper. It is interesting to note that more than one hundred years before, John Murray, a Scottish writer and lecturer, discussed at great length the causes of deterioration of paper in a book, *Practical Remarks on Modern Paper*.<sup>10</sup> Murray made an impassioned plea for better paper and for legislation and government intervention, if necessary. He hoped that *genuine* paper would be manufactured as a result of his book. The book and his plea, for obvious reasons, were promptly forgotten and only came to light in 1965, when mention was made of this book at the First Governor's Library Conference (June 24-25, 1965 at Albany, New York). In this book Murray blames not only the manufacturer but also the purchaser. He goes so far as to advocate a label or a stamp on paper listing its contents: linen, cotton, mixed, bleached, unbleached.

In 1924 Harry Miller Lydenberg, then Chief Reference Librarian of the New York Public Library and later its Director, wrote an excellent paper: *Paper or Sawdust: a plea for good paper for good books*.<sup>11</sup> He appealed to the makers and users of paper alike to see that paper is "properly adapted to the need it is to meet." He ends his ten-page article with a quotation from Milton:

"A good book is the precious life-blood of a master spirit, embalmed and treasured up on purpose to a life beyond life."

"If," says Mr. Lydenberg, "Milton was right when he wrote the above, then everyone, the book lover, the publisher, the printer, the paper maker, will all join forces and see that this life-blood is embalmed and treasured up on material certain to last more than a few short years."

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Preservation of library materials is a broad field encompassing not only books and manuscripts but maps, prints and photographs, paper documents of diverse types, microfilm, motion picture film, tape and disc recordings, and various other materials. Good preservation practices and techniques involve consideration of the conditions under which materials are both stored and used. Standards of performance for various preservation techniques are given based on present knowledge. Costs of some types of preservation work in commercial shops and in the Library of Congress are given. The need to preserve library materials in accordance with the highest known standards, despite the high cost of most preservation work, is emphasized.

## Preservation Costs and Standards

FRAZER G. POOLE

PRESERVATION OF THE MATERIALS IN OUR CUSTODY is undoubtedly one of the major problems facing librarians today. No undue pessimism is intended when we recognize that the problem is likely to become significantly worse before it improves. Data on the costs of preservation and some desirable standards for the preservation practices of libraries are necessary. Discussion of standards and costs in one presentation might, by implication, suggest that standards should be related to costs. However, we should not establish or accept performance standards based upon cost factors.

In the paper, "Guidelines for Preservation," Smith<sup>1</sup> has referred primarily to the problem of deteriorating books and other documents. This is, of course, the most critical problem for many libraries, but it by no means encompasses the total field of preservation. In addition to the problem of deteriorating books, librarians must recognize, and learn to cope with, the preservation problems of other materials, including microfilm, motion picture film, magnetic tape, disc recordings, prints, maps, and negative and positive photographs. Moreover, special conditions of use often create preservation problems peculiar to such use. For example, exhibits of rare and valuable materials pose the problem:

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should such exhibits be permanent because of possible public relations value or should they be limited in time in order to minimize the damage from the ultraviolet rays of sunlight and/or fluorescent lamps, and the excessive heat of the average exhibit case. In both instances, good preservation practice requires that materials on display be given maximum protection through the use of special plastic sheeting which screens out the harmful wave lengths of the ultraviolet, or through plastic shields which slips over fluorescent tubes. Other, similar problems exist in every library. Preservation is a broader and more extensive matter than we sometimes realize. Moreover, it is a problem to which many librarians give little more than lip service or even ignore altogether.

### Standards for Preservation?

Obviously, the area of standards is as broad as the field of preservation itself, and here only certain levels of performance or quality are suggested which seem to be indicated by the present state of our knowledge. When we think of preserving a deteriorating document there are two basic alternatives:

¶ We can attempt to preserve the original if its value justifies it, or

¶ We can microfilm the original, and preserve the text on film.

If we elect to preserve the original, I know of no acceptable procedure other than to deacidify the material through treatment with an alkaline solution (either by immersion or by spray), and to follow this with lamination, using the Barrow method of sandwiching the document between sheets of cellulose acetate film and tissue paper, applied by heat and pressure.

Treatment in such instances should always include deacidification, to provide a minimum pH value of 7.5 for the treated materials. While a lower pH will result in no immediate harm to the document, it will not provide the buffering action necessary to protect the document against the later effects of acid contamination from the environment.

Lamination also requires certain standards if the process is to result in maximum protection to the documents so treated. In the first place, the tissue used for the outer layers of the sandwich should have a pH of not less than 6.5, and should be composed of long, well-purified fibers. Not all tissues sold for the repair and lamination of deteriorating documents have a satisfactory pH. Moreover, some tissues are made with a high percentage of fibers which are known in the trade as "broke." Broke is re-used paper and very often consists of unpurified, ground wood fibers which impart little or no strength to the sheet in which they are used.

Finally, the cellulose acetate film, which is the adhesive used to bond the tissue to the document, should also have a pH of 6.5 or greater. As far as I can determine, all cellulose acetate film sold for the lamination of documents today, meets this requirement. In the early years of its manufacture, however, this was not always the case. Even though currently available products appear to be safe, any library or archive which does its own lamination should have a quality control program to insure that its plastic film as well as its tissue is consistently up to the standard.

Despite the fact that we know that it is the acid used in the manufacture of paper as well as the sulfur dioxide in the atmosphere, that normally leads to paper deterioration, there is evidence that many documents are laminated without prior deacidification. When you send your documents to be preserved, you must make certain that the organization to whom you entrust these materials knows and fol-

lows accepted procedures for deacidifying and laminating documents, and exercises proper quality control over the materials and processes used in their restoration shop.

## Binding Standards

In addition to deacidification and lamination, we may also include binding and re-binding as an important means of preserving materials in their original format. The recent publication by ALA's Library Technology Program (LTP) of a report entitled *Development of Performance Standards for Binding Used in Libraries, Phase II*<sup>2</sup> is a beginning. The next step should be a program designed to implement these standards. In part, of course, such implementation must be the responsibility of the library community, which should request that binders comply with the published standards. Further, LTP must also work toward the implementation of the new standards by encouraging the establishment of authorized testing laboratories, and by working with binders to help them meet the new standards. Finally, we need standards for the permanence of the materials used in binding.

One day perhaps we can escape the continuing and serious damage done to many books by the almost exclusive use of the over-sewing machine. In fact, LTP's five-year program to develop the new binding standards resulted from the need to develop specifications based on performance, rather than on materials and methods. The real standard for good binding should be *how well* and *how long* the book holds together, not *how* it is held together.

## Microform Standards

Standards are also required for other aspects of preservation than those having to do with paper. Microfilming has been and will continue to be the most effective method of preserving deteriorating books and other documents, in those instances where the originals cannot be saved. Usually, we assume that microfilm has archival permanence, and this is supported by the very extensive research

conducted during the last few years by the National Bureau of Standards (an NBS report is to be published in 1968). At the same time, we should observe that we have not had the experience to establish the natural life expectancy for microfilm that we have had for paper. Even so, we have elected to use microfilm in substantial quantities. For this reason we should utilize standards for filming, for processing, and for storage that will—on the basis of present knowledge—afford the maximum utility and longevity of such records. Nor should these standards be restricted to the technical aspects of processing and storage. Bibliographic standards are equally important, but too frequently neglected.

It is not unknown for libraries to conduct microfilming projects of considerable cost, yet the librarian exerts little or no effort to insure adequate collation, completeness of the file or bibliographic target data—or even to provide adequate technical supervision. A microfilm that is incomplete, uncollated, in part illegible or readable only with difficulty, and with such a high residual hypo content that quick deterioration is likely, is worthless to librarian and scholar alike. Such a film is a waste of money—whether these be from private or government sources.

Microfilming is a process requiring considerable skill and care from both the technical and bibliographic points of view. This is not the place to discuss the details of performance standards. Those interested should consult *Specifications for Library of Congress Microfilming*<sup>3</sup> by Stephen R. Salmon and *Microfilm Norms, Recommended Standards for Libraries*,<sup>4</sup> prepared by the Library Standards for Microfilm Committee of the Copying Methods Section of ALA's Resources and Technical Services Division. The USA Standards Institute has also published several standards relating to microfilm.<sup>5</sup> These documents supply the necessary standards and specifications for producing microfilm of as near archival quality as the present state of the art permits.

### The Environment

Finally, the matter of storage conditions as they apply to preservation must be men-

tioned briefly. Librarians are generally aware of the deleterious effects of sunlight upon books; and they know that high humidity, combined with high temperatures, promotes the growth of mold. It is not as widely recognized, however, that fluorescent lights emit ultraviolet rays which damage books, textiles, and other materials. To minimize such damage, rare and valuable materials—particularly those on exhibit—should be protected by plastic sheeting which does not transmit ultraviolet rays. It is also possible to purchase the same plastic in tubes which slip over standard fluorescent lamps. In some instances it may be desirable to use both devices.

According to present day opinion, air conditioning for libraries should provide control of relative humidity at  $50\% \pm 5\%$ . Such close control is expensive however; and funds may not always be available for this purpose. Nevertheless, where rare books or archives are concerned, preservation needs require that every effort be made to provide a suitable humidity. Standards for temperature present a different problem, in that the most comfortable temperature for library users is not that which provides optimum conditions to retard the rate of deterioration in paper. It is, in fact, accepted in some quarters that paper will last longer at low temperatures than at high temperatures. William J. Barrow concluded,<sup>6</sup> as a result of experiments conducted in his laboratory, that for every 20° Centigrade decrease in temperature, the permanence of book paper was increased by a factor of 7.5. Taking user comfort into account, a temperature of 72°F is generally an acceptable temperature standard. Ultimately, we will probably store inactive but valuable materials at temperatures in the 40-50° range, or possibly lower.

It should be noted that recent investigations show optimum storage conditions for microfilm to be somewhat different from those now accepted for paper. For ordinary active collections of service copies of microfilm, existing temperatures and humidity levels in a given library will be adequate, if the building is air conditioned. If the building is not air conditioned (or in the more arid parts of the country), it is advisable to provide a relative humidity of 30-35% in the storage unit.

For inactive collections of master nega-

tives, where the highest degree of permanence is required, relative humidity should be held at 15-20% at a temperature of 50-60° F. Active collections of master negatives may be held at a relative humidity of 30-35% and a temperature of 50-60° F. Where such low temperatures are not feasible, 70° F is the upper limit for archival storage. Additional information, covering standards for microfilming storage conditions will be found in *Summary of Current Research on Archival Microfilm*, National Bureau of Standards Technical Note No. 261.<sup>7</sup>

### Indicative Costs

Turning now to the matter of costs, it must be remembered that preservation is not cheap. Air conditioning is expensive, and so also is microfilming, deacidification and lamination, rare book restoration, control of ultraviolet light, and most other effective preservation measures.

Despite the expense of adequate preservation measures, librarians must be more willing to pay the costs involved than we have in the past. Where funds are not available, then cooperative projects for preserving materials may need to be established. In this connection, it is worth mentioning that the Library of Congress now has underway a pilot project to examine problems relating to the preservation of deteriorating books. From this exploratory study may develop firm recommendations for a national preservation collection, a suggestion already put forth by Gordon Williams of ARL's Preservation Committee. Any further conclusions at this stage would be premature, but the problem is of major significance for all of us.

Although I shall quote some cost figures covering those areas of preservation for which data are available, these are to be construed only as indicative. If a library wants to establish its own preservation shop, costs will vary widely—depending upon local wages and salaries. In the case of materials sent out for preservation, the cost data cited below can serve only as general guides. Actual costs can usually not be determined until the restorer has examined the documents.

For deacidification and lamination of documents—including maps, prints and similar

materials—the following information, taken from the price lists of several qualified restoration shops, may be useful.

*Shop A.* A commercial shop with a highly skilled and technically competent staff lists prices for the restoration of documents as:

Less than 8 × 11 inches	\$1.00 per sheet
8 × 11 inches and over	\$1.25 per sheet
9 × 15 inches and over	\$1.50 per sheet
11 × 18 inches and over	\$2.00 per sheet
Newspaper, 11 × 14 inches or larger	\$2.00 per sheet
Maps, backed on muslin	\$7.00 per sheet

These prices include both deacidification and lamination. If deacidification alone is required, the cost is about one-half the price quoted above. Prices will depend upon the solubility of the inks, the amount of other restoration work to be done (such as the removal of silking, plastic tapes, etc.). This shop has a minimum charge of \$25.

*Shop B.* A commercial shop with skilled personnel lists current prices, which the shop emphasizes are intended only as guides, as:

7 × 8 inches	\$0.70 per sheet of manuscript
8 × 12 inches	\$0.80 per sheet of manuscript
9 × 15 inches	\$0.90 per sheet of manuscript
10 × 16 inches	\$1.00 per sheet of manuscript
11 × 18 inches	\$1.10 per sheet of manuscript

These prices apply to quantities of 100 sheets or more. Charges are higher for smaller quantities, with a minimum charge of \$15 for the first sheet and \$3-\$4 for each additional sheet. The size and condition of the documents to be restored determine the actual charges. Prices include both deacidification and lamination.

*Shop C.* A state records office, which also does restoration work for other institutions and individuals, makes a flat charge of \$5.00 for the first 8½ × 11 inch sheet or smaller, and \$1.50 thereafter. These prices include deacidification and normal repairs.

*Library of Congress.* A study of actual labor and material charges shows a cost of \$0.23 per 8½ × 11 inch sheet to deacidify, repair and laminate documents. This figure does not include such overhead charges as the use of shop space, heat, light, equipment amortization, etc. In the LC shops we find that one man can deacidify, effect normal repairs on, and lami-



nate about 200 sheets ( $8\frac{1}{2} \times 11$  inch) of manuscript per day. For maps, this figure is about 75 sheets per day.

The cost of materials will depend somewhat upon the quantities purchased. Costs at the Library of Congress, however, may be indicative. Laminating tissue currently runs \$3.50 per 100 sheets for the  $24 \times 36$  inch size, while cellulose acetate is \$5.50 per 100 sheets in the same size.

### Microfilm Costs

Microfilming is an important aspect of preservation. As in other preservation activities, however, the cost will depend upon many factors including local wages and salaries, purchasing practices, equipment amortization schedules, and the level of quality control provided. Libraries considering the establishment of a microfilming unit should consult with other organizations already having such operations.

Although it has relatively little significance for others, let me mention that in 1966-67, the Library of Congress microfilmed some 4,500 brittle books at an average cost per volume of approximately \$12.00 for both a negative and positive microfilm.

### Restoration and Conversion Charges

The restoration of rare books is so dependent upon the nature and extent of the repairs to be made, and upon the value of the material, that the following prices can be no more than a guide. One competent New England bindery, handling rare books and special binding, lists prices as follows:

Leather bound volumes—general repairs

Small \$12-15  
Medium \$15-20  
Large \$20-50

$\frac{1}{2}$  Leather Slipcases

Small \$18  
Medium \$21  
Large \$25

Cloth and buckram rebinds

Small \$7-10

Medium \$11-15

Large \$11-15

We could go on to discuss the cost of transferring deteriorating records to tapes, of converting nitrate-base motion picture film to safety-base film, of converting old glass negatives or nitrate negatives to positives or to safety-base negatives. These are all aspects of preservation. For the most part, however, they have not been considered to be ordinary library problems in the past.

### Caveat

Librarians must be certain that their restoration work is done by a competent organization. If you are considering the establishment of your own restoration shop, investigate thoroughly before you do so to be certain that you have identified all the problems and the costs. For example, if you want to establish a shop for deacidifying and laminating documents it will cost in excess of \$20,000 for a standard Barrow laminator, the initial supplies, and the necessary training program to be conducted by the staff of the W. G. Barrow Restoration Shop.

Libraries need to give greater emphasis to the preservation of library materials, but libraries should also recognize that preservation is a costly process. Even more important, preservation and restoration should be done only in accordance with the highest standards of quality if money is not to be wasted, and if deteriorating materials are to be preserved—not for the next few years—but indefinitely.

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Since earliest times, fire and water have been enemies of the written and printed book. In *Protecting the Library and Its Resources*,<sup>1</sup> issued a few years ago by the Library Technology Program of ALA, there is a dramatic and tragic appendix: A 15 page list of library fires from ancient times to 1962. In the United States alone 360 fires were reported by libraries in the last 50 years. Since April 1966 the author witnessed a fire in the Library of the Jewish Theological Seminary, and saw the destruction of books caused by the disastrous flood in Florence. His impressions on the destruction and salvage efforts are summarized in this paper. Problems of re-establishing library services are also included.

## Fire and Water: Book Salvage in New York and in Florence

MENAHM SCHMELZER

THE BRITTLE AND FRAIL PAPER OF EGYPT and even the tougher skins of Pergamon seem fragile media indeed on which to confide the precious knowledge and wisdom of the ages. Ready victim of the accidents of nature, fire, water and the other elemental forces . . . the book would appear to have small chance of survival." These words introduce E. A. Parsons' account of the burning of the Alexandrian library, a fire which occurred some two thousand years ago.<sup>2</sup>

Librarians, the custodians of the wisdom of the ages, have long devoted much thought and effort to the protection of books against destructive elemental forces. There are now available scores of studies and reports about fire protection and prevention and also many papers advising the librarian about book salvage procedures.

Although we all know that it could happen to us too, and we even think we know what to do about it, when it does strike, one is shocked and found unprepared. This is especially true when destruction and damage spread on a large scale affecting rare and sometimes irreplaceable volumes.

Since April 1966 I have had, unfortunately, a great deal of first-hand experience

in this matter. I witnessed the fire in the Jewish Theological Seminary Library in New York City, and in November 1966 after the disastrous flood in Florence I saw the destruction of thousands of books and the heroic efforts made to salvage tens of thousands of them. I would like to share with you some of the impressions which these two events left with me.

Standing on Broadway on that April day, watching flames and smoke emerge from the windows of our ten-story stacks, not knowing yet about the extent of the damage, we were prepared for the worst. We were thinking of the irony and cruelty of fate. Thousands of books which escaped the barbaric destruction in Europe in the 1930's and 1940's and which found a haven in the Seminary Library in this free country were now being destroyed by nature. Almost a quarter of a million books relating to Jews and Judaism were enclosed in the walls where the fire raged. Works dealing with the history, religion and literature of the Jewish people from Biblical times until our own days in dozens of languages from ever so many countries had been collected during the past 80 years. Although the library's unique col-

lection of Hebrew manuscripts and 15th and 16th century books were housed in a different wing of the building and therefore deemed to be safe, we knew that among the books in the general stacks there were many of utmost rarity. We knew that if this library were destroyed, it would be impossible to reassemble all the books and to achieve the completeness that we had had before.

Next morning when we were allowed to inspect the damage for the first time, we found that indeed the destruction was tremendous but also that there remained many books which could eventually be salvaged. Seventy thousand books were burned practically to ashes by the intense fire or were completely destroyed by the collapsing metal shelves which literally melted in the heat. Because of the open multitier stack structure in the library, water used for extinguishing the fire freely poured down seven floors and damaged the remaining 150,000 books.



Fire Damaged Stacks.  
*One Day after the Fire.*

Among the 70,000 burnt books we found only one small section of some 200 rare books which were not completely consumed. They were badly charred on the edges, some of them with a great deal of loss of text, but since they were part of a very rare collection we saved them. They were immediately pre-

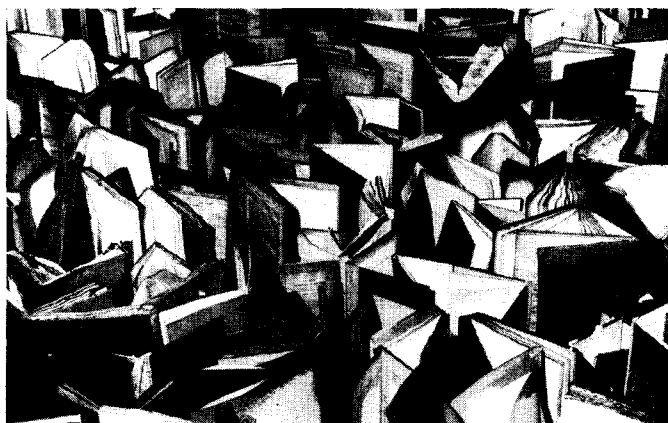
pared for microfilming and lamination. The rest were abandoned and a few months later buried on the grounds of the Seminary in accordance with the Jewish custom, which prefers this kind of respectful disposal of unusable Hebrew texts of religious character.

Then we started hectically consulting with librarians and looking for prescribed remedies trying to save what could still be saved. We knew that the 150,000 wet volumes, some of them like well-soaked sponges, should be evacuated and dried immediately. The whole stack area became one large humidity chamber and that was no place for the books to remain.

It was not very encouraging to read in one of the most up-to-date studies that "there appears to be no really satisfactory rapid method of treating wet volumes on a large scale . . . if papers or books are allowed to remain in wet messes for any prolonged period, they not only stick together but may mildew."<sup>3</sup>

This was bad enough in New York, but how much more so in Florence, where there were at least ten times as many books flooded. Even according to modest estimates the Arno River inundated at least one and a half million volumes belonging to the National Library and 46 other institutions. And there in Italy it was not *clean* water doing the damage, but water carrying a mixture of mud, sewage and fuel oil.

The nature of the material affected in Florence was also different. In addition to regular printed books there were at the Florence State Archives alone tens of thousands of water-soaked manuscript volumes, among them many on parchment. The Jewish Community Library had 600 manuscripts of great value in the flooded area. Wet illuminated codices found in churches and libraries required a much more elaborate salvage technique than ordinary books. A unique collection of books on Etruscan art printed on coated paper had to be abandoned when experts found that nothing could be done to save them. Important original leather or vellum bindings had to be removed and preserved for restoration. In Florence I had to revise my opinion that I had seen the worst in New York. Florence was infinitely more depressing and hopeless, and still even in Florence miracles of salvage were performed.



Water Damaged Books  
Standing on Edges for Drying.  
*One Day after the Fire.*

### Urgency Outruns Theory

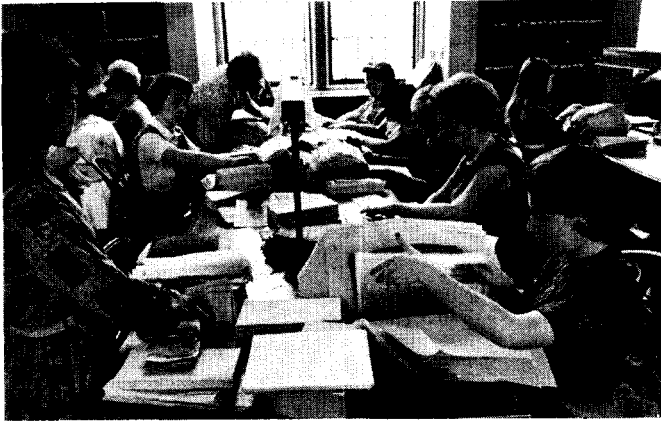
If I had to name the most important and decisive factors which made a remarkably successful salvage effort possible in both cases, I would say without hesitation that it was human help, devotion and resourcefulness.

In New York hundreds—and in Florence thousands—volunteered to help. They came from all walks of life: students, children, housewives, scientists. Institutions and commercial establishments offered their help. Facilities, supplies and space were liberally made available.

Where so many people and so many books are involved, where untrained and unskilled volunteers act, many things seem to go against the instructions of scientific reports and papers. Procedures are unorthodox, the handling of the books is not as gentle as one would desire. We found that in an emergency practice is sometimes different from theory, but also that improvisation by helpful and devoted although untrained people in the long run can achieve miracles. The sooner the librarian realizes that he must act as an equal member of the salvage crew rather than as a professional librarian, the better. One should allow himself to be carried away, within reason, by the enthusiastic efforts of the volunteers. At the Seminary we

planned at first the evacuation of the 150,000 books from the stacks according to priorities of rarity and importance. We decided to save certain subjects areas first. Even within each subject area we wanted to make selections as to the importance of the individual volumes. We asked the professional library staff and faculty members to make the selection. But we soon discovered that this process was discouraging the students and volunteers, slowing down the process, interrupting the human chain of hands which they had quickly established, and of course we got involved in controversy and in value judgements about the relative importance of various books.

It was much simpler to give free reign to the volunteers; to interfere as little as possible, and join their ranks, don boots and get one's hands dirty. Professor Cassamasima, director of the National Library in Florence, worked in overalls along with the others. I know that he became a legend and inspired the thousands of helpers. As I mentioned before, at times the youthful energy of the students did not allow them to pay enough gentle attention to the books. Many books swelled on the shelves and had to be rather forcefully removed. Of course, books became separated into parts, and pages became loose. There is no doubt that a certain percentage of the books was further damaged



**Interleaving Books  
with Water Damage.**  
*One Week after the Fire.*

during the salvage. But the choice is simple: either to let a large part of the books be completely ruined by being too particular and discouraging the helpers, or to take the risk of some additional damage while the major portion of the collection is saved. Both in New York and in Florence the latter course was chosen. The weighing of long-term advantages plays a decisive role in these emergencies.

The outpouring of help did not know geographic boundaries. To Florence supplies and experts were sent from East and West, from the United States, the Western European countries and from the Soviet Union. In New York we received offers of help and advice from all over the United States.

It seems that there was no single possible method of drying, demolding and disinfecting left unexplored. Fans, dehumidifiers, chemicals, paper towels, mimeosheets and blotting paper were used for drying and interleaving. The books were spread in every available space in the Seminary—in classrooms, offices, the gymnasium and in bathrooms. In Florence the books were sent to tobacco and brick drying factories, to the heating plant at the railroad station, to other cities in Italy, and abroad. Temporary wooden shelving was quickly constructed, clotheslines were hung for the drying of pamphlets and leaves, layers of nets were installed in large

rooms. In the Synagogue of Florence planks were spread on the pews to create more space for the drying. At the Seminary on a sunny May afternoon we spread hundreds of volumes on the lawn, and indeed the sun and the gentle breeze did a good drying job. At least until the breeze became too "helpful" and sent some loose leaves flying around in the air. We then decided to discontinue the sunbath project. Tents of heavy plastic were erected in Florence for demolding by thymol. I heard that equipment for gamma ray radiation was supposed to be brought from Belgium to Florence for the disinfection of the books. Whether it was indeed done, I do not know. Some of the methods failed, others worked but were too time consuming. Some international controversy developed between American, British and German restorers about the effects of certain chemicals. But whatever the merits of an individual method or chemical were, they all testified to the inventiveness and resourcefulness of people who cared and wanted to do their utmost to save a cultural heritage.<sup>4</sup>

### **Rebirth Out of the Ashes**

Now I should like to turn to another aspect of library salvage. What happens after the thousands of volumes are dry and free

of mold? How do you put a library back in working order after its services have been completely disrupted? As far as I know only very little has been written on this aspect of salvage. In contrast to the physical salvage, the library reconstruction phase can be done only under the close and direct supervision of professional librarians. This phase is extremely long and complicated.

In our case, at the Seminary, it might take a decade. I remember having read last year that the Turin Library, which burned in 1904, is still in the process of reconstructing its holdings and replacing its losses. I do not know what is being done in Florence at present in this respect, but I am sure that the complete reconstruction of the libraries there will take many decades.

What are some of the problems and tasks after the emergency is over? If, as in our case the stacks were to a great extent ruined, one must look for new facilities. Of course, the ideal solution is a permanent new library building. Until such a building can be planned and constructed, the rental of space and/or the construction of a temporary prefabricated structure is suggested. We indeed have rented shelf space at the Medical Library Center of New York and in addition we erected a prefabricated building in the courtyard of the Seminary. That building provides both shelf and working space. If a library serves a school, as ours does, one of the most pressing needs is to put at the disposal of the students a collection of those basic books and periodicals which they need for the curriculum. Books for this basic collection should be the first to be selected and processed for binding or, if they are unbindable, they should be replaced by new copies or by photocopies from other libraries.

After these immediate needs are met, one should get ready for a normal routine in an abnormal situation. Traditional attitudes of regular schedules should be discarded. The staff should get used to the idea that in addition to the regular work there is now the

added task of forming a new library out of a disorganized, scattered mess of unbound, sometimes fragmentary books.

In a library whose history dates back eighty years, there is always a lot of talk about the need for recataloging and reclassification. If I would have to name a single positive aspect of our tragedy, it is without a doubt that it created the perfect excuse for a total recataloging and reclassification project. First of all we realized that every book would, in any case, have to be handled before it could be returned to the shelf. Then we saw that in many instances shelfmarks and title pages were missing or obliterated, and finally that many books were destroyed beyond repair and that the catalog would have to be adjusted to the new situation. One additional major problem was created by the scattering of the holdings of periodicals, serials and multi-volume works. During the emergency evacuation and salvage it was impossible to maintain order, with sets of books and volumes of the same periodical surviving in different states of damage, and receiving different treatments at different times and sometimes in different locations. To bring these volumes together again involved a great deal of work with the catalog. Therefore, out of necessity, the long planned recataloging project turned into a reality. Our Acquisitions Department also underwent drastic changes. The acquisitions staff, in addition to regular duties, had to engage in the complicated task of replacing the missing or damaged books. New criteria were established and new contacts with dealers were made.

Thousands of old books, pamphlets and periodical volumes are not available any more, or at least no systematic effort can be made for their acquisition. Many of these volumes were, however, donated by generous individuals and institutions. Private collectors, libraries and publishers offered their help and through them many scarce volumes came to the library to replace the old copies. As an added benefit there were—among the gifts—rare books which we never had before. But even after the gifts and occasional purchases there remain many, many books which cannot be preserved and replaced but must be microfilmed. The search goes on constantly in bibliographies and library catalogs for copies of our lost books, and we order micro-

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Menahem Schmelzer, *the librarian of the Library of the Jewish Theological Seminary, New York, was born in 1934 in Hungary. Dr. Schmelzer has been in the United States since 1961.*

films from many libraries here and abroad. I referred previously to the fragmentary books; their identification frequently calls for the talents of a skilled detective. There is also the major problem of paper preservation, restoration and binding. In the aftermath of the fire the librarians must spend a considerable amount of time on insurance claims, on setting up new insurance policies, on improved methods of fire protection and prevention, on the enlarging of the staff and, of course, inevitably, on giving reports to the administration and board, and finally on briefing curious news reporters.

### The Road Back

We are still at the beginning of the road towards complete reconstruction. The dramatic story of destruction and rebuilding in

New York and in Florence has not ended yet. According to the old Rabbinic dictum: *The day is short, the task is great, it is not our duty to complete it, but we are not free to evade it.*

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The MT/ST typewriter is a standard IBM Selectric typewriter attached to a recording unit with two magnetic tape stations which store both copy and instructions. This paper discusses the methods used to produce catalog cards, book orders, spine labels, book cards, book pockets, and cross references. Because it is difficult for non-library oriented people to set up a demonstration of interest to librarians, instructions are included. Interested librarians may take the program to an MT/ST machine and have a trained operator demonstrate the library use. The paper also discusses some of the problems encountered, financial aspects, operator training, and other possible applications.

# Adapting the IBM MT/ST for Library Applications

## A Manual for Planning

ROBERT I. HIRST

THE IBM MAGNETIC TAPE "SELECTRIC" TYPEWRITER (MT/ST) was designed for office use. Most of its applications are in business offices that have heavy volume and repetitious typing. The library applications described in this paper utilize only a fraction of the machine capability. Other applications can be described by the manufacturer's representatives. Library applications are elaborated; these may be unfamiliar to non-library oriented sales personnel. There is little that is technical, except for the descriptions of machine programs—which assume the availability of a machine for demonstration.

Like the typewriter the MT/ST, as the machine is called, may be around for a good many years before many libraries "catch up

to it." Some libraries were still writing catalog cards by hand fifty years after the manual typewriter was invented, and an improved typewriter will probably take as long to be accepted. A further problem is the machine production backlog, which means that a wait for delivery of the machine may discourage many librarians from converting their operations. There is also the possibility that the machine may be replaced by even more impressive machinery or by other technological advances. However, this is not an exercise in futility. The MT/ST is a machine that can impressively fulfill the needs of a small modest library.

### What the MT/ST Is

The typewriting unit is a standard IBM Selectric typewriter with a library font (IBM 72). The type size is Library Elite (12-pitch). Attached to this unit is a recording unit which uses computer-type magnetic tape and which records every signal and instruction sent to it by the typist. The first great virtue is that an error is easily corrected. The operator only backspaces and strikes the correction over the error. The tape is thus corrected, and a perfect copy will be achieved on playback.



Mr. Hirst is chief librarian at Mills College of Education, New York. Because of a backlog of manually typed orders, the MT/ST program described here is not yet completely operational. Reclassification of the collection to the LC classification is also being accomplished by this method.

Flexibility is provided by two tape stations: a left and a right tape. These two tapes are utilized jointly so that *constant* information can be recorded on one station, and *variable* information on the other station. It is then possible to mix the variable information with the constant information as required.

The MT/ST is *not* a computer. Instructions must be given to the MT/ST each time it is used. However, the instructions are simple, and the library programs are easy. The operator instructions are quickly learned, and the operator has little if any difficulty.



Figure 1. A Typist at the Keyboard of the IBM Magnetic Tape "Selectric" Typewriter (MT/ST).

## Applications

Library applications that involve repetitive typing are the logical jobs for the MT/ST; for example,

- Typing of call numbers
- Author and title information on order forms, book cards, and book pockets
- Booklists utilizing all the above.

There are also applications where variable information is required, such as:

- Added entries on catalog cards
- *See* and *See also* reference cards and authority files.

In each of these processes, the library can use the MT/ST to great advantage. The applications as used at Mills College of Education start with the book order. A standard multicopy order form is used. The form is designed to conform fairly closely with the finished catalog card format, but not so as to confuse the jobber. By a combination of tabbing and typing, information unnecessary for the order purposes does not appear on the order form. Cataloging data can thus be eliminated from the order form but can be preserved on the tape; conversely, data unnecessary for cataloging purposes (for example, price of the book) need not be recorded on the tape.

From the tape a complete set of catalog cards is produced with all added entries typed correctly in their proper location. A book card, book pocket, and as many spine labels as are required are then produced. Finally, a booklist stencil may be made of the information before the tape is re-used. No typing has been done since the original input, unless a correction is required.

The tape produces copy at a rate of 120 characters per minute. The print-out of a complete set of cards may take less than three minutes. No further revision is required because the tape is correct.

Another program uses the variable feature to produce a subject heading authority file. The operator has to type only one card—the authority card. All cross reference cards are then printed out automatically, and are ready for filing.

## Costs

The MT/ST unit described in this paper can be rented for \$250 a month. Several optional features can be added for special needs. To justify the rental charges, two conditions were recognized by the financial officer: 1) additional typing help was needed to process our growing backlog, and 2) we were spending more than \$350 a month for

LC cards. The MT/ST was accepted instead of authorizing another typist; and the LC charges were expected to drop as we produced our own cards.

The experience of the first year of operations was satisfactory, in spite of time lost during the start-up period for training and for de-bugging the programs. A comparison shows:

	66-67 Manual Typing	67-68 MT/ST	Change
Books processed	3,919	5,977	+ 52%
Typist hrs./wk.	55	35*	- 36%

A part-time typist resigned before the installation was completed. The position was

\* During one month of the year the equipment was used by other administrative offices in the college.

later re-classified as a file clerk to cope with the rapidly increasing number of unfiled cards, both catalog and shelf list.

One bonus is the saving time for revisions. Typing errors cannot occur during the print-outs; inversions of call numbers cannot occur. When necessary a new title can be ready for circulation in a few minutes.

### Programming the MT/ST for Libraries

The secret ingredient in the MT/ST is fooling the machine. Because the MT/ST is not a computer, it can be fooled. A simple example is in the addition of the call number to the tape. This number is not wanted on the book order, yet in the catalog card program it is the first information to appear. The call number is originally typed off the form; by using a different tab setting, the call number later appears on the catalog

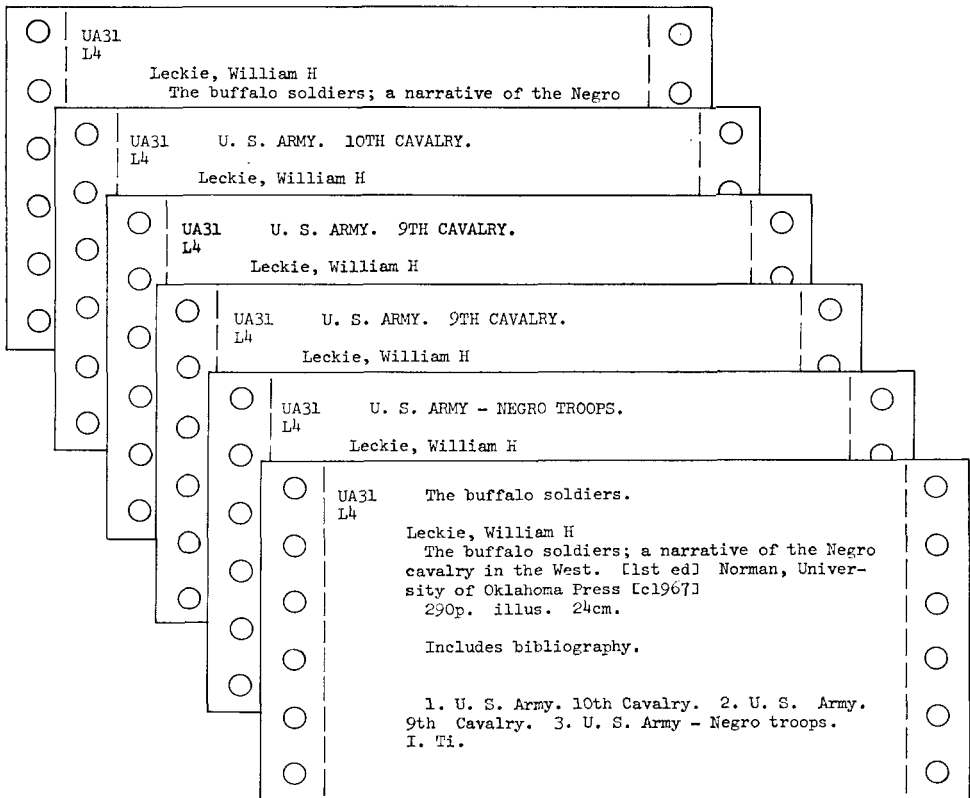


Figure 2. Catalog Card Production. Each added entry automatically falls into place as the print-out occurs.

cards.

There are probably many additional uses for some libraries; for example:

- Payroll and check writing
- Addressing envelopes
- Form letters
- Reports for a few people (each one would get an original typed copy)
- Releasing some typists for other work
- Staff and work schedules.

The technical programs described in this paper may be difficult to understand without using an MT/ST machine. However, if one wishes to see these programs in operation, an IBM representative can arrange to demonstrate the programs by following the instructions presented here.

### Catalog Card Production

Use standard 3 x 5 catalog cards. Elite type must be used; IBM Library Elite 72 is recommended.

Set tabs from Left Margin: 2 sp, 8 sp, 2 sp, 2 sp, off Right Margin.

#### RECORD ON RIGHT TAPE

- 1 CR (Carriage Return)
- 1 Tab
- First line of Call No.
- 1 Switch Code
  
- 1 CR
- 1 Tab
- Second line of Call No.
  
- 1 CR
- 2 Tabs
- Author entry
  
- 1 CR
- 3 Tabs
- Title information
  
- 1 CR
- 2 Tabs
- Continue title paragraph information through imprint date
  
- 1 CR
- 3 Tabs
- Collation information
  
- 2 CR
- 3 Tabs
- Added notes (if any)
  
- Several CR's (as needed)
  
- 3 Tabs
- Tracing information
- Several CR's to end of card

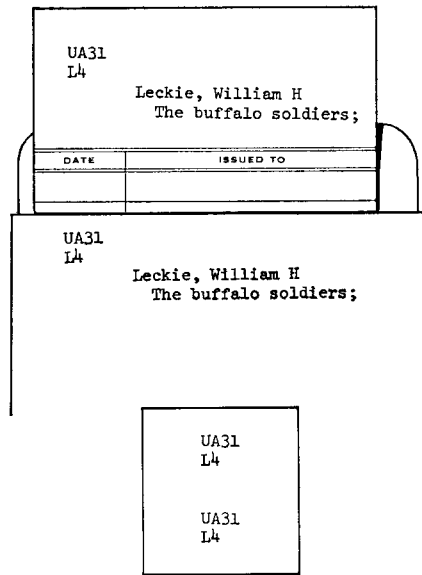


Figure 3. Book-Cards, Book-Pockets and Spine Labels. These are printed out after the catalog cards are produced.

Auto Search Code  
Reference Code

RECORD ON LEFT TAPE. This tape contains no Carriage Returns, only Tabs. Operators trained to start a recording with several Carriage Returns are asked to ignore the training for this program. The first line of the Right Tape contains a Switch Code that the Left Tape picks up and will print-out on the same line.

- 2 Tabs
- First Added entry taken from tracing on Right Tape
- 1 Switch Code
- 2 Tabs
  
- Repeat for all tracings
  
- End Switch Code
- Stop Transfer Code
- Reference Code

PLAYOUT. This will produce a complete set of cards.

- Search both tapes
- Set to start
- Play Right Tape

At the end, a usual practice is to make *one* additional author entry to be used as a shelf list or *two* if the original typing was corrected. Play out Right Tape character-by-character until the Switch Code is reached. This is to be eliminated since the Left Tape is no longer required. Turn

to record right, and feed-code that space. Return to play, and payout copy.

### *Producing Other Material from Tape*

- *Labels for spine.* Pin-fed labels can be used; however, hand-fed labels work well.

Search Right Tape  
Play by line setting  
Print out 2 lines for label

- *Book-cards and pockets.* Play out word-by-word first 4 lines, skipping unwanted information.
- A stencil may then be made by changing tabs to achieve a booklist format.

### *Program for See References.*

Set tabs from Left Margin: 3 sp, 9 sp, 6 sp, Off Right Margin

#### RECORD ON RIGHT TAPE

2 CR  
4 Tabs (Off copy)  
Type word, SEE  
2 CR  
Re-set card so that next line will be at top of card  
13 CR  
Switch Code  
Auto Search Code  
Reference Code

#### RECORD ON LEFT TAPE

1 CR  
2 Tabs  
Cross-reference text  
Switch Code  
1 CR  
2 Tabs  
Next Reference text  
Repeat for all references  
End with Switch Code  
Stop Transfer Code  
Reference Code

#### PLAYOUT

Change 4th Tab to 1 space beyond 3rd Tab  
Search Right and Left Tapes  
Start Left Tape  
Set will appear in print-out

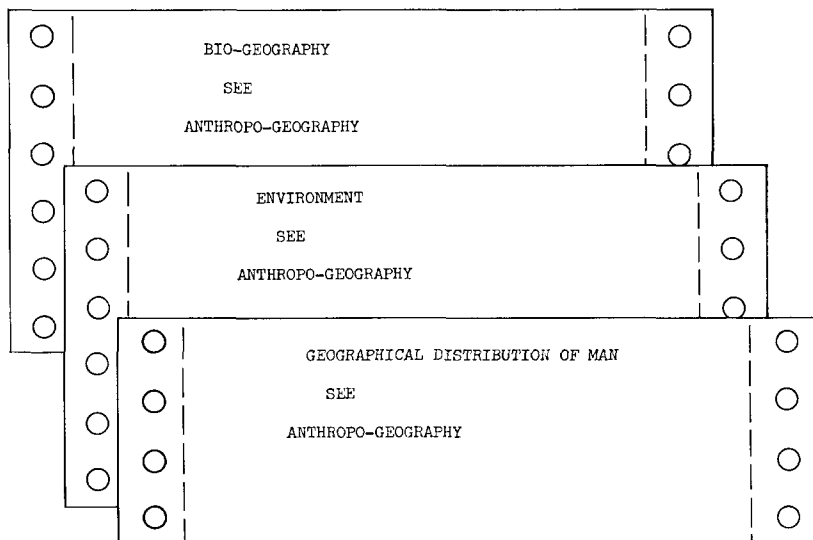
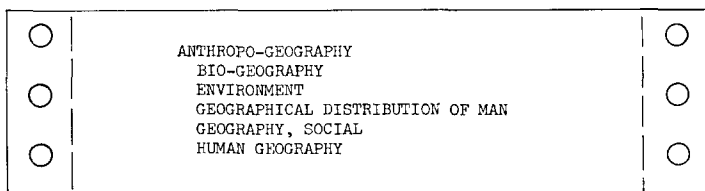
This program saves a great deal of simple typing time, eliminates errors, and can be quickly re-run for additional catalogs. It is, however, somewhat difficult to reconstruct the authority file, should an additional card be needed, but it can be done.

### Typing from Tape vs. Manual Typing

Some people have thought that it would be simpler to type the variable information manually than to prepare the Left Tape. Experience with manual typing shows that even the best typists are subject to fatigue and, consequently, to errors. Although it is a simple matter to reject the card, and start anew when an error occurs, this presupposes that the typist has caught the error. It is possible that the mistake will not be caught—that revisions are then required, and that the tape has been re-used before the error is caught. In this case the library is in the same position as when an LC card has been mistyped. Erasures must be made; or if the card is spoiled, the shelf-list cards must be used, and another shelf-list card must be typed manually.

Other programs that were tried were found to be good in concept but lacking in execution. For instance, while trying to type the added entries manually, a tape was prepared with all the standard LC form subdivisions and with spelled out abbreviations used in the tracings. The operator had a key to the codes, and when a subdivision was needed (for example, Hist.), the operator could set the Code Number to that position and then let the print-out occur. It was thought that this would be most helpful in tiresome subdivisions that are hard to use, and that appear frequently. This is not a recommended practice. The time consumed searching, first for the reference code, and then the machine setting, was much longer than the time to insert the subdivisions on the tape.

When working in the reclassification program, a similar program was tried to eliminate the constant retyping of general Subject Headings when a large section was being reclassified. In Philosophy, for instance, the word had to be retyped on the proper tape for hundreds of books. As annoying as this was, the machine reads too rapidly to allow changes in codes to eliminate this typing.



**Figure 4. Authority Card File Production.** The only card typed manually is that above. The print-out below follows automatically.

### The Biggest Problem

Card stock has been the real problem in the operation. Consultation with other libraries using computer print-outs, confirmed the difficulty of finding the correct card stock quality that would satisfy both the library and the machine. Although some LC-type pin-fed cards are available, at a high price, the MT/ST did not "like" them at all. Several commercially standard types are below library standards, and would not hold up under any usage. This is a serious problem, and must be thoroughly investigated before initiating any program. Extreme caution is urged when receiving advice from any vendor (either the manufacturer of equipment or the producer of card stock). In general, it was

found that a satisfactory card stock could be obtained at the very low cost of less than \$4 per thousand. The only compromise made was to punch the holes for the rods after the print-out. (Student help is used at Mills.)

### The Smallest Problem

The platen for the MT/ST must be specially ordered for pin-fed operations. This requires a knowledge of the distance between holes. If one does not know what the distance is, or suspects that it may vary—a correct suspicion—a machine may need several platens for various distances. Fortunately, there are variable pin-feeds available, but it is difficult to obtain this information. The de-

vices allow adjustment for various sizes of pin-feeds, and they snap on-and-off the top of the MT/ST easily. However, these devices eventually wear out the platen shank, and a new platen must then be purchased.

### Other Observations

The MT/ST has a beautiful feature that is not used in the operations described here—that is self-justifying margins. If a change in format is desired, the machine can do it perfectly. However, libraries usually do not want to change formats so this may be an unneeded feature. The machine also has a capability to update information with a minimum of effort. (Machine time at Mills has not yet been available to consider how the updating feature can be utilized.)

A great deal of time can be consumed in learning which new brainstorms are feasible, and which ones are not. Programs are easy to work out on paper, and it is not necessary to be an expert. New uses are being discovered constantly both by the manufacturer and by the users. Discouragement should not set in if a program fails or if the machine jams. There is a great deal of satisfaction when a new program works out well.

The MT/ST can handle all the work of a small library—and then some. However, to carry even Mills' program full speed ahead, a second unit could be useful. If staffing factors could be solved, a second machine would be the junior model which has only a single tape station. This would enable us to prepare constant information on the single-tape unit—the majority of the input work—and the two-tape model would play the material out. Depending on shift work, the output could be doubled for about 1½ times the original cost. At this point, however, machines would have conquered the staff, or additional help would be required.

It is essential that one person from each new installation attend the manufacturer's training program. That person should be a fair-to-good typist, a logical thinker, and a good teacher. The following instructions and suggestions presuppose that the training has been completed and that the information acquired will be shared with other typists who are to operate the MT/ST.

*Type of Person.* Some people take to the MT/ST immediately. They learn to use it effectively with short periods of instruction. Some, alas, will reject the concept. However, no generalizations or past work performances should be allowed to color the selection of trainees. It is recommended, in fact, that borderline staff members be given the chance to operate the machine. Typing skills are not a prime consideration, and speed will improve dramatically after the skills are acquired. The MT/ST may even have therapeutic benefits. One experience has shown that a person with few skills or talents can master the machine—produce well, gain confidence and a new outlook on life. Self-taught typists can be trained successfully—even though they may not understand margins or tabs.

Some women may wish to reject such equipment—possibly because machines terrify them. However, if they can operate a sewing machine, a manual typewriter or any home appliance, they should be assured that the MT/ST is within their capability.

*Teaching.* Patience is the key to the MT/ST. A pupil should be allowed to practice the keyboard for several days before starting his instruction of tape operations. This time may be reduced if the pupil is already familiar with electric typewriters. "Touch" must be relaxed before learning can begin. Some training suggestions are listed.

- 1) *Familiarization with the correction feature is the fastest way for the pupil to gain confidence.* Mistakes, which poor or even good typists dread, are no longer a matter of concern. The correction feature is the easiest concept to teach, and it usually motivates the rest of the learning process. Be extremely wasteful with paper! If a mistake is corrected by back spacing, make sure clean paper is in place. Overstriking seems to confuse learners. It is better if they can see what they are doing. Replay corrected areas frequently to let them see how easy it is to get a perfect copy.
- 2) Repeat the slogan: "*We don't want a perfect first copy—only a perfect tape.*" Because of past experiences and because of the unpleasant tasks of correcting, there is a tendency to make the first copy perfect. Such a procedure slows down all typists. The slogan helps to reassure them of the

uselessness of their fear.

- 3) *When demonstrating the equipment, make mistakes and correct them.* Conscious errors are more difficult as one becomes expert on the machine. Conscious errors help the pupil to see that the instructor is human and also subject to errors, but nonetheless is unconcerned.
- 4) *If you plan to assign catalog card typing to the pupil, start his practice on sheets of paper.* We prepared work sheets which have instructions, card images, and space for playback of the corrected copy. If the copy is good you have a useable tape; and it can be printed out on card stock. This is the pupil's first victory, even though he may have much yet to learn.
- 5) *Do not explain the whys of the code—unless asked.* It is best to be just plain dogmatic. If a code is written in the program, do not forget it. It must be there to make the program work. It must become a routine habit to end with a reference code—never mind the rationale.
- 6) *Assign some easy work when the practice tapes look good, and let the pupil strike out on his own.* Go away for a time and then see what has happened. Expect disaster! Review the tapes with the pupil and then show him how to correct them.

## Shortcuts

Each installation must decide the routines that are connected with book processing. Some suggestions we have found to save personnel time are listed.

- 1) *Reference Coding.* We have a tab set on the right pin-feed margin, and when typing the title line of the card we tab out to that line and type the reference code number. This number then prints out next to each card of the set. We also place a corresponding marked flag in the book, so we know that Card No. 13 and Book No. 13 belong together.
- 2) *Input Flow.* We do not play out each input until we have completed a tape. As soon as one book is finished, a reference

code is recorded and the next book is recorded. There is no need to search for the reference code each time because the recording is continuous and ready to accept the next information. We do, however, change the number in the dial setting to remind us where we are.

- 3) *Search Time.* Even with the feature of reverse search (which should be specific) search time on higher code numbers takes too much time. We restrict our input to 25 titles on one tape.

## Cooperative Use

Theoretically one typing, when the book is ordered, could be the last time that keyboarding is necessary. It is possible to transmit from the prepared tape over the telephone lines to another machine. The tape can then be printed out, and corrected for those localized non-standard peculiarities that seem to keep libraries separated.

Repetitious, dull, mistake-prone and routine work could be eliminated in hundreds of libraries. Unfortunately, the location of codes on the MT/ST tapes is slow, and each tape holds only a limited number of codes. But if a system of users were seriously interested, the tape codes could possibly be stored in a computer storage bank.

The MT/ST is not directly compatible with computers, but the tape can be translated from MT/ST-tape to computer-tape for storage. All that would then be required to produce a tape in your library, would be a key to the code and a telephone call to the computer. The tape then produced could be adjusted for the desires of the local cataloger—and then discarded.

## Acknowledgements

This paper would not have been possible without the cooperation of Mills College of Education. A special word of thanks must go to Lucille Gilbert who struggled long and hard to eliminate the bugs.



Current research at major colleges and universities in the United States, because of its intensive and interdisciplinary nature, has brought about the creation of special libraries and library services on the academic campus. It is interesting to note that these libraries serve a different function and represent a different philosophy of library service than do contemporary academic library systems. This paper briefly describes these libraries and their librarians, their history, purpose and function. These libraries are sufficiently important to deserve much greater publicity and use.

## Research Unit Libraries as Special Libraries on the Campus

ROBERT P. HARO

ON THE LARGE COLLEGE AND UNIVERSITY CAMPUSES across the United States and Canada there are an increasing number of specialized library collections which are neither administered nor controlled by the main library system. These libraries are usually integral parts of research bureaus, centers or institutes (hereafter referred to collectively as *research units*) established to provide highly specialized research materials and library service. A quick search through library and research centers directories graphically demonstrates the number and variety of these units and their associated libraries.<sup>1</sup>

These libraries are, in essence, special libraries. What is a special library and how does it differ from the traditional image of a college or university library? Thomas Landau in *The Encyclopedia of Librarianship* defines special libraries as:

A service unit devoted to the information requirements, both present and future, of a specific organization. . . . Although each special library is unique according to the needs and interest of its parent organization, there are some general characteristics: materials are collected and organized to meet the requirements of specific groups of users; services are developed to assist these same specific users . . . the library is generally small, necessitating great selectivity in the collection. . . .<sup>2</sup>

role of these libraries on campus, it is necessary to briefly trace their historical development.

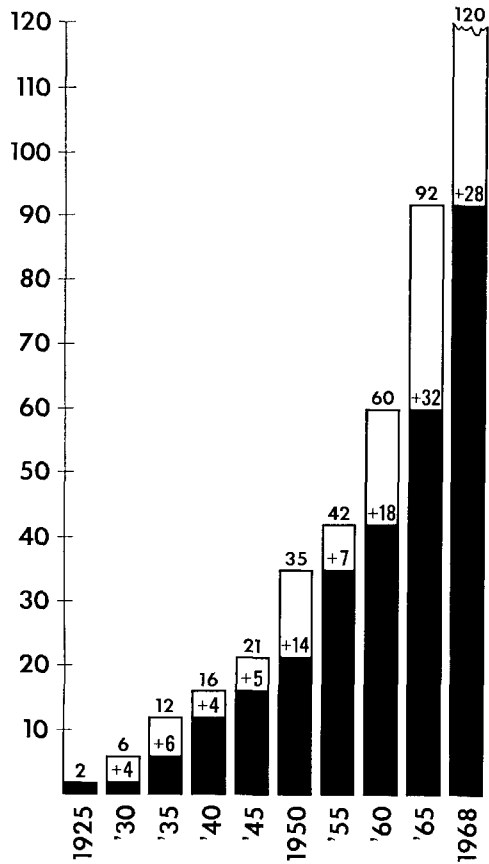
The research unit library on college and university campuses is a relatively recent phenomenon. For many years, the main library and its related branches were the major or only source of library materials and service on campus. However, academic departments maintained and continue to maintain small, pocket library collections and reading rooms for their faculty and graduate students, sometimes commonly referred to as departmental libraries. These pocket collections were and are, in the main, composed of a few basic journals, reference and research books, and related ephemera. Most of these departmental collections continue to function without the services of a professional librarian. With increasing faculty specialization, and with the avalanche of research literature, a serious problem developed. On the one hand, faculty members—especially those attached to a research unit—needed and demanded more specific and, essentially, non-book material; while on the other hand, it became too expensive for the main library system to secure, process and make available the specialized ephemera and fugitive research material needed. Neither was it administratively nor economically practical for the main library to provide the special library service associated with such research needs and materials. The irked victims of this crisis were

To better understand the function and the

the academic specialists who now could neither rely on the main library, nor had time to assemble and organize needed material in their existing pocket collections or departmental libraries.

The research unit library, therefore, developed from a need to offer library materials and service, and to cope with the information explosion in specific fields. It was in many ways a marriage of an expanded and more specialized departmental collection, and the use of a librarian functioning as a subject specialist. The mid-1920's were, essentially, the beginning years of popularity and acceptance of these libraries and their librarians by university faculty and research staffs across the United States and Canada. While some research units and their associated libraries existed as early as 1909, the middle and late 1920's witnessed the rapid increase in the establishment of these libraries staffed by librarians.<sup>3</sup>

The employment of a librarian by a research unit seems to be the coalescing factor in the creation of a special library on the college or university campus. It is at this point that the function and role of the research unit library and particularly its service differs from that of the main library system or a departmental library. The traditional image of an academic librarian is usually job- or task-oriented, i.e. an acquisition librarian is one responsible for purchasing books, catalogers describe and classify books, reference librarians provide direction and assistance in securing information, etc. The same, however, is not the case with a special librarian. The research unit librarian functions in all of the capacities listed above and more. He or she is usually a specialist with a subject background in the field or area involved and is engaged in the selection, evaluation, organization and dissemination of information in these fields of knowledge to research unit faculty and staff. Most important, however, is the active, rather than passive, role that this librarian plays in the integration and adaptation of information resources to the research needs of a particular organization or clientele. This may take the form of actively securing for the library more ephemeral and fugitive material than monographic materials. It may also demand that the librarian take the initiative in calling the



Libraries Established in the Fields of Governmental, Public and Urban Affairs at American Colleges and Universities.

All libraries included in this bar graph were attached to a research bureau, center or institute; they are administratively controlled by the director of their research bureau, center or institute. Only informal relations exist between the unit library and the academic head librarian on the parent campus.

attention of the unit's research staff to new and pertinent information. More detailed indexing of research materials, the preparation of subject bibliographies, report writing, etc. may be some of the additional duties the research unit librarian performs that his colleagues in the main library system do not. While a cataloger in the main library system

may only infrequently deal with a faculty member, the successful performance with a research unit librarian is predicated upon close and frequent association with research unit faculty and staff. In some instances he may function as a researcher in the preparation of a paper or a report for possible publication.

Up to this point, only descriptive generalizations have been employed to describe the role and function of research unit libraries and librarians. It seems appropriate, therefore, to cite three specific examples of these libraries and their respective services that represent:

- ¶ Area or international studies;
- ¶ Business and/or economic research; and
- ¶ Governmental studies.

For this purpose, libraries at Massachusetts Institute of Technology, Pennsylvania State University and the University of California at Berkeley have been selected.

The Center for International Studies at MIT maintains a research unit library devoted to area or international studies. Founded in 1951, it is relatively small (about 3,000 cataloged items) when compared to a large university library, but it is efficient, highly specialized and administratively controlled by the Director of the Center.<sup>4</sup> Because the research undertaken at this center is very current, the library staff secures specialized library material directly from their source. Once these items arrive in the library they are usually processed, cataloged and distributed to appropriate research personnel on the day received, a feat most academic libraries can accomplish on rare occasions only. Also, in a relatively small operation such as this,



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the library staff is constantly aware of current research in the field and is able to keep the library abreast of even the more elusive primary sources. Their task is not simply to amass all current research material in their particular fields, but to organize and index it in such a way that questions about minute and precise topics can be answered quickly.

The library of the Center for Research in Business Administration at Pennsylvania State University contains 5,000 cataloged items. It was established in 1940 and is administratively controlled by the Director of the Center.<sup>5</sup> This unit library differs from a traditional academic library in two respects. First, materials in the center's library are primarily for quick reference, not for research in depth, necessitating careful selection and considerable speed in the acquisition process. Second, the center's library staff, in addition to their regular duties, also acts as the liaison between the College of Business Administration faculty and the University Library staff in such matters as book orders, library material requests, interlibrary loans, etc. Most important, however, is the assembling of statistics and material on Pennsylvania by the library staff not only to further the research done in the center, but to develop and maintain the economic indicators which are published monthly in the center's magazine, *Pennsylvania Business Survey*.

Highly considered and frequently a model for new research unit libraries attached to governmental and urban studies units is the Institute of Governmental Studies Library at the University of California at Berkeley.<sup>6</sup> Responsible only to the director of the institute, the librarian has assembled a rich subject collection of over 300,000 cataloged items. The IGS library secures, catalogs and indexes in depth research materials which most university libraries would not. It is a rich repository for valuable—and perhaps nowhere else available—ephemeral and fugitive materials on all aspects of government. While the personnel costs at this library are a higher percentage of their budget, as opposed to a general academic library, more intensive library service is offered to the user than in a general library. That a close rapport between the IGS librarians and the research staff exists at this research unit is evident from the following: the compilation of

bibliographies by librarians for some of the research papers published by the institute; a librarian responsible for the collection, coding and sorting of election statistics for the San Francisco Bay Area; and the principal librarian functioning as the editor of the institute's bi-monthly research summary, *Public Affairs Report*, and other publications. The IGS library and its staff represent an excellent example of a library service unit devoted to the information requirements, both present and future, of a demanding and highly respected Institute.

### Common Maladies—Different Goals

Impressive as the accomplishments of these research unit libraries are, they do nevertheless suffer from many of the same maladies as do the main academic library systems. Financial malnutrition, staff shortages, out-dated classification plans and low salary scales, a lack of machine applications to handle routine library functions (due mainly to insufficient funds), etc. are some of the areas where improvements are needed. Peculiar to the research unit libraries and of a more serious nature is the problem of anonymity which prevents the wider use and dissemination of research materials and information that these libraries alone may possess on college and university campuses across the United States. While these libraries neither compete nor overlap with the main library system in the type of materials secured and library services offered, they frequently do not cooperate on such matters as including periodical titles held by the research unit library and not carried in the main library system in a combined periodical title holding list for the campus, a sharing of reference resources in special areas, greater publicity for and reliance upon the special materials and services offered by the research unit libraries on the part of the main library system, and most important, a latent and at times patent mistrust for these autonomous libraries by chief librarians and upper echelon academic library administra-

tors. In general, most academic chief librarians have little or no say concerning the type of materials secured and the kind of services offered by research unit libraries. Their relationship, then, depends to a great extent on the kind of person the chief librarian is and how he chooses to work with the director of the research unit and its librarian. Too often, their relationship is usually a cool and distant one, a serious problem in its own right.

Nevertheless, there they are, hundreds of specialized research unit libraries working with a variety of non-book materials and offering specialized library service. Their task is not simply to secure all current material in their particular fields, but to organize and index it in such a manner that questions about minute and precise topics can be answered quickly. The end result of this makes possible the quantity and quality of research and printed studies, both published and unpublished, in the many areas of interest investigated and studies by research units at American colleges and universities.

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This study examines and develops mathematical models and statistical techniques to study the dependence of circulation rate on the age of a book and other characteristics. A model which gives emphasis to the probability of a book not being used at all is presented and found to be efficient in predicting "no use." The concept of "relative use" is presented and did better in studying usage of books than usual methods. Age was found to be a significant variable in studying usage. The models presented do well when fitted to the data collected in three departmental libraries at Purdue.

# The Role of Departmental Libraries in Operations Research Studies in a University Library

## Part 2. A Statistical Study of Book Use

THEODORA ANDREWS

GROWTH IS THE UNDERLYING CAUSE OF many library problems, and this points to the problem of storage of the collections. If it is decided that a little used part of the collection is to go to secondary storage, a fundamental question is: Can any kind of statistical procedure predict the frequencies with which groups of books with defined characteristics are likely to be used in a research library?

The purpose of this study is to examine some previously developed mathematical models and also to develop some new ones and statistical techniques for studying the dependence of circulation rate on a book's age and other characteristics.

Age is considered to be an important variable because most reference material in the sciences has a very short useful life, as is evidenced by the fact that about one-third of the citations in the scientific literature are to materials published in the previous ten years.

Lister<sup>1</sup> concluded earlier that age is not as good a criterion for deciding which books should be removed from the main collection and put in secondary storage as is a measure

of the recent use of the books. In the later study described in this paper, Jain, using the same Purdue data, has a closer look at the "goodness" of age as a variable.

The investigator presents an exhaustive summary of earlier work in the area of use studies where mathematical models were formulated for the description and prediction of use of books. All of the mathematical models reviewed, except Morse's Markov model,<sup>3</sup> are deterministic in nature in that they are concerned with the average use per year of a book and do not predict the scatter in usage around the mean value. However, an examination of the frequencies of uses of homogenous groups of books from the Chemistry, Physics, and Pharmacy Libraries at Purdue indicate the "zero use" class does not follow the same probability law as the other classes. A new model which gives special emphasis to the probability of a book not being used, called the "Pn model" is developed and presented.

Development of the "Pn model" is investigated and studied by splitting book use into two components: 1) the probability of a

CHARACTERISTIC	COLLECTION SAMPLE	CHECK-OUT SAMPLE
Can one draw inferences about the total library collection?	Yes	No
Can information be obtained on the rate of usage of the same group of books over a long period of time?	Yes	No
Is it relatively easy to design a sampling scheme and collect data?	No	Yes
Are the problems of missing data and of lack of control on the methods of recording usage histories in the past avoided?	No	Yes

book not being used, and 2) the probability distribution of uses if the book is used.

Several mathematical models are discussed and remarks made about what the investigators of the past thought about the validity of these models for their data. These remarks were rather qualitative in nature, as most of the investigators did not show methods of estimating parameters in their models. Our investigator develops two methods of estimating parameters in four book usage models.

One method of estimation is based on the minimization of the sum of squares of the difference between the observed and the expected average use per book for different ages of books, called the method of least squares. The other procedure is the method of moments, when age is considered as an artificial random variable with average use per book,  $I(n)$ , as the frequency for age,  $n$ . In addition, the method of maximum likelihood has been worked out in case of the exponential model.

The data for most book usage studies of the past, it was found, were collected in one of the two following common ways: 1) A sample was chosen (not necessarily random) of the total collection, and information col-

lected on the past usage of the books in the sample; 2) The more popular method consisted of collecting data on all books checked out during a specific period of time. Those who used the second method studied the use of their sample without any regard to the total collection in the library.

Which of the two methods is better? The advantages and disadvantages of both methods are presented above.

To take advantage of the plus points of both methods and to minimize their disadvantages, Jain in 1966 developed the concept of "relative usage" while conducting a pilot study in the Purdue General Library. He tells how the sampling was done in the pilot study. Then a study was done on three departmental libraries at Purdue (Chemistry, Physics, and Pharmacy), taking advantage of the experience gained while conducting and analyzing the pilot study.

Three samples,  $S$  (the total collection),  $H$  (home use), and  $I$  (in-library) were collected from each of the three libraries.

### The Total Collection

In regard to the total collection ( $S$ ), it was decided to take a 20% sample from the

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*Part 1 of this report has been published in Special Libraries.<sup>1</sup> In Part 2 Mrs. Andrews continues the description of studies of the Library Operations Research Project at Purdue. The project, co-sponsored by the School of Industrial Engineering and the Purdue University Libraries, investigated the use of books in three departmental libraries: Chemistry, Physics and Pharmacy. This research was conducted by A. K. Jain under the direction of Dr. F. F. Leimkuhler, and was reported by Mr. Jain in his doctoral thesis.<sup>2</sup> The research was sponsored by the National Science Foundation, Office of Science Information Service (GN-519).*

shelflist as this was considered to be the best available sampling frame. The sampling method was as follows: take each drawer containing shelflist cards and choose one of the first five cards at random. Then select every fifth title by ignoring all cards other than the first for each title and skipping four "first" cards. Monographs and serials were handled separately and the two data collection forms were designated.

#### MONOGRAPHS

1) *Data from shelflist.* The following information was recorded for each title under study:

- Complete call number (DDC and Cutter)
- Volume number (if applicable)
- Copy number (if applicable)
- Publisher
- Country of publication
- Year of publication
- Year of acquisition
- Language of the book
- Location within the library (such as reference shelf, storage, etc.)

2) *Circulation histories.* This information was taken from the check-out records in the books. The following usage information was recorded: the last recorded use (month and year), the first recorded use (year), and number of check-outs each year from 1945 to 1966, and the number of check-outs for each of the time periods 1940-44, 1935-39, 1930-34, and pre-1930. Information was key-punched on IBM cards.

#### SERIALS

1) *Data from the shelflist.* The following information was recorded:

- Complete call number
- Set number
- Complete title
- Available volumes in library

Serials are not shelved by call number; location charts are used.

2) *Circulation histories.* Since serials are used more heavily in the libraries than at home and therefore are not often checked-out, the usage histories may not provide a true picture of the usage patterns. This is particularly true of the Chemistry Library where an extremely limited check-out policy prevails.

Country of publication, language and check-out policy were recorded for each serial using the serials themselves. Within each title information was collected for each bound piece, where a bound piece is defined as any volume, part of volume, or a set of volumes bound together as a unit. The information recorded for each bound piece was:

- Year of publication
- Volume number

- The last recorded use (month and year)
- The first recorded use (year)
- Number of check-outs each year from 1945 to 1966
- The number of check-outs for each of the time periods 1940-44, 1935-39, 1930-34 and pre-1930.

Three different sets of punched cards were generated for each title: Use cards, description cards, and serial growth cards. A use card was made for every bound piece of every serial title which was checked-out at least once. Information recorded was a card definition code and the library code, serial code, first three digits of the Dewey number, the language, the country, the check-out policy, date of publication, volume number, first and last use, and the check-out history.

A description card is composed of a card definition code, the library code, the serial code, the complete call number, the language, country, check-out policy, and an abbreviated title.

The purpose of the growth cards is to depict the growth of the individual serials over time. Data on these are the card definition code, library code, serial code, volume number of the oldest bound piece of the serial in the library, the date of publication of this oldest piece, and the cumulative number of bound pieces for years which are multiples of five, beginning with the first multiple of five years after the date of the oldest piece. The accumulation continues until 1965.

#### Home Use

In regard to home use (H), the primary source of data for the check-out sample was the charge cards of the books that were borrowed from the libraries. Every morning the charge cards from the books that were checked-out for home use the previous day were collected during the spring of 1966. From these cards the following information was recorded for each book:

- Complete call number
- Volume number (if applicable)
- Copy or set number (if applicable)
- User classification
- Current check-out date
- Previous check-out date
- Indication of the type of material (serial, new book, reference book, reserve book, etc.)

This information was key punched on IBM cards, one card per check-out. These cards were then fed into the computer where the individual check-outs were sorted ac-

cording to their call numbers and stored on magnetic tape. Before printing the information contained on this tape, a computer program was written to calculate to the nearest one-tenth of a month the time between the two check-out dates that were recorded. The tape was then printed with the time between check-outs on the appropriate lines. A listing of check-outs by order of call number with all the check-outs for each call number grouped together made it convenient to return to the libraries to collect additional information about the books that were circulated.

#### MONOGRAPHS.

A data collection form was used for recording the home use of monographs. This form contained the following information:

- Complete call number
- Volume number
- Copy or set number
- Publisher
- Country of publication
- Language
- Year of publication
- Year of acquisition
- Location within library
- Number of check-outs
- User, sample divider number\* and length of check-out for each check-out

#### SERIALS.

The data collection form user for serial check-out contained the following information for each title:

- Call number
- Series number (if applicable)
- Set number
- Country of publication
- Language of the serial
- Title
- Available volumes of the serial
- Check-out policy

Each title was given a unique code in the same manner as in the shelflist sample. For individual volumes which circulated at least once, the year of publication, volume number, number of check-outs, user code, sample divider number, and time between the last two check-outs for each individual check-out were recorded.

Two sets of punched cards were generated for serials that were circulated: The use cards and the description cards. The use cards contain the card identification number, the library code, the serial

\* In order to allow for the possibility of the division of the home use sample into two random subsamples, alternative "ones" and "twos" were assigned to the check-outs as they were recorded. These are referred to as sample divider numbers.

code, the first three digits of the Dewey decimal number, the language, the country, the check-out policy, the year of publication, volume number and information on check-outs. Each bound piece which was checked-out has a use card.

A description card was prepared for each serial title. These cards contain the card identification number, the library code, the call number, the language, the country, the check-out policy, the serial code, and an abbreviated title.

#### In-Library Use

Very little is known about the book usage within the library premises except possibly for a count of the total number of books reshelfed within a day. It was decided to collect usage data from books left on tables in the Physics and Chemistry Libraries. It is questionable whether the material left on the tables is identical with the material used, however.

The following information was recorded from the library materials left on the tables:

- Call number
- Volume number
- Copy or set number
- Type of material

The information collected was punched on cards, one card per in-library use, and then sorted by call number as was done with the check-outs. The output tape from the sort was printed again, making it convenient to obtain additional information.

#### MONOGRAPHS.

Similar to the shelflist and home use samples, the additional data for monographs that was taken from the shelflist were the publisher, language, country, dates of publication and acquisition, and book location code. A set of codes was generated for the monographs used within the library in the same manner as for the checked-out monographs. The information outlined above, the total number of in-library uses, the number of uses with a sample divider number 1, the number of uses with a sample divider number 2, the monograph code, and the library code were recorded on the data collection form and punched into the cards.

#### SERIALS.

For the serial titles in this sample, the data were assembled in exactly the same way as for the checked-out serials. The data included for the individual volumes were the year of publication, the volume number, volume number addendum, total number of uses, number of uses with sample divider number 1, and the number with sample divider number 2.



**Table 1. A Breakdown of the Shelflist Sample of Monographs by Location and Subject-Language Group**

<u>LIBRARY</u>	<u>MONOGRAPH GROUP</u>	<u>No.</u>	<u>%</u>
CHEMISTRY	Open Shelf-English (DDC 540-549)	458	31.8
	Open Shelf-English (DDC Other)	516	35.9
	Open Shelf-Foreign	178	12.4
	Reserve and Reference	286	19.9
	Total	1438	100.0
PHYSICS	Open Shelf-English (DDC 530-539)	479	25.2
	Open Shelf-English (DDC Other)	550	29.0
	Open Shelf-Foreign	349	18.4
	Reserve and Reference	169	8.9
	Other Locations	90	4.7
	Storage	38	2.0
	Missing	224	11.8
Total	1899	100.0	
PHARMACY	Open Shelf-English (DDC 600-619)	360	23.4
	Open Shelf-English (DDC Other)	444	28.9
	Open Shelf-Foreign	56	3.6
	Reserve and Reference	200	13.0
	Other Locations	94	6.1
	Storage	284	18.5
	Missing	99	6.5
Total	1537	100.0	

Two sets of punched cards were generated: The use cards and the description cards. The use cards, one card per bound piece, contained the card identification number, library code, first three digits of Dewey number, the language, country, check-out policy, serial code, and the in-library use data. The description cards for in-library used serial titles were punched in exactly the same format as for the checked-out serials.

### Usage Data

The Pn function was then fitted to the data collected from the three libraries. Also three book usage models proposed in the literature and the simplest form of the Pn model are fitted to the data from the Purdue Libraries. Some of the data from the three libraries may be of interest (see Table 1).

It is interesting to note that about 45% of the English language monographs on the open shelves in each of the three libraries is in the subject area which is of prime interest to the department concerned.

In the Physics and Chemistry Libraries

over 60% of the checked-out open shelf monographs are in English in the prime subject area. On the other hand, the corresponding figure for Pharmacy is only 42.7%. This is probably due to heavy use in the Pharmacy Library of materials in related fields (see Table 2). It can be seen from Table 3 that most of the checked-out items were acquired recently. The percentages of monographs acquired during 1960-65 are 40.0, 34.2, and 28.3 for Chemistry, Physics and Pharmacy, respectively. Similarly, the percentages of checked-out monographs acquired during 1960-65 are 59.9, 59.7, and 52.7 for Chemistry, Physics, and Pharmacy, respectively. Using these figures it can be shown that the monographs acquired during 1960-65 were used two to three times as much as those acquired before 1960.

In spite of the shortcomings of the sampling procedure used, it was decided to do an in-library usage sample. It is interesting that the percentage breakdown by subject and language group is quite similar to the one given for checked-out monographs.

**Table 2. A Breakdown of the Monographs Checked-Out by Subject and Language**

<u>LIBRARY</u>	<u>MONOGRAPH GROUP</u>	<u>No.</u>	<u>%</u>
CHEMISTRY	English (DDC 540-549)	607	62.0
	English (DDC Other)	372	38.0
	Foreign	0	0.0
	Total	979	100.0
PHYSICS	English (DDC 530-539)	590	60.1
	English (DDC Other)	342	34.8
	Foreign	50	5.1
	Total	982	100.0
PHARMACY	English (DDC 600-619)	248	42.7
	English (DDC Other)	322	55.4
	Foreign	11	1.9
	Total	581	100.0

**Conclusions**

The following specific conclusions may be derived from the study: 1) The sampling methods and the concept of relative use developed in this research study are more efficient in studying usage of books than the usual methods employed. 2) The "Pn function" is quite efficient in describing the probability of "no use" of a book for various ages. 3) Age is a significant variable in studying usage of monographs. 4) The simplest form of the Pn model does as well as the three other book usage models when fitted to the Purdue data. All of these four models

do very well when fitted to the check-outs of monographs for home use collected during Spring 1966 and Spring 1967. 5) The home use data collected during Spring 1967 yield the same fit as the home use data collected one year earlier. 6) A sample of check-outs for home use collected during a relatively short period of time along with a sample of the total collection is the best set of data for studying home use of monographs.

In conclusion it should be pointed out that some of the appended data in this study are of considerable interest. There is a statistical analysis of the data from the Chemistry, Physics, and Pharmacy Libraries. There are

**Table 3. Percentages of Monographs in the Prime DDC Group in the Shelflist and Samples Checked-Out by the Year of Acquisition in the Library**

<u>YEAR OF ACQUISITION</u>	<u>% SHELFLIST SAMPLE</u>			<u>% CHECK-OUT SAMPLE</u>		
	<u>CHEM.</u>	<u>PHYS.</u>	<u>PHARM.</u>	<u>CHEM.</u>	<u>PHYS.</u>	<u>PHARM.</u>
Pre-1935	11.9	12.7	7.6	2.0	4.3	4.4
1935-44	12.6	7.8	16.9	4.8	5.0	7.9
1945-49	8.1	10.8	9.8	4.1	4.4	4.4
1950-54	12.4	13.1	16.3	9.7	9.8	11.8
1955-57	7.4	12.5	9.6	8.6	8.4	9.2
1958-59	7.6	8.9	11.5	10.9	8.4	9.6
1960-61	11.9	11.5	9.8	12.3	14.7	14.9
1962-63	13.9	11.7	10.1	21.5	21.6	15.4
1964-65	14.2	11.0	8.4	26.1	23.4	22.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

twenty-one tables, the first sixteen presenting breakdown of shelflist, check-out, and in-library use samples of monographs. Three tables give the observed and predicted proportions of monographs not used for shelflist, check-out, and in-library use respectively; and two tables present the models, fitted and observed, and predicted average use.

Some interesting incidental observations and comparisons can be made from these data. For instance, the language of the largest number of monographs held in all three libraries ranked thus: English, German, and French (a poor third). Only Physics had much Russian material.

Major publishers differed a little for the three libraries. For Chemistry they were Wiley, Interscience, and Academic, in that order. For Physics they were McGraw-Hill, Wiley, and Springer. For Pharmacy they were Academic and Wiley (the same number), and McGraw-Hill.

The number of monographs "never used" ran as follows: 40 out of 458 (about 9%)

for Chemistry, 65 out of 479 for Physics (about 14%), and 60 out of 360 (about 17%) for Pharmacy.

In the Pharmacy Library the largest number of users were from the School of Pharmacy, of course. Next came users from Chemistry, Biochemistry, Civil Engineering, and Life Science. The status of users in the Pharmacy Library was about as follows: 25% undergraduate, 50% graduate, 18% faculty, and 7% other.

### References

1. ANDREWS, Theodora. The Role of Departmental Libraries in Operations Research Studies in a University Library. Part 1. Selection for Storage Problems. *Special Libraries*, v. 59, no. 7: p. 519-524 (Sept. 1968).
2. JAIN, A. K. *A Statistical Study of Book Use*. PB 176 525. U.S. Dept. of Commerce, Clearinghouse for Federal Scientific Technical Information. Ph.D. Thesis, Purdue University, 1968.
3. MORSE, P. M. "On the Prediction of Library Use," Appendix N. *Intrex*. Cambridge, MIT Press, 1965.

## LTP Reports to SLA

In *Compact Library Shelving*, published by LTP in July 1968, Drahoslav Gawrecki discusses one possible aid to solving the problem of a shortage of storage space. Mr. Gawrecki, a recognized European authority in matters relating to library layout, furniture and equipment, in this volume examines the utilization of storage space, presenting its theoretical aspects as well as a history of compact shelving in America and Europe. Originally published in the Czech language in 1960, and now translated for LTP, the book also presents six selected appendices by American, English, Russian and Swedish authorities that treat of various aspects of compact shelving. *Compact Library Shelving*, LTP Publication No. 14, may be ordered from the Publishing Department, American Library Association, 50 E. Huron Street, Chicago 60611.

Early this year, Product Standard PS9-68 titled "Fabrics for Book Covers" was approved for publication by the National Bureau of Standards. This new standard is a revision of Commercial Standard CS57-40, "Book Cloths, Buckrams, and Impregnated Fabrics for Bookbinding Purposes Except Library Bindings." It became effective on April 15, 1968; CS57-40 was withdrawn on May 15, 1968. ALA was represented on the Standing Committee for Revision of CS57-40 by the Assistant Director of LTP, Richard Luce.

Subcommittee No. 3 of USASI Sectional Committee Z85, Standardization of Library Supplies and Equipment, continued its efforts to reach agreement on a standard for permanent/durable catalog card stock. A draft of the proposed standard was circulated this summer for what was hoped would be the final vote.

The September 1968 issue of *Library Technology Reports* carried evaluation reports by William Hawken of the Murrayscope G 14 and G 21, and the DRS Mini-Reader microfiche readers. There were also reports on 18 conventional steel swivel chairs and a survey of domestic book trucks which updates the previous survey of September 1965.

William P. Cole, editor of *Library Tech-*

*nology Reports* since its inception nearly four years ago, resigned as of August 31. Cole was succeeded by Robert Shaw, head of the LTP Information Service. Mrs. Nancy Knight, assistant editor of *Library Technology Reports*, was promoted to Shaw's former position.

Robert Shaw was appointed ALA representative at the organizational meeting of the USASI Committee PH7 on Audiovisual Photographic Standards. The scope of the committee is to set standards for photographic systems, materials, apparatus nomenclature, and test methods pertaining to the audiovisual art, coordinated with the work of the existing USA photographic standards committee.

Eugene B. Jackson stepped down as Chairman of LTP Advisory Committee, but continues to serve as a member. He was succeeded by Ralph Hopp, Librarian of the University of Minnesota. Richard de Gennaro of Harvard University Libraries replaced Richard Sealock, Librarian, Kansas City Public Library, whose term expired.

It was with regret that LTP received the news of the death on July 22, only three weeks after his retirement, of John H. Ottemiller, former Associate Librarian at Yale University Library. Ottemiller was intimately associated with the Library Technology Program. It was he who, in 1958, conducted a feasibility study on Melville J. Ruggles' suggestion for a research-testing-standardizing program in the field of library supplies, equipment and systems. Ottemiller was assisted in the study by an advisory committee of 12 librarians and laymen. He served on LTP's first advisory committee until the fall of 1962, and was always liberal with sound advice and counsel.

MARJORIE E. WEISSMAN

General Editor

Library Technology Program

American Library Association, Chicago

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EDITOR'S NOTE: SLA's Special Representative to the ALA/LTP Advisory Committee is Don T. Ho, supervisor of Technical Information Libraries, Bell Telephone Laboratories, Holmdel, New Jersey.

# Education for Special Librarianship

## A Curriculum Proposal

CRITICISM ARISES FROM CERTAIN SOURCES that SLA has constantly harped on the inadequacies of the curricula of the library schools, yet has never made concrete suggestions as to changes. I have prepared this curriculum proposal as a first step toward a dialogue in this journal among experienced special librarians. The dialogue can lead to some firm suggestions to our friends, the library school educators.

The point has been made that there is a wide distinction between public/academic libraries with an educational/cultural objective and a dollar/product oriented library.<sup>1</sup> Similarly, the librarians in these libraries differ considerably.

"Librarians (should) not be trained alike, and (should) not be interchangeable . . . the engineering student must decide early what kind of engineer he is going to be, and he can't change his mind later without extensive retraining. I see no reason why librarians can't be expected to make up their minds by the time they approach graduate school."<sup>2</sup>

As an employer in a non-academic, non-public science-oriented library, I have drawn up a one year, 36 semester-hour curriculum which I feel would give a library graduate optimum training for a position in a library such as this one.

An ideal student (alas, not available, of course) would come to library school with two years of college mathematics, two years of physics, two of chemistry and two of biology. Obviously the normal requirements in the humanities and the social sciences would have been met—hopefully with foreign languages and economics. Let us also pray that the candidate has also had an effective course in public speaking.

1. BURKE, John E. *The Rising Tide—More Research Libraries*. East Texas State University, 1966. p.84.

MUELLER, Max W. *Time, Cost and Value in Information Retrieval*. Paper presented at the IBM Information Retrieval Systems Conference, Poughkeepsie, N. Y., Sept. 21-23, 1959. p.3.

2. Letter, Herbert S. White to Grieg Aspnes, Feb. 19, 1965. p.4.

1. *Psychology of the User* (3 semester-hours)
  - a. The psychology of reading.
  - b. Behavior and flow of information; The Invisible College.
  - c. Negotiating the reference question.
  - d. Service: the librarian's motivation.
2. *Publishing: Books and Periodicals* (2 semester-hours)
  - a. History of the book and the periodical.
  - b. The author—motivation: Profits, "publish or perish," etc.
  - c. Receiving and accepting the manuscript: Corrections.
  - d. Preparation of the manuscript for publication.
  - e. Publication and distribution: Binding.
  - f. The Publisher and the profit motive: The copyright controversy.
3. *A Survey of Government as a Vendor* (4 semester-hours)
  - 1st Semester (2 semester-hours) GPO material.
  - 2nd Semester (2 semester-hours) Non-GPO material to include AEC, DDC, NASA, UN, Foreign Governments, and States.
4. *Problems in Acquisitions, Book Selection and Weeding* (3 semester-hours)
5. *Control of Library Materials: Theories of Indexing, the Thesaurus, et al.* (3 semester-hours)
6. *Abstracting and Indexing: To Include the Indexing Abstracting Services* (2 semester-hours)
7. *Library Administration*
  - 1st Semester (3 semester-hours) Library government, the board or committee, the budget, elements of systems analysis.
  - 2nd Semester (3 semester-hours) Criteria of values of automation; evaluation of binding; personnel; public relations; library design and architecture.
8. *Professional Attitudes* (2 semester-hours). The philosophic ramifications of the Weinberg report; recent developments in information science and

systems. Are we a profession? The library associations; service as motivation.

9. *Fundamentals of Library Mechanical Tools* (3 semester-hours)
  - a. Reprographic tools.
  - b. Audiovisual tools.
  - c. EAM and ADP equipment.
10. *Concurrent Practicum in Both Reference and Cataloging* (5 semester-hours). Students man a practice desk and later a real desk in both reference and cataloging three days a week for a full year.
11. *Little Used and Non-Conventional Li-*

*brary Reference Tools* (3 semester-hours). The vital nature of the telephone: the authority, private collector, other libraries, associations, consultants, congressmen, Archives, DDC, AEC, NASA, patents, technical reports, commercial catalogs, newspaper morgues.

ERIK BROMBERG  
Director of Library Services  
Departmental Library  
U.S. Department of the Interior  
Washington, D. C. 20240

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## LETTERS TO THE EDITOR

### PROFESSION OF LIBRARY SCIENCE AND TRADE OF LIBRARY SCIENCE

As a non-professional librarian employed by a major shipbuilding concern in Los Angeles, may I comment on the controversy within the library profession concerning library technicians.

Our company employs draftsmen, design engineers, junior engineers, full engineers and naval architects, each of whom is concerned with the end purpose of designing and constructing successful drilling vessels. Each of these positions possesses a separate status and rating within the engineering profession all its own.\*

Therefore, the problem lies with finding the dividing point between the *professional* librarian and the *trade* librarian. This dividing line is difficult to determine in abstract professions such as acting, writing, and music; but if electricians and carpenters have been able to devise apprenticeship and credential programs, we should be able to do so also.

Foregoing such illustrious titles as "librarian emeritus", "acting librarian", "functional librarian", "non-card carrying librarian", "honorary librarian" and "hypothetical librarian", may I offer the following hierarchy within the

*profession* of library science: 1) Librarian (M.L.S.); 2) Special Librarian (M.L.S.); 3) Associate Librarian (B.L.S.) (I suggest a renewal of undergraduate major in library science to supply the shortage of trained librarians. The status of the Bachelor of Library Science would be less than the M.L.S.); 4) Library Assistant (L.A.A.) (Associates of Arts degree in library science granted from a junior college program now under discussion).

The qualifying factor in these titles is the degree notation following the name.

Now, within the *trade* of library science I suggest the following: 1) Library Technician (someone with two years of college and/or related working library experience); 2) Library Clerk (someone with at least one year of working library experience); 3) Junior Library Clerk (someone with less than a full year of working library experience).

A library technician with two years of college could take an examination given by the junior college to qualify for the L.A.A. if he so desired.

In addition, we cannot ignore those technicians, library assistants or library clerks, who through their own personal initiative, working library experience and ability to do the job well, have earned positions as librarians for company, VISTA, special, or Peace Corps libraries. While they have no M.L.S. to follow their names, they are carrying out the duties of full librarians. I suggest we call these people *practical librarians*.

MARGARET STUART  
(Practical) Librarian  
North Hollywood, California

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\* See BEBBINGTON, Marguerite. Letters to the Editor. *Special Libraries* v.59: no. 6, p.457 (July-August 1968).

## BOOK REVIEW

COLLISON, Robert L. *Progress in Library Science 1967*. London, Butterworths, 1968. 222p. 48s.

The 1967 volume is a source of information about librarianship in Great Britain and its commonwealth nation Canada, but the work is in a sense disappointing. Surely during a whole year more progress was achieved in Library Science in Great Britain than the editor presents to us in this work. The work was fragmentary where it should have been detailed and too detailed where it should have been brief. A chronology is presented at the start of the book but this table is almost completely ignored during the course of the work. There were many, many more interesting items mentioned in the chronology than some of the items discussed in the book.

A good but too detailed account of house journals is presented in the first chapter. Perhaps there should be more house journals available in Great Britain. More discussion on the need for house journals could have replaced the long reproduction of the *House Journal Directory*. More space could have been given to other chapters in the work or additional chapters could have been added on more interesting and informative topics. I am sure anyone interested in obtaining more information on the *House Journal Directory* and its contents could obtain this information by writing to the source of this directory.

R. T. Bottle gives an excellent account on teaching students to use scientific and technical information. It was pointed out that more courses should be available in colleges whereby students may obtain such training. How such training can be given was a bit neglected. Excellent examples of what is being done in countries throughout the world were cited. It was the opinion of the author that more training of this type is given in European universities than in those of the United States.

An excellent article on encyclopedias and information systems design was prepared by Louis Shores of Florida State University. The

encyclopedia offers a good foundation for study of system designs in printed sources of information. Dr. Shores states that the encyclopedia is not only a survey of the knowledge most significant to mankind, but the sum total of information system design followed in most basic reference books.

A very worthwhile article was presented on library services for the blind. More articles of this type are needed. Most libraries for the blind today are run through efforts of volunteers. The blind can read through the use of Braille and Moon. Today there are also talking books available and a Student's Tape Service for the blind.

The article, "Progress of Library Science in Canada," is an interesting and worthwhile article. A survey of this type helps make those working in the library field become aware of what is happening and it also makes the government of a country aware of what has to be done to improve the situation.

A fine report on the presence of bookmen in the library today is presented. The bookman—a librarian who personally selects each book that appears in a library—is rapidly disappearing from libraries of today. A chapter on antiquarian bookmen discusses the fact that bookmen of this type are rapidly disappearing from the scene. Causes cited are great competition among antiquarian bookmen, a low financial reward, and more attractive jobs elsewhere.

An article on Oriental and Asian bibliography attempts to list or discuss the more important works published in Asia and the Orient during the past few years.

The volume closes with an informative review of the work done by the British Standards Institution.

The volume is a very fine one but it could have presented more information and more articles had the length of the chapters been subject to better editorial control.

GERALD J. ZICCARDI, Librarian  
Directorate of Medical Material Library  
Defense Supply Agency  
Philadelphia, Pa. 19101

## HAVE YOU HEARD ?

### New ERIC

The ERIC Clearinghouse on Teacher Education began operation on July 1. Bibliographies, interpretive reviews, and monographs will be developed and disseminated. Address: 1156-15th St. NW, Washington, D. C. 20005.

### Dalhousie's Centennial

The Faculty of Medicine, Dalhousie University, Halifax, N. S. celebrates its 100th anniversary this year. The centennial of the W. K. Kellogg Health Sciences Library was observed on Sept. 10 by a colloquium, "The Future for Medical School Libraries."

### New Construction

H. W. Wilson Company to erect a new six-story building on University Avenue in the Bronx. The new building when completed will add 68,000 square feet of usable space to the present 116,000 square feet in the four existing buildings. . . . The Wilson Company has recently become the first Patron of Special Libraries Association.

### Alabaman Honored

On August 3 President Johnson signed into law legislation designating the planned National Center for Biomedical Communications as the Lister Hill National Center for Biomedical Communications, thus honoring the Senator from Alabama. The center will be part of the National Library of Medicine; its tower-type structure is to be erected within the next four or five years.

### ASIS Moves Offices

On Sept. 15 the American Society for Information Science moved to: 2011 "Eye" St. NW, Washington, D. C. 20006.

### University of Tehran

The first class of fourteen librarians received their MSLS degrees from the University of Tehran in June. Their graduation doubles the number of Iranian professional librarians.

### Nation-Wide Transfax

The Transceiver Corporation has announced its new network of 175 Transceiver Centers in 120 major cities—with an additional 1,400 centers waiting for equipment delivery. The document to be sent is read electronically at the transmitting end. The facsimile image is converted into an audible signal which is transmitted over an ordinary telephone line. At the receiving end, the signals are transformed into impressions on the paper.

### General Services Administration

Establishment of an Archives Advisory Council has been announced by Lawson B. Knott, Jr., administrator of General Services. The 18 council members will be selected primarily from the historical community, but will also include political scientists, economists, genealogists, teachers and archivists.

### Chapter Visits

#### President Herbert S. White

- |          |   |
|----------|---|
| Sept. 28 | Pacific Northwest Chapter. Seattle  |
| Oct. 1   | Minnesota Chapter. St. Paul   |
| Oct. 3   | Joint Meeting of Colorado Chapter and Colorado Library Association. Vail, Colorado                                    |
| Oct. 5   | Joint Meeting of Southern California Chapter, San Diego Chapter, and San Francisco Bay Region Chapter. Santa Barbara. |

#### President-Elect Robert W. Gibson, Jr.

- |            |                                |
|------------|--------------------------------|
| Oct. 4     | Louisiana Chapter. Baton Rouge |
| Oct. 6     | Texas Chapter. Austin          |
| Nov. 7-9   | Rio Grande Chapter             |
| Nov. 22-24 | Heart of America Chapter       |



## In Memoriam

### Margaret Reynolds

ON JUNE 28, 1968 MARGARET REYNOLDS died at the age of 84. Until her retirement in 1948 Miss Reynolds had been librarian of the First Wisconsin National Bank in Milwaukee.

Miss Reynolds, a graduate of the University of Wisconsin Library School, was the first student accepted for the Pioneer Class of the school. She became the first librarian of the First Wisconsin in 1918. Her organizational skill and ability to administer all aspects of library work soon demonstrated the value of her pioneering efforts in financial library services. She was vitally interested in Special Libraries Association, and served twice as chairman of its Financial Group (now the Business and Finance Division). After serving as Vice President of the Association, she was elected President in June 1930 at the San Francisco Convention. During the cross-country train trip from New York to San Francisco, a meeting of the Executive Board was held on the train.

Margaret Reynolds was instrumental in organizing SLA's Milwaukee Chapter (now the Wisconsin Chapter) in 1931. She was an enthusiastic participant in the Chapter's professional activities during her tenure as librarian.

She was a contributor to *Special Libraries*; she also served as associate editor of the "We Do This" department from 1925 to 1931. Thus she was an active participant in "Putting Knowledge to Work."

Following her retirement, Miss Reynolds acted as library consultant in the Milwaukee area. She maintained her keen interest in special libraries until her death.

EVELYN M. TESSMAN  
First Wisconsin National Bank  
Milwaukee, Wisconsin

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## MEMBERS IN THE NEWS



Crawford



Martin

**Lee Ash**, library consultant, has contracted to edit the 16-page, bimonthly *New England Library Association Newsletter*. Publication begins Jan. 1969. Editorial office: 31 Alden Rd., New Haven 06515.

**Kenneth D. Carroll** . . . to senior information scientist, Information Division, American Institute of Physics, N. Y.

The Army's Meritorious Civilian Service Award to **Agnes D. Crawford** for outstanding work as director of the Army Library Service; she retired recently after 27 years in the army library service.

An Institute on New Media in Library Education was concluded on August 30 at the University of Pittsburgh. The Institute was under the direction of **Dr. Jay E. Daily**. A multimedia approach, in a laboratory situation, was demonstrated. Sessions included use of the 360/57 computer terminals, the production of slides and projectuals, use of video tape in role-playing activities, and games to teach complex concepts of library organization.

**Burton E. Lamkin** to adjunct lecturer in data processing at Maryland's School of Library and Information Science . . . **Matthew J. Velluci** to research associate and special assistant to the dean; to be concerned with building planning, office procedures and arrangements and budgetary details.

**Mary Martin** from research librarian to head librarian at Midwest Research Institute, Kansas City, Mo.

Father Fintan R. Shoniker, O.S.B. . . . to president of St. Vincent College, Latrobe, Pennsylvania. Father Shoniker was formerly director of libraries at the college.

Norman L. Varieur . . . to chief, Technical Processes Section, Science & Technology Information Branch, Picatinny Arsenal, Dover, N. J.

Melvin J. Voigt, librarian University of California, San Diego, presided as master of ceremonies at the groundbreaking for the \$4 million Central University Library which took place on July 1.

Dr. Henry Voos . . . to associate professor, Graduate School of Library Service, Rutgers. Responsibilities in instruction and research include communication, systems analysis, and information science and technology.

Daniel J. Yett . . . to science bibliographer for the George Washington University Library, Washington, D. C. He had been library director for the Virginia Associated Research Center.

### SLA Authors

BOWDEN, Clyde N. comp. *Catalog of the Inland Rivers Library*. Cincinnati, Public Library of Cincinnati and Hamilton County, 1968. iv, 156p. pap. \$2.00. Mr. Bowden is curator of the Inland Rivers Library, Rare Book Room, Public Library of Cincinnati and Hamilton County.

HARO, Robert P. *A Directory of Governmental, Public and Urban Affairs Research Centers at American Colleges and Universities*. Davis, Calif., Institute of Governmental Affairs, 1968. viii, 81p. pap. Apply.

The American Institute of Management's publication, *The Corporate Director*, v.10: no. 3, 12p. (1968) cites seven SLA members and their libraries: Alice Wells, librarian, American Airlines; Mrs. Annchen T. Swanson, chief librarian, The Chase Manhattan Bank; Mrs. Mayra Scarborough, director, Marketing Library, Hoffmann-LaRoche; Bernard Prudhomme, librarian, International Flavors & Fragrances; Helen S. Johnston, librarian, The Lehman Corporation; and Rosalie Harrill, research librarian, Xerox Corp., N. Y.

## CHAPTERS & DIVISIONS

### Public Utility *UL*

A second edition of *A Union List of Serials for Public Utility Libraries* has been announced by Sci-Tech's Public Utilities Section. Orders at \$10 per copy to: Anne Burnett, Librarian, Pacific Gas & Electric Co., 245 Market St., San Francisco 94106. Checks payable to: Public Utilities Section, SLA.

### New Illinois Directory

The 1968-1969 Illinois Chapter Membership Directory is available at \$2 per copy. Orders to: David King, R. R. Donnelley & Sons Co., 350 E. 22nd St., Chicago 60616. Checks payable to: Illinois Chapter, SLA.

### Geography and Map Division *Bulletin*

Two papers from the Los Angeles Conference are being published in the Division's *Bulletin*: "The Literature of Yesterday's Exploration" by Roy V. Boswell, Antiquarian Bookseller, Beverly Hills, Calif. appears in the September issue of the *Bulletin*. "Notes on Latin American Cartography and Geography" by Dr. Charles F. Bennett, Jr., Latin American Center, UCLA, will be published in the November *Bulletin*.

### Dayton

A 10-week noncredit class for untrained librarians and library assistants was sponsored last year by Dayton Chapter's Education Committee in cooperation with the Engineering Foundation of Dayton. Another 10-session course, "Using the Material in the Small Library" began on Sept. 19. A fee of \$25 includes texts and instructional materials. Instructors are: Virginia Eckel (Air Force Institute of Technology) and Mrs. Margaret Hardy (Miami Valley Hospital).

\* \* \*

## COMING EVENTS

Oct. 6-12. National "Employ the Physically Handicapped" Week . . . sponsored by the President's Committee on Employment of the Handicapped.

Oct. 18-19 . . . at the Upstate Medical Center, Syracuse, N. Y. An upstate New York Regional Group Meeting of the chapters of SLA, MLA, and ASIS.

Oct. 20-23 . . . at the Cleveland-Sheraton Hotel the 13th Annual Conference of the American Records Management Association. Registration fee: \$90 members, \$100 non-members. Write: ARMA Headquarters, 24 N. Wabash Ave., Chicago 60602.

Oct. 23. . . . Nursing School Librarians of the Midwest at the American Medical Association, Chicago.

Nov. 9-10 . . . in Columbus at the Ohio State University, the First Workshop for Photography Collectors. For further information: Walter A. Johnson, Dept. of Photography and Cinema, Ohio State University, 156 W. 19th Ave., Columbus 43210.

Nov. 13-15 . . . in St. Louis, the Fifth Symposium on Machine Methods in Libraries. Send \$50 registration fee to: Washington University, School of Medicine Library, Attn: Mrs. Betty Kulifay, 4580 Scott Ave., St. Louis, Mo. 63110.

Dec. 28-30 . . . in Dallas, the Annual Meeting of the American Association for the Advancement of Science, Section T—Information and Communication. Section theme: Science-Knowledge Communications Interface. Advance registration to AAAS, Dept. R, 1515 Massachusetts Ave. NW, Washington, D. C. 20005.

Jan. 13-15, 1969 . . . in Washington at the Twin Bridges Marriott Motor Hotel. An institute, "Management and Technology in Printing and Publishing," sponsored by The American University's Center for Technology and Administration. For more information: 3900 Wisconsin Ave., Washington, D. C. 20016.

## OFF THE PRESS

### MLA Directory

The biennial issue of the *Directory of the Medical Library Association* is available at \$5 per copy to MLA members, \$25 to non-members of MLA. Check should accompany order to: MLA, 919 N. Michigan Ave., Chicago 60611.

### Supplement to CODEN

The first *Supplement to CODEN for Periodical Titles* is available at \$45 per copy (less 20% to ASTM members). Orders to: American Society for Testing and Materials, 1916 Race St., Philadelphia 19103.

### Canadian Specials

Two of CLA's Occasional Papers will be of interest to readers of *Special Libraries*. They were sponsored by the Research and Special Libraries Section, CLA-ACB.

*Special Libraries in Canada: A Directory.* Compiled by Beryl L. Anderson. Subject index; geographic index. 209p. multilith. \$3.50 (Occasional Paper no. 73)

*Directory of Special Collections in Canadian Libraries.* By Janet Fyfe and Raymond H. Deutsch. 2v. Subject index; name index. Directory is arranged by Province. approx. 500p. multilith. \$4.50 (Occasional Paper no. 58)

Address orders to: Canadian Library Association, 63 Sparks St., Ottawa 4, Canada.

### New Directory of Translators

Pond Press, London announces the publication of *International Directory of Translators and Interpreters*, 298p. Distribution in the US by Cunningham's, P.O. Box 401, Camden, N. J. 08101. \$13 per copy (\$11 to libraries and other non-profit institutions). 2,120 technical and literary editors in 39 countries are listed.

## Pitt's Occasional Papers

A series of occasional papers are to be published by Pitt's Graduate School of Library and Information Sciences under the title, *The Pittsburgh Series in Library and Information Sciences*. Dr. Jay Daily is series editor. The first paper, "A Concept Paper—the Regional Library Center in the Mid 1970's" is by Thomas Minder, executive director of the Pittsburgh Regional Library Center.

## All-Inclusive 8mm Film Directory

More than 5,000 films in all formats are listed in the *8mm Film Directory* to be published by Educational Film Library Association. Order at \$8.50 per copy from: Comprehensive Service Corp., Dept. T, 250 W. 64th St., N. Y. 10023.

## Library Telecommunications

The 2d rev. ed. of *Library Telecommunications Directory: Canada—U.S.* is updated to July 1968. 416 libraries are listed as using TWX or TELEX communications. Orders from the U.S. (at \$2 per copy) to: Warren Bird, Associate Director, Duke University Medical Center Library, Durham, N. C. 27706. Checks payable to: Duke University Medical Center Library. Orders from Canada to: David Skene Melvin, Associate Director, Lake Erie Regional Library System, 305 Queens Ave., London, Ontario, Canada.

## Information Analysis Centers Directory

The COSATI Panel on Information Analysis Centers has issued a *Directory of Federally Supported Information Analysis Centers*. Order at \$3 per copy from: Clearinghouse, Springfield, Va. 22151.

*Scientific Meetings*  
to be published  
Quarterly  
in 1969  
(See Page 589)

## RECENT REFERENCES

### Bibliographic Tools

*Business Literature: an Annotated List for Students and Businessmen.* (Reference List, no. 25). Boston: Harvard University. Graduate School of Business Administration. Baker Library, 1968. 139p. pap. \$5.

A revision of Reference List, no. 17, provides students and businessmen with a highly selected list of books and magazines in the principal areas of business. Brief descriptive notes are included to indicate the scope or audience for which each book is intended. Contains only books in print as of December 1967. Appendix: General bibliographies and periodicals; Published case books; Publishers and Index.

FARISH, Margaret K. *String Music in Print Including Composer Index Supplement.* New York & London: R. R. Bowker Co., 1968. xv, 204p. \$15.95, U.S.A. and Canada; \$17.55 elsewhere. (LC 65-14969)

Publications listed in the Supplement did not appear in *String Music in Print* (1965). This is a guide to published music for violin, viola, violoncello, and double-bass, and an index of composers represented in both books. Composer index, list of Publishers.

HEIDELBACH, Ruth and LINDSEY, Margaret. *Annotated Bibliography on Laboratory Experiences and Related Activities in the Professional Education of Teachers July 1966-June 1967.* Washington, Association for Student Teaching, 1968. vi, 85p. pap. \$1. (LC 68-26871)

A majority of the references included in this annotated bibliography have appeared in the professional literature during the period of July 1966 through June 1967. Categories in which the references are presented in this bibliography both reflect continued emphases and concerns of the profession and reveal new foci and modes of inquiry.

MAICHEL, Karol. *Guide to Russian Reference Books. v. 5, Science Technology and Medicine,* with the assistance of B. J. Pooler, Rudolf Lednický. (Bibliographical Ser. XXXII.) Stanford, Calif: Hoover Institution on War, Revolution and Peace, Stanford Univ., 1967. 384p. \$22.50. (LC 62-14067)

The Guide attempts to present to the American scientist in a systematized way the most useful Russian bibliographic and reference tools needed to keep abreast with Soviet scientific achievements and literature. Nearly 2,000 items listed here are Russian and Western language (English, French, German) materials. The publications selected cover Russian sciences from the earliest recorded times to the end of 1965 (with some overlaps to 1966). Stress was placed on reference tools covering the post-World War II period and especially the years 1950-1965. Index.

SLAVENS, Thomas P. ed. *Library Case Studies in the Social Sciences*. Ann Arbor, Mich., Campus Publishers, 1967. iv, 82p. pap. \$3.25.

This work is designed for Library Educators teaching courses in the bibliography of social sciences, involved in teaching students to analyze and solve reference problems in the fields of geography, anthropology, sociology, education, history, political science, law, economics and business. Includes 25 case studies involving public libraries, as well as college, university, school and special libraries.

SLOCUM, Robert B., ed. *Biographical Dictionaries and Related Works*. Detroit, Gale Research Company, 1967. xxiii, 1056p. \$20. (LC 67-27789)

An international Bibliography of Collective Biographies, Bio-bibliographies, Collections of Epitaphs, Selected Genealogical Works, Dictionaries of Anonyms and Pseudonyms, Historical and Specialized Dictionaries, Biographical Materials in Government Manuals, Bibliographies of Biography, Biographical Indexes, and Selected Portrait Catalogs. Cites 5,600 sources of biographical information published since 1500 about persons of note throughout the world. Three sections provide guidelines for where to find basic biographic facts about personalities of the past and present. Author, title and subject indexes.

VETERANS ADMINISTRATION. DEPARTMENT OF MEDICINE AND SURGERY. *Basic List of Books and Journals for Veterans Administration Medical Libraries*. (G-14, M-2, Part XIII, Revised.) Washington, 1967. iii, 31p. pap.

A revision of the August 1964 edition; 352 books and 109 journal titles are included in this edition. Author index. Alphabetical list of journals.

VETERANS ADMINISTRATION. DEPARTMENT OF MEDICINE AND SURGERY. MEDICAL AND GENERAL REFERENCE LIBRARY. *We call it Bibliotherapy, an Annotated Bibliography on Bibliotherapy and the Adult Hospitalized Patient, 1900-1966*. (Bibliography 10-1.) Washington, 1967. iii, 50p. pap.

Recommended books for use in bibliotherapy, especially for adult patients, with author index. A revision of earlier bibliographies published in 1957 and 1961. Lists and annotates 403 books and journal articles written since 1957.

ZIMMERMANN, Doris F., comp. *Federal Reserve Bank Reviews Selected Subjects 1959-1966*. Philadelphia: Federal Reserve Bank of Philadelphia. Library, 1967. 126p. pap. spiral binding.

Selected subjects of special interest to Federal Reserve libraries have been indexed and the cumulation printed every two years. Thesaurus of subject headings, a current index with quarterly revisions is maintained on cards at the Bank in Philadelphia library.

### Cataloging

COLUMBIA UNIVERSITY. SCHOOL OF LIBRARY SERVICE. *Sample Catalog Cards for Use in Con-*

*nection with Courses in Technical Services in Libraries and Organization of Materials*, 4th ed. New York, 1967. unpag. pap. \$3.

Several important changes appear in this new revised and enlarged edition. The collection of cards includes more examples of corporate entries (especially those of governments) and serials, as well as cards for maps, music, phonograph records, microfilm, motion pictures, archival materials and rare books. A.L.A. *Cataloging Rules for Author and Titles Entries* (2d ed.) and the Library of Congress *Rules for Descriptive Cataloging* are followed. Entries which conform to *Anglo-American Cataloging Rules* are also presented.

SEELY, Pauline A. ed. *ALA Rules for Filing Catalog Cards*, 2d ed. Chicago, Ill.: Am. Library Assn. Pub. Dept., 1968. 274p. \$6.75 (LC 68-21019)

New, official rules are the first revision since publication of the 1942 filing rules. The new rules are designed to meet current library needs in solving the filing problems occasioned by developments and changes of the past twenty-five years. An extensive glossary, list of initial articles to be disregarded, and a detailed index provide added helps.

———. *ALA Rules for Filing Catalog Cards*, 2d ed. abr. Chicago, Ill.: Am. Library Assn. 1968. 104p. pap. \$2. (LC 68-21020)

Prepared by the ALA Editorial Committee's Subcommittee on the ALA Rules for Filing Catalog Cards. This abridgement presents the same basic rules, but omits most of the specialized and explanatory material. It is expected to meet the needs of most small and medium sized libraries for a simpler code and to serve as a basic tool for teaching filing, both on the job and in library schools.

### Dictionaries

BOORMAN, Howard L. and HOWARD, Richard C., eds. *Biographical Dictionary of Republican China, vol. 2: Dalai-Ma*. New York & London, Columbia Univ. Press, 1968. xiii, 481p. map. \$20. (LC 67-12006)

Second volume of a projected four-volume series, sponsored by the School of International Affairs of Columbia University and supported by grants from the Ford Foundation. The final volume will contain a comprehensive bibliography.

DE VRIES, Louis and HERRMANN, Theo M., comps. *English-German Technical and Engineering Dictionary*, 2d ed. New York, McGraw-Hill, 1968. 1150p. \$27.50.

Completely revised and enlarged, this volume contains over 200,000 entries covering technical and scientific terms used in all fields of engineering and industry, includes new professional and technical terms used in such expanding subjects as climatology, automation, control engineering, astronautics, data processing, inertial navigation, measurement systems, and soil mechanics.

FLEMING, John, et al. *The Penguin Dictionary of Architecture*, Drawings by David Etherton. (Penguin Library Eds.; Penguin Reference Books, R13.) Baltimore, Penguin Books, Inc., 1966. 248p. illus.

Covers every facet of architectural design and the art of building from medieval to twentieth-century architects, also European and American. More than a hundred clear and detailed architectural drawings set into the text they illustrate.

ZALUCKI, H. *Dictionary of Russian Technical and Scientific Abbreviations with their full meaning in Russian, English and German*. Amsterdam, Netherlands, Elsevier, Box 211, 1968. xiii, 387p. Dfl. 45.

This reference work contains a trilingual key for acronyms in modern scientific Russian, written and spoken. Each abbreviation and acronym is followed by its full Russian equivalent and explanatory translations in English and German. This dictionary will be useful to any reader of Russian newspapers and magazines as well as for teachers and students of the Russian language.

### Directories

*American Universities and Colleges*, 10th ed. Washington, American Council on Education, 1968. 1800p. \$22.

Over 1,250 accredited senior institutions of higher education in the United States are described fully. Convenient summary tables are included for quick reference.

*Commonwealth University Yearbook*, 45th ed. Washington, American Council on Education, 1968. over 2,600p. \$20.

The latest and most comprehensive information on higher education in Commonwealth countries can be found in this single-volume work. Full descriptions of all universities in the Commonwealth, including complete listings of their teaching and administrative staffs.

*International Handbook of Universities*, 4th ed. Washington: American Council on Education, 1968. about 1100p. \$16.

This new edition covers universities and other institutions of higher education in over 100 countries outside the United States and the Commonwealth. The university entries are in English. Published in Paris by the International Association of Universities.

LEWANSKI, Richard C. comp. *European Library Directory*. A Geographical and Bibliographical Guide. Florence, Italy, Leo S. Olschki, Via delle Caldaie 14, 1968. xxvi, 774p. 9500L.

The directory comprises approximately 7,000 libraries which are arranged geographically, by country, and then by city, with the province or region noted. Each entry comprises Dewey Decimal Classification numbers indicating subject specialization of the library.

U.S. GENERAL SERVICES ADMINISTRATION. NATIONAL ARCHIVES AND RECORDS SERVICE. *United States Government Organization Manual, 1968-1969, rev. June 1, 1968*. Washington, D. C.: 1969. 842p. pap. \$2. (Order from Supt. of Docs.)

The Manual presents concise and essential information about the organization, functions, and activities of the agencies in the legislative, judicial, and executive branches of the United States Government. It contains 46 charts showing the organization of the Congress, the executive departments, and the larger independent agencies, and lists the names and titles of more than 5,000 key Government officials. Fully indexed.

*Who's Who in Science in Europe*, 3 vols. Guernsey, via London, Vallancey Res. Ltd., Box 77, 1968. \$19.20 per volume £10. (Available only in complete sets)

First guide to West European Scientists. The number of biographical entries included in the first edition approaches 30,000 in addition to some 2,000 cross references.

### Information Handling Techniques

*The Computer: Tool for Management*. Elmhurst, Ill., Business Press, 1968. 210p. \$8.50.

Covers such subjects as information retrieval, feasibility studies, and recruitment of programmers, this book provides both novice and professional with pertinent management information. Recommended for managers who are seeking new ideas in data processing techniques.

LECHT, Charles P. *The Programmer's PL/I: a Complete Reference*. New York: McGraw-Hill, 1968. 427p. \$11.95.

The book utilizes a form, format, and organizational structure uncommon in PL/I books, for example, it employs the use of space on the pages for the reader to include his own annotations and experiences in using PL/I for his future reference, and it contains special information locator indices. It is replete with examples, and will be a valuable reference to professional systems analyst/programmer personnel who must prepare computer applications utilizing the PL/I language repertoire.

*New Techniques in Office Operations*. Elmhurst, Ill.: Business Press, 1968. 166p. \$7.25.

This book covers subjects from centralized office operations, microfilm processing, forms design, cost control, and office machine standards, to detailed discussion of integrated use of accounting and bookkeeping machines with computers.

*Science Information in Japan*; 2d & rev. ed. Tokyo, Japan: Japan Documentation Society, Nipdok, Kikai Sinko Kaikan, Shiba Park, 1967. v., 192p. pap. \$5.

Changes in Japanese government policies with regard to scientific and technical information are

reflected in the second, completely revised edition. Topics covered include science, industry, and information in Japan; policy on science and technical information; generation, flow, and use of science information; problems concerning primary and secondary information and equipment; organization, education, and training; and popular science information. Twenty-seven appendices provide data supporting the text.

### Librarianship

BEARD, John Robert. *Canadian Provincial Libraries* [Submitted in 1965 as Partial Fulfillment of the Requirements for the Degree of Doctor of Library Science in the School of Library Service, Columbia University.] (Centennial Series CLA-ACB Occasional Paper no. 54). Ottawa, Canadian Library Association, 1967. xix, 303p. tables. pap.

This study traces the historical development of provincial libraries in Canada as an aid in understanding their present status, and to attempt to define their potential role, in order to lay a foundation upon which further study and planning may be based. Bibliography.

LIEBERMAN, Irving, ed. *Education for Health Sciences Librarianship, Proceedings of an Invitational Conference September 10-12, 1967*. Seattle. University of Washington, School of Librarianship, 1968. xii, 216p. illus., tables. pap.

The conference was made possible by a grant from the National Library of Medicine. Subjects discussed: *The Changing Face of Medical Librarianship; The Relation of Special Library Education to General Library Education; Medical History, Libraries and Curricula; Levels of Preparation Required for Medical Librarianship; Curriculum Content for Education in Medical Librarianship at Several Levels; Trends in the Health Sciences; Implications for Medical Librarianship; Educational Programs for Hospital Science Librarians; Systems Concepts and Library Education; Instruction in the Modern Techniques of Biomedical Communication.*

MORSE, Grant W. *The Concise Guide to Library Research*. N. Y., Washington Square Press, 1967. ix, 214p. 75¢, paper; \$5.95, cloth.

A practical elementary guide to research procedure. Teachers and others who use the library will want to have this book. Written by a librarian of great experience, it provides many keys to the resources that are contained in our libraries. Index.

PARKER, Dorothy, HIRST, F. C., LOOSJES, T. P. and KOSTER, G. *Primer for Agricultural Libraries. Preliminary edition*. Oxford, England: International Association of Agricultural Librarians & Documentalists, 1967. 72p. pap. \$2/15s. (Available from Pudoc, 6a Duivendaal, Wageningen, Netherlands)

This primer is essentially a practical tool to put in the hands of an inexperienced worker in an

agricultural library to aid the worker in recognizing his broad areas of responsibility as well as his specific duties. It identifies for the librarian the scope and the variety of his responsibilities and also the relationship of the library to the organization in which it is placed and the clients whom it serves. It emphasizes bibliographic tools, book selection, periodical selection and reference materials as the topics which will most directly lead to improved services to users.

### Miscellaneous

*Air Transportation 1975 and Beyond: a Systems Approach, Report of the Transportation Workshop, 1967*; Cochairmen, Bernard A. Schriever, William W. Seifert. Cambridge, Mass. and London: M.I.T. Press, 1968. xvii, 516p. \$20/187s. (LC 68-20050)

BERKELEY, Bernard. *Floors: Selection and Maintenance*. (LTP Publications, no. 13.) Chicago, American Library Association, Library Technology Program, 1968. ix, 316p. \$12.50. (LC 68-23014)

This volume is intended as a guide to the choice and maintenance of flooring, and should prove indispensable to librarians and administrators planning new library buildings, and to architects, planners, and interior designers of institutional or commercial buildings. The book is indexed and offers a list of selected references.

*Boeckh Building Valuation Manual, vol. 1, Residential and Agricultural*. Milwaukee, The American Appraisal Co., Boeckh Division, 1967. ix, 274p. 3 vols. \$99; vols. can be purchased individually. (LC 67-31672)

The manual has a 1967 construction base price, which can be readily up-dated with current modifiers from the new bi-monthly publication, *Boeckh Building Cost Modifier*. Volume II: *Commercial* and III: *Industrial and Institutional* will be released in June 1968, covering commercial, institutional and manufacturing buildings. The manual contains a wide variety of models incorporating many types of construction, all are built up from unit-in-place costs converted to costs per square foot of ground area or of living area. Glossary, Bibliography and Index.

### Reference

SHEEHY, Eugene P. comp. *Guide to Reference Books*, 8th ed. *1st Supplement 1965-1966*. Chicago, Am. Library Assn., Publ. Dept., 1968. 132p. pap. \$3.50. (LC 66-29240)

The new supplement up-dates this international aid to the selection, use and study of reference books. Entirely new works, new editions of works listed in the basic volume, and new parts of continuations are listed. New features in this supplement are Library of Congress card numbers and references to reviews in selected ALA periodicals. There are cross-references to the main volume and an author, subject, title index.

## CLASSIFIED ADVERTISING

*Positions open and wanted—50 cents per line; minimum charge \$1.50. Other classifieds—90 cents a line; \$2.70 minimum. Copy must be received by tenth of month preceding month of publication.*

Advertising rates will be increased—beginning with the January 1969 issue. The rate for all Classified Line Ads will be \$1.50 per line, with a minimum charge of \$4.50. Current members of SLA may place a "Positions Wanted" ad at a special rate of \$1.00 per line with a minimum charge of \$3.00. Copy for line ads must be received by the fifteenth of the month preceding the month of publication. Proofs cannot be submitted for classified ads. Only one tear sheet can be supplied to line advertisers.

Rates for display advertising will also be increased beginning with the January 1969 issue. Interested advertisers should request Advertising Rate Card No. 16 for the new rates and related information. Copy for display ads must be received by the tenth of the month preceding the month of publication.

### POSITIONS OPEN

**REFERENCE LIBRARIAN**—Technical. Masters Degree in Library Science, BA in Math, Physics or Chemistry preferred. Comprehensive reference and bibliographic work. Prefer candidates with experience, but will consider recent graduates. Located near Universities of Wake Forest, Duke and North Carolina. Starting salary \$8,000—\$10,000. Write to Mr. C. O. Mahaffey, Western Electric Company, Incorporated, 3300 Lexington Road, Winston-Salem, North Carolina 27102.

**HEAD LIBRARIAN**—Biological Science Library. Degree in library science necessary with science background. Work with scientific staff to initiate and organize information alerting and retrieval services. Salary commensurate with experience. Please contact Mrs. Mabel Jacobsen, Placement Secretary, Worcester Foundation for Experimental Biology, Shrewsbury, Massachusetts 01545.

**DREXEL INSTITUTE OF TECHNOLOGY LIBRARIES**—invites applications for professional positions: 1) Head of Acquisitions Department, base salary \$9,600, and 2) Business Administration Divisional Librarian, base salary \$7,800. Starting salaries depend upon experience. Requirements: ALA accredited, Master's degree and appropriate experience. Liberal vacation, retirement, and fringe benefits. Apply: Richard L. Snyder, Drexel Institute of Technology Libraries, Philadelphia, Pa. 19104.

**SCIENCE LIBRARIAN**—To assist in formulation of Science Division, coordinate selection and build collection, effect liaison with science faculties. New building, expanded operation planned. Faculty rank, normal benefits. Rank and salary dependent upon and commensurate with candidate's qualification. Fifth year library degree, language facility, reference or administrative experience, relevant science background or experience required. Position available July 1: Contact Dean of Library Service, University of Montana, Missoula, Montana 59801. Tel. 406-243-2053.

**CATALOGERS** with experience sought for growing department. New building, expanded operations planned. Faculty rank, normal benefits, salary to \$8,000 dependent upon qualifications. Fifth year library degree, language facility required. Two positions available July 1. Contact Dean of Library Service, University of Montana, Missoula, Montana 59801. Tel: 406-243-2053.

**REFERENCE LIBRARIAN**—M/F, MLS. I know where you can get a unique job as head of the reference department in a very busy urban library 40 minutes from NYC. Select and maintain the excellent collection, generate ideas, do PR work, press releases, supervise your own staff. Blue Cross, Blue Shield, major medical, month vacation, salary to \$8,250. It's my job now, but I'm leaving to teach. My previous position was in a NYC special library. Write or call Orange Public Library, Orange, N. J. 07050. Tel. (201) 673-0154.

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Center for Naval Analyses of the University of Rochester has opportunity in Washington, D. C. area for experienced librarian. MLS required, operating experience in all aspects of library functions desired, since individual selected will be responsible for entire operation.

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**CATALOGUER**—for Health Sciences Library, Queen's University, Kingston, Ontario. Rapidly developing library requires expert for this position. Salary commensurate with ability. Apply to Miss Virginia Parker, Librarian.

**ASSISTANT DIRECTOR, TECHNICAL SERVICES DIVISION, OREGON STATE LIBRARY**—Librarian 5. Located in Salem, capital city of 67,000 midst scenic, rolling hills and abundance of Oregon's Willamette Valley. Opportunity for professional growth and challenge in important position as Assistant to Technical Services Director and with primary responsibility for work of an active Documents/Serials Section. Builds documents collection and does consultant work with Oregon's state depository libraries. Assists in planning for automation of serials. Qualifications: MLS degree and four years of experience, including work with documents. Salary: \$9,120—\$10,980, depending on qualifications. Apply to: Oregon State Library, Salem, Oregon 97310.

**TECHNICAL ABTRACTOR-INDEXER**—To abstract and index company reports for computer tape searching. A degree in chemistry or chemical engineering required. Background in literature science and tape searching desired. Salary open. Send resume to: R. D. Mayse, Research & Development Dept., Continental Oil Co., Ponca City, Oklahoma 74601.

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