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The earliest examples of printing are from the eighth and tenth centuries. The Japanese holdings, almost as large as the Chinese, are unusual in number of Edo (1600 to 1867) imprints and the Murakami Library of Meiji literature. There are substantial monographs and periodicals from Communist China. Both North and South Korea furnish titles to follow after the array of Yi dynasty imprints and manuscripts and the succeeding publications of the period of Japanese occupation.

The catalogs that reveal the collection show sixteen years of painstaking care on the part of Charles E. Hamilton, Chief Cataloger, and his staff. Their frequently laborious research has produced a display that is outstanding in its high degree of accurate description. The single author-title catalog is arranged in the order of characters in the index to Mathews’ Chinese-English Dictionary, after which much shorter sections show entries beginning with, respectively, kana, han’gul, and the Roman alphabet. The subject catalog, an alphabetical file, bears English headings based upon the Library of Congress list.

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Many of the manuscripts form part of the autograph collection brought together by Mellen Chamberlain (1821-1900) who presented it to this Library in 1893. He began to acquire historical source materials as a Dartmouth undergraduate and often was able to obtain them from heirs of participants in the war. Other related documents have been added, by gift or purchase, over the years.

The arrangement of the descriptions is basically chronological. There is also a detailed index comprising some 1500 topics—persons, places or subjects.

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Institute for Scientific Information
325 Chestnut St., Phila., Pa. 19106, USA
This paper discusses the background, operation, and findings of the Pilot Preservation Project conducted at the Library of Congress. A representative sample of deteriorating materials was thoroughly searched at the Library of Congress for compilation of statistical data. Information was then gathered on the comparative condition of these titles in seventy U.S. libraries. The formation of a national preservation collection is thought to be feasible, but it cannot be accomplished without problems.

Librarians have long been aware that certain books wear out sooner than others. In years past it was assumed that heavy use was the cause of a book's deterioration; however, during the last decade, the increased volume of deteriorating books forced librarians to look elsewhere for an explanation. Research conducted by the W. J. Barrow Research Laboratory of Richmond, Virginia, for the Council on Library Resources, Inc., established the fact that the introduction of acidic alum rosin sizing in the manufacture of paper during the past century was causing the embrittlement and disintegration of book papers.

The impact of this deterioration bodes evil for the future, as most book papers were and are manufactured using this process. The Association of Research Libraries established a Preservation Committee in 1960 to begin studying the problem of deteriorating materials and to assess its impact on library collections. In 1964, Gordon R. Williams prepared a report for this Committee entitled "The Preservation of Deteriorating Books," which was adopted in principle by the Association of Research Libraries on January 24, 1965. The Williams report covers a great deal of ground and makes several recommendations, but in essence it urges the establishment of a national preservation collection in which at least one copy of every deteriorating book would be physically preserved through deacidification or cold storage, or both. Microform copies of this material, produced as needed, are provided for in Mr. Williams' plan.

After the problem had been recognized, discussions had taken place, a committee formed, and recommendations made, a first step was needed to explore the managemental and technical problems which would be involved in gathering together a national preservation collection. The Preservation Committee of ARL proposed that the "brittle book" collection of the Library of Congress serve as a basis for the pilot program. The library had been gradually separating from its collections copies

Mr. Shaffer is Brittle Books Project Officer in the Library of Congress.

of deteriorating or embrittled books, with some 35,000 so identified. Here was a ready-made collection from which a sample could be drawn.

On October 20, 1966, the library submitted a proposal to the Association of Research Libraries and the Council on Library Resources, Inc., requesting support for a pilot program to serve as the first phase of a national preservation effort based upon the program outlined in the Williams report. LC's proposal was adopted by ARL, and the ARL Preservation Committee recommended that attention be given to problems in three areas: 1) the location of the same deteriorating titles in other libraries; 2) identification of the "best" copies of such deteriorating titles; and 3) the feasibility of listing the best copies thus identified in a central register.

The pilot program was initiated in March 1967 and lasted approximately one year. This writer was appointed to head the project under the general supervision of the LC Preservation Officer. In accordance with the original proposal, the following objectives were established for the Pilot Preservation Project:

1. To develop routines for comparing titles in the LC brittle book collection with the same titles in other libraries;
2. To obtain an estimate of the work (and thus of the costs) required for LC to identify such "best" copies and for the libraries participating in the program to locate the volumes requested and to prepare the necessary report of their physical condition;
3. To collect data during the course of the project as a basis for estimating the usefulness of the National Union Catalog in identifying the location of a deteriorating book;
4. To determine the extent to which libraries may have discarded their brittle or deteriorated books.

**IMPLEMENTATION**

An initial sample of seventy-five monographic titles was selected from the LC brittle book collection. After an examination of these volumes to determine the problems likely to be encountered in describing physical condition and degree of paper deterioration, a special form was designed for use in reporting on the books in the sample. This form, which was printed on the verso of the LC catalog cards for the books in the sample, was filled in for each title. The National Union Catalog of pre-1956 imprints (hereafter referred to as NUC-1956) was then checked for additional locations of these titles. The project head visited the Harvard University Library and the Boston Public Library to test the local use of the form on titles also held by these libraries, and to discuss the procedures for participation in the project with the librarians at these institutions. In designing the form, both bibliographic completeness and the physical condition of a given title were considered. The form was kept as simple as possible in order that it might be completed by clerical staff. Figure 1 shows the final form of the Book Condition Report as filled in by librarians at Harvard University, Peabody Institute, and the Library of Congress.

Following the initial small sampling and a revision of the form, a larger, more selective sampling was begun. Most of the titles selected were single-volume monographs. About 5 per cent of the nearly 1,100 titles (785 non-fiction, 300 fiction in English) selected and searched were multi-volume works. An attempt was made to select titles on very brittle paper, or of which the LC copy was incomplete. Primary consideration was given to works in the English language, particularly American imprints. Selections were made from all major classes of material, including PZ 3 (fiction in English), with imprint dates ranging from the early 1850's to the 1930's. Most of the titles selected for the
### Library of Congress

**Book Condition Report**

1. General Book Condition: (Perfect) 1 2 3 4 5 (Poor)

2. Paper Condition: [ ] Excellent [ ] Weak (Puffy) [ ] Stiff [ ] Brittle
   [ ] Extremely Fragile [ ] Discolored

3. Missing Page Numbers

4. Missing Plate, Map, Chart, Diagram Numbers

5. Port of Text Lost Due To Mutilation Or Crumbling On Page Numbers

6. Binding: [ ] Cloth [ ] Leather [ ] Other; [ ] Rebound; [ ] Secure; [ ] Broken Or Torn

7. Microfilm Master Held: [ ] Yes [ ] No

8. Remarks: (e.g. Significant Copy, Fine Binding, Mutilated Or Defaced By Readers, etc.)

   Most of pages broken at inner margin

### Peabody Institute

**Book Condition Report**

1. General Book Condition: (Perfect) 1 2 3 4 5 (Poor)

2. Paper Condition: [ ] Excellent [ ] Weak (Puffy) [ ] Stiff [ ] Brittle
   [ ] Extremely Fragile [ ] Discolored

3. Missing Page Numbers

4. Missing Plate, Map, Chart, Diagram Numbers

5. Port of Text Lost Due To Mutilation Or Crumbling On Page Numbers

6. Binding: [ ] Cloth [ ] Leather [ ] Other; [ ] Rebound; [ ] Secure; [ ] Broken Or Torn

7. Microfilm Master Held: [ ] Yes [ ] No

8. Remarks: (e.g. Significant Copy, Fine Binding, Mutilated Or Defaced By Readers, etc.)

   Several pages loose

### Harvard University

**Book Condition Report**

1. General Book Condition: (Perfect) 1 2 3 4 5 (Poor)

2. Paper Condition: [ ] Excellent [ ] Weak (Puffy) [ ] Stiff [ ] Brittle
   [ ] Extremely Fragile [ ] Discolored

3. Missing Page Numbers

4. Missing Plate, Map, Chart, Diagram Numbers

5. Port of Text Lost Due To Mutilation Or Crumbling On Page Numbers

6. Binding: [ ] Cloth [ ] Leather [ ] Other; [ ] Rebound; [ ] Secure; [ ] Broken Or Torn

7. Microfilm Master Held: [ ] Yes [ ] No

8. Remarks: (e.g. Significant Copy, Fine Binding, Mutilated Or Defaced By Readers, etc.)

### Figure 1

Book Condition Reports as completed by three libraries on Sir John Thomas Gilbert's *A Jacobite Narrative of the War in Ireland, 1688-1691* (Dublin; J. Dollard, 1892).
project were published between 1870 and 1910.

In July 1967 cards for the first one hundred titles, with the blank Condition Report Form on the verso, were sent to eighteen libraries. These first cards were accompanied by a letter explaining the objectives of the pilot project, a copy of the CLR press release of January 31, 1967, announcing the grant, and instructions on filling out the report. An attempt was made to distribute titles evenly among the participating libraries, but the larger libraries with rich holdings of older materials understandably bore much of the burden. Holdings shown in the NUC-1956 determined the distribution. During the course of the project, seventy libraries participated.

It was thought originally that each title should be located in at least five libraries other than LC in order to identify a “good” or “best” copy. Early returns indicated, however, that such copies were usually located in the first two or three libraries queried. After this pattern became evident, only one to three reports on the same title were requested. Additional libraries were queried only when necessary.

In a nationwide project, it would also be important to know those titles that might not be held by LC or might not be deteriorating at LC, but were deteriorating in other collections. Thus, a number of blank condition reports were distributed to participating libraries for use when they encountered this type of material in their own collections. These libraries were asked to furnish the LC card number and a short bibliographic citation, if they could determine that LC had cataloged the book. If not, the responding library was asked to supply the full cataloging information on the blank side of the completed condition report. These reports were then handled in the same manner as were titles in the LC brittle book collection. Presumably due to busy staffs and other priorities, very few of these outside reports were received, but no conclusions can be drawn from the lack of such reports.

Data covering LC brittle books included the number of copies and editions of the work held by LC, the number of editions of the work according to the NUC-1956 and its supplements, the availability of the materials in microform, and a ratio of the number of titles that might have been copyrighted after September 1906 compared with those actually so protected.

**General Results**

On the whole, responses were prompt and the majority of libraries expressed an interest in the project. Several replies indicated that completion of the reports drew the responding library’s attention to materials needing special protection. Suggestions for improvements in the Condition Report Form led to a revision in mid-September.

Reports were received on 795 titles representing 860 volumes. The need for some preservation action is suggested by the fact that ninety-six titles (12 per cent of those checked) listed in the holdings of participating libraries were reported lost, missing, or discarded. Fortunately, the same titles were not missing in all libraries. It is of interest that approximately 15 per cent of the titles checked were in some library’s rare book collection or in an otherwise protected collection. The percentage was somewhat higher for American imprints in Class E (American History).

Returns also showed that books deteriorating in the LC collection are brittle in other libraries. The physical condition of a given book, however, was found to vary considerably, presumably because of variations in the amount and kind of use and in the conditions of

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2 The latest date prior to which all materials are in the public domain.
storage. It is worth noting that much of
the LC material used in the project was
beyond both physical preservation and
microfilming, but that in nearly all cases
the survey located at least one copy else­
where which was, except for the brittleness
of the paper, in excellent condition.

The time required by a responding
library to locate a given title in its col­
clection was always greater than the time
required to complete the report. In in­
stitutions with storage facilities for older
and lesser used material, it was fre­
quently necessary to retrieve titles need­
ed for the project from these facilities. The responses indicated that the con­
dition report can be completed in five
to fifteen minutes per volume.

Most libraries indicated that the form
could have been completed by clerical
staff but that it was actually done by a
professional. The NUC-1956 appears to
be reliable; in only a few instances was
there evidence of an error in the report­
ing or recording of a library's holdings.

LC had only one copy of a large ma­
jority of the 785 non-fiction titles. Of these, about 30 per cent had appeared
in at least one other edition according
to the LC shelflist and the NUC-1956. Because cataloging information sup­
plied by some contributing libraries usu­
ally does not provide sufficient detail, no
distinction was made between variant
printings. In most instances it was pos­
sible to identify different editions.

In a full-scale preservation program,
the inability to distinguish between dif­
ferent printings would create some prob­
lems, since it would probably be de­
sirable to preserve all available variants.
Of the 785 non-fiction titles, the NUC-
1956 and its supplements indicated that
some 15 per cent were held by LC only,
and that 50 per cent were recorded as
held by six or more libraries. A search
of the National Register of Microform
Masters, and its card supplement, and
other microform catalogs indicated that
5 per cent of the non-fiction titles had
already been preserved on microfilm,
the majority by LC.

Because some concern has been
voiced as to how copyright would affect
preservation activities in regard to mak­
ing microfilm copies, the copyright files
at the Library of Congress were
searched for this information. The total
number of titles in the sample for which
protection by renewal of copyright was
possible (i.e., those copyrighted during
or after September 1906) was 19 per
cent (149 titles) of the 785 titles
searched. Only 10 per cent of the 149
titles were actually protected by copy­
right.3 All renewals were of American or
English titles. It appears from these fig­
ures that copyright would not be a
serious obstacle to a major filming effort
unless there are significant changes in
the copyright law. Searching the copy­
right file requires as little as five minutes
per title after the imprints of 1906 and
later have been separated from other
titles.

Each title can be given the total
search procedure at LC in about twenty
minutes. This estimate does not allow
for time taken in moving from catalog to
catalog, and it is premised on the as­
sumption that the work is batched for
the most efficient searching. Allowing
time for other clerical tasks involved in
distributing the cards and for copyright
searching where required, the total
processing time amounts to approxi­
mately twenty-five minutes per title.
Assuming an increase in efficiency with
experience, it seems reasonable that pro­
duction could be raised to twenty-five
titles per day or 6,250 titles per man
year. At the prevailing general salary
rate for two competent searchers, it ap­
pears that the cost of identifying the
best copy of a given title would aver­
age about $1.20. This amount does not

3 Subsequent work in the LC Brittle Books Project
indicates that the percentage of material actually pro­
tected is lower.
include other overhead costs such as unpacking books, record keeping, shelving, and similar tasks.

Fiction in English presents a different picture than nonfiction. Probably no other type of material (PZ 1, 3, 4) so recommends itself for preservation of the physical book in preference to microfilming. Although there are some microfilm projects in this area, it is unlikely that many libraries would be able to justify the expense of purchasing the collected works of popular, but minor, nineteenth-century authors. In addition, scholars interested in these authors would probably want to use the physical volumes. At this time, LC practice is to film nonfiction in preference to fiction. Most of the PZ 3 materials in the LC brittle book collection were published during the 1880's and 1890's; thus copyright is no problem. Of the three hundred titles in this class which were fully searched, 42 per cent were held only by LC.

CONCLUSIONS, PROBLEMS, AND RECOMMENDATIONS

One problem which will have to be faced, if and when a national preservation collection is assembled, is that some older materials have never been fully cataloged at LC because of other priorities, and no LC cards have been printed for them. About 150 titles of the original sample were not searched because of the unavailability of cards. This point may seem to be minor, but the convenience of working with printed cards bearing full bibliographic information is not unimportant for reasons of both accuracy and speed. One solution to this problem would be acceptance of a temporary entry for these works when no other cataloging is available. LC microfilming specifications, however, now require that bibliographic data at the beginning of a reel be in conformity with established LC cataloging practice.

Comments on the condition reports, coupled with discussions with other librarians, raise the question of whether it is realistic to suppose that a library holding the best or possibly only extant copy of a title would (or could because of legal restrictions) give it up to a national preservation collection. It is certainly doubtful that materials in rare book collections or materials of strong local interest would be surrendered. Equally troublesome is the problem of filming. Several reports submitted in the project indicated that a title was in excellent condition, but that any microfilming would have to be done on the premises.

On the basis of the study, it was concluded that it is administratively feasible to establish a national preservation collection of materials now deteriorating in the nation's research libraries. This assessment, however, extends only to the identification of brittle or deteriorating materials in other libraries and to a determination of the physical condition of such materials. Although no special attempt was made to do so, the establishment of a central register of best copies appears to offer no particular problems.

The actual implementation of a national preservation program would pose substantial technical questions as well as administrative problems, although such questions were not a part of this study. In order to preserve volumes effectively in such a collection, a more efficient and much less expensive method of deacidifying paper than now exists is required. Research now underway may solve this problem in the near future, or it may prove to be only a partial solution. Additional research is needed.

Further, there is no assurance that the optimum storage conditions for the indefinite preservation of paper are known. There is, for example, a substantial question as to the proper humidity for storing such materials. Even the matter of proper storage temperatures is uncertain. The work of the late
William J. Barrow and others indicated that low temperature storage may provide maximum protection, but this has not yet been thoroughly investigated.

Other things being equal, it would seem that a national storage collection located near some large metropolitan center would be ideal. Effective arguments can be put forward for locating such a collection near the nation's capital and the Library of Congress, but it may prove prohibitively expensive to construct a suitable building, including the necessary air-conditioning, near Washington. Thus it might be better to consider the use of a large natural or man-made cave, such as an abandoned mine, in which proper humidity and temperature can be maintained more easily and at lower cost than in a building specially designed for this purpose.

There is the further consideration that, for a collection composed of the best remaining copies of all important titles from the nation's libraries, the location should be selected to provide maximum protection from destruction in the event of war. This would seem to argue for an inland and perhaps an underground site.

By way of next steps, the library has suggested to the ARL Preservation Committee that consideration be given to the preparation of a questionnaire to be distributed to all ARL members to determine: a) the willingness of these libraries to contribute volumes to a national preservation collection; b) their willingness to accept responsibility for preserving books in their own collections that have been designated as national preservation copies; and c) the need for development of indemnification procedures.

This pilot study was only the first step in exploring the problems involved in developing a national preservation collection. If physical books are to be saved for future generations, the library community will need more exploratory studies as well as technological breakthroughs. The volume of deteriorating materials requires that action be taken in the near future, if the nineteenth century is not to become known as the beginning of the bookless age.
When Archibald MacLeish became Librarian of Congress in 1939, the library profession objected to the appointment of an untrained librarian. Yet, within five short years MacLeish infused new life and spirit into the library. He introduced modern fiscal and administrative concepts, arranged for systematic surveys of the collections, defined goals and priorities for acquisitions and services, and initiated progressive personnel policies. But his most enduring contribution to American librarianship is his dynamic philosophy and his insistence that librarians be not mere keepers of books but active participants in the education of the people in the values of their democratic heritage and the defense of intellectual freedom.

ARCHIBALD MACLEISH will always be best known, no doubt, as a great poet and writer. But librarians will recall that just thirty years ago he was also appointed Librarian of Congress, a post he held for five years. This paper will attempt to review his half-decade of service in that position.

I. A CONTROVERSIAL APPOINTMENT

To put the story in perspective, one must go back a little in the history of the Library of Congress. From Civil War days to 1939 the library had been, except for a short interval, under the direction of two men, Ainsworth Rand Spofford and Herbert Putnam. Under Putnam’s leadership (from 1899 to 1939) the library had increased its holdings from about a million to about six million volumes of books and pamphlets, not counting maps, newspapers, music, prints, and manuscripts running into the millions. The Library of Congress classification scheme was devised, cataloging practices became standardized, the printed card service was inaugurated, the Union Catalog had its beginnings, and in 1930 Congress authorized the construction of the Annex just across the street from the original building which had been completed in 1897.1 Thus, to use MacLeish’s words, “the Library of Congress in 1939 was not so much an organization in its own right but the lengthened shadow of a man.”2 No wonder that the question of the succession to the office of Librarian of Congress aroused unusual interest.

Already towards the end of 1937 Herbert Putnam had indicated a desire to retire. The Executive Board of the American Library Association promptly appointed a committee to advise President Roosevelt on the nomination of a

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Miss Goldschmidt is Administrative Assistant to the Director, Walter E. Meyer Research Institute of Law, Columbia University.

successor. Throughout 1938 and the spring of 1939 the committee sought in vain to obtain an interview with the President. As time elapsed and no nomination was forthcoming, the ALA intensified its campaign, and at the instigation of the Association’s officers letters from librarians started to arrive in large numbers at the White House and Congressional offices.

Meanwhile, the man who spurned this well-intentioned advice confessed to his friend, Justice Felix Frankfurter, that he had “had a bad time picking a librarian to succeed Putnam.” He had, he said, “been tempted to appoint Archibald MacLeish” and wondered what Frankfurter thought. Admittedly, MacLeish was not a librarian, “nor a special student of incunabula or ancient manuscripts.” Nevertheless, Roosevelt thought, “he has lots of qualifications that said specialists have not.” In reply Frankfurter not only warmly endorsed MacLeish’s candidacy, but he also tried, apparently successfully, to allay Roosevelt’s misgivings regarding MacLeish’s lack of professional training. “What is wanted in the directing head of a great library,” Frankfurter wrote, is “imaginative energy and vision.” He should be “a man who knows books, loves books, and makes books. If he has these three qualities, the craftsmanship of the library calling is an easily acquired quality.”

On June 6, 1939, President Roosevelt made known his nomination of MacLeish to be Librarian of Congress. An immediate furore arose, both in Congress and among professional librarians. Violent anti-New Dealers saw in the appointment of this alleged pro-Communist and fellow traveler one more bit of evidence of “Communist influence on appointments emanating from the White House.” Librarians were outraged at the nomination of a non-professional. The incumbent President of the ALA indignantly told the press that to appoint MacLeish as Librarian of Congress was about the same “as appointing a man Secretary of Agriculture, because he likes cut flowers on his dinner table.”

The general burden of the argument against MacLeish’s appointment was that “there is a great deal more to being Librarian of Congress than possession of an ignorance of the Dewey Decimal system,” and that in appointing an “untrained and unqualified person” the President was coming “to the aid of the enemy,” just as the ALA was “beginning to win its nationwide battle” for recognition of librarianship as an established profession. “Politicians, university authorities, and other appointers” would “not be slow in taking the President’s cue.” More library positions were likely to be filled from outside the profession, making it thereby “less attractive to ambitious and able recruits.” A non-professional could not truly represent

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2 “MacLeish Appointment Protested,” ALA Bulletin, XXIII (July 1939), 467.
4 Letter from Felix Frankfurter to Franklin D. Roosevelt, May 11, 1939, reprinted in Mears, op. cit.
6 “MacLeish Nomination Raises Controversy,” Publishers’ Weekly, CCXXV (June 17, 1939), 2159-60.
8 “Panned Poet,” Newsweek, XIII (June 19, 1939), 20.
9 “Library, Librarian,” Time, XXXIII (June 19, 1939), 18.
10 Viola Mauseth, “MacLeish Appointment,” Saturday Review of Literature, XX (July 1, 1939), 9.
the Library of Congress, which was "in a special sense . . . the representative and symbol of the whole body of American librarians," unless MacLeish's selection implied that "the claim that librarianship is a profession is all bunkum."14

Although the ALA claimed that in its opposition to MacLeish's appointment it spoke for 90 per cent of American librarians,15 the nomination was warmly defended by some leading librarians and non-librarians alike. The New York Times editorially endorsed the appointment. The Staff Association of the New York Public Library urged prompt Senatorial confirmation.16 Writing editorially in the Saturday Review of Literature, Henry Seidel Canby dismissed the charges of MacLeish's pro-Communist sympathies as "that familiar red herring." The real issue, as he saw it, was whether the head of a great library should be a specialist "in the technique of bookgetting and bookkeeping, or should be an executive broadly trained who has demonstrated his scholarship, his ability to organize, and his capacity for representing a great storehouse of intellectual energy."17 Other supporters of MacLeish unanimously cited his successful career as lawyer, poet, writer, editor of Fortune magazine, and Curator of the Niemann Collection of Journalism at Harvard University. Although a poet, they said, he was not a dreamer.18 "Far from moongazing," he was "a thoroughly practical workman of marked executive ability and extraordinary energy." Efficient and sensitive, he had the ability to inspire affection and confidence in all who worked with him.19

He was a man of vision and a humanitarian.20 Librarians should welcome a man of MacLeish's character and talents and not set up requirements so stringent that an able scholar and administrator could not readily join their ranks.21

The campaign against MacLeish's confirmation shifted into high gear when the ALA membership gathered in San Francisco for its 61st annual conference from June 18-24. The Executive Board, on June 18, sent a protest letter to President Roosevelt and members of the Senate, asserting that confirmation of MacLeish would be "a calamity," because he "lacked the essential qualifications of a librarian." Library services "would almost certainly deteriorate under amateur leadership." Two members delegated to represent the ALA at the hearing of the Senate Library Committee on June 21, 1938, soon reported back, however, that the matter seemed practically settled and that their strenuous protestations appeared to be of no avail. Indeed, the committee voted unanimously to recommend confirmation.

This was the signal for further frantic activity by the ALA leadership, but thanks to Ralph Munn, President-elect of the ALA, saner counsels prevailed in the end. Speaking at the closing session of the conference, he made it clear that he would do nothing further to oppose MacLeish's confirmation. On the contrary, he would ask the Executive Board for authority to write to MacLeish (in the event of his confirmation), explaining that opposition had not been based on personal feeling but solely on the

16 "MacLeish Nomination Raises Controversy," op. cit.
17 Editorial, Saturday Review of Literature, XX (June 17, 1939), 8.
ground of lack of training, and that—having fought and lost—the ALA would not "sulk like spoiled children." 22 When the Senate confirmed MacLeish's appointment on June 29 by a vote of sixty-four to eight, 23 Mr. Munn kept his word and offered the new librarian the ALA's "complete and most friendly cooperation." 24 MacLeish promptly and graciously accepted the proffered olive branch. 24

It is perhaps idle to speculate why President Roosevelt and members of the Senate so completely ignored the spokesmen of the library profession. There is some indication that the very vehemence of its campaign created the impression that the ALA was a self-seeking pressure group, which had overplayed its hand. It was said that the ALA had recommended the appointment of its own secretary to the library position, while this same secretary was sending letters to librarians urging them to protest the appointment of MacLeish, a circumstance which Senator Barkely, head of the Library Committee, felt Senators had "a right to consider" in determining "the weight to be given to the protest." 25 For the ALA leaders, on the other hand, appointment of a non-professional added insult to the injury of being consistently ignored. Had President Roosevelt taken them into his confidence, they might not have reacted as vehemently as they did to MacLeish's nomination. The entire episode, at best, is a study in poor public relations.

II. REORGANIZATION OF THE LIBRARY OF CONGRESS

The task which the new librarian assumed officially on October 1, 1939, was staggering. 26 The problems Herbert Putnam left for his successor to cope with were as vast, many, and varied as had been his achievements. A committee of outside library experts 27 conducted a thorough administrative survey and reported that the Library of Congress had "in all probability the largest and most diffuse span of control to be found in any American library." Below the two top administrative officers, the Librarian and the Chief Assistant Librarian, were thirty-five separate administrative units, all reporting directly to the chief. "Small wonder," the committee stated, "that the library is often described as a group of libraries within a library. It is in effect a loose federation of principalities, each with strongly developed traditions and with administrative and technical idiosyncrasies." 28 No central control along functional lines existed. Eight distinct divisions, offices, or services, for example, maintained accounting records, and no less than ten divisions were engaged in the processing of books, without any central supervision over their respective activities.

24 Ralph Munn and Archibald MacLeish, "Let Us All Cooperate," Library Journal, LXIV (August 1939), 570.
25 Quoted from Congressional Record, June 21, 1939, cf. Marion C. Manley, "Letter to the Editor," Wilson Library Bulletin, XIV (September 1939), 74-75. Two representatives sent by the ALA to the hearing of the Senate Library Committee on June 21, 1939, took great pains to deny that the ALA's protest was the "action of a pressure group fighting for a member of its own machine." Cf. ALA Bulletin, XXXIII (October 15, 1939), 37.
26 This section of the paper is based on the following materials: U.S. Library of Congress, Statement of the Librarian of Congress in Support of the Supplementary Appropriation for the Fiscal Year 1941 (Washington: Government Printing Office, 1942); U.S. Library of Congress, Annual Report of the Librarian of Congress for the Fiscal Year Ended 1940 (Washington: Government Printing Office, 1941); Ibid., Annual Reports for 1941, 1942, 1943, 1944 (1942-1945); Archibald MacLeish, "The Reorganization of the Library of Congress," report from Library Quarterly, XIV (October 1944), 1-37; Luther H. Evans, Confidential Reports to the Librarian, 9 vols., unpublished. As the above sources contain a great deal of overlapping information, references are given only for exact quotations.
28 Ibid., p. 2.
This fundamental weakness in its organization was reflected in the state of the library at the time MacLeish took office. There was an arrearage of about one and one-half million unprocessed books and pamphlets, and this arrearage was growing at the rate of about thirty thousand items per year. In December of 1939, 66,000 books and pamphlets were backed up in the Cataloging Division, some 20,000 volumes were awaiting classification in the Classification Division, and twenty truckloads of law books were to be labelled and marked. The Gift Section had 20,000 unacknowledged and unprocessed books. It took an average of forty-two days from the receipt of materials until they were ready for the shelves. Recommendations for purchase of current materials, except for rush orders, waited an average of three weeks before orders were placed by the Order Division. Items selected from dealers' lists were delayed up to five months. Insistence on full cataloging treatment and classification meant low output per worker and correspondingly high processing costs. Output per assistant in the Cataloging Division for 1938-39 was only four hundred titles per year, or one and one-half per working day! The Accessions Department had an arrearage of 2,000 unpaid bills totalling about $70,000. Binding arrears exceeded 370,000 volumes. The Card Division reported 15,000 delayed titles. There was no proper inventory of the library's holdings. An inventory taken from 1928-1934 had revealed over 170,000 missing items.

As to the quality of the collections, they were found to be strong or even outstanding in a good many areas, such as American history, library science, economics, political science, medicine, incunabula, fine arts, aeronautics, orientalism, music, Hebrew literature, and Russian materials. Nevertheless, a Committee on Acquisitions appointed in November of 1939 concluded that "the library is not maintaining its proper position in respect to the completeness or the quality of its holdings, which are marked by important deficiencies." These deficiencies were particularly glaring in the principal European literatures, in general history other than American, in education, anthropology, and most technology. In fact, the library had no considered acquisitions program at all, but "depended rather on the activities of sellers in offering materials than on its own activity as a buyer in deciding what materials it needed and seeking them out." Of forty important subject areas, only twelve received relatively adequate attention from library staff or consultants, thirteen were partially provided for, and with respect to fifteen there was no provision at all for initiation of orders. More than half of the purchase recommendations for 1939 were made by the Library's Card Division on the basis of recommendations of outside libraries placing orders for cards. The collections had never been systematically surveyed to ascertain gaps or needs.

Reader and reference services were scattered unsystematically among the library's numerous departments and divisions. Much time was lost, especially in the Accessions Department and the Reading Room, in answering inquiries and in rendering services which ought to have been performed by a central reference division. The legislative reference service in particular was understaffed and inadequate. While some subject divisions were serviced by scholars familiar with their fields, there were many important areas in which no member of the library staff had more than a superficial knowledge of the subject matter.

29 The committee consisted of library staff, but drew on the advice of specialists from other libraries in formulating its report and recommendations. Ibid., p. 5.
30 Ibid.
Another major area where action was desperately called for was the staffing of the library. Lack of space before the completion of the Annex in 1939 and inadequate appropriations meant that year by year work loads had kept increasing while staff numbers had remained stationary. Accessions, for example, had increased eightfold without a corresponding increase in staff. Salaries were substandard not only in comparison to other professions, but also in comparison to those of librarians in larger colleges and universities. The staff, therefore, was either underqualified, or where qualified, grossly underpaid. MacLeish noted in his 1940 Annual Report, for example, that one-third of those working in the Processing Division had not completed college; less than one-fourth had a bachelor's degree in library science, and only 6 per cent had advanced degrees in library science. On the other hand, fifty-six holders of JD's, PhD's, or MA's were employed at salaries of less than $1,980 per year!

In trying to deal with these manifold problems, he did not, MacLeish emphasized, deliberately set out to reorganize the Library of Congress. However, he soon found that dealing with one problem had effects on related problems and that "eventually it would prove simpler to change several things than to change one." If not the intent, at any rate the result of MacLeish's activity from 1939 to 1944 was a complete reorganization of the library's administrative framework, an evaluation and definition of its policies as to acquisitions and services, and constructive innovations in personnel practices. It is impossible within the scope of this paper to do more than give a very sketchy outline of the major changes brought about.

The first important step was to reduce the excessive span of administrative control to manageable proportions. The Law Library and the Copyright Office were retained as separate entities. All other organizational units were grouped into three departments: The Processing Department, the Administrative Department, and the Reference Department. The Processing Department was designed to bring together under central control all operations necessary to prepare newly acquired materials for the shelves. The Administrative Department absorbed mainly what might be termed "housekeeping" functions and fiscal matters. It adopted modern procedures and accounting methods, with control properly divided between allotting, paying, and accounting officers. Personnel matters also came under its jurisdiction.

The Reference Department, contrary to the other departments, which were formed from the outset along functional lines, was initially an agglomeration of divisions and sections that did not readily fit into the other departments. The excessive span of control from which the library as a whole had suffered was therefore in large part transferred to the Reference Department. Not until 1944 were the twenty-four administrative units which reported directly to the Director of the Reference Department reduced to fourteen, reporting through three Assistant Directors.

One important change affecting the Reference Department, which took place before its internal reorganization, was the establishment of the Acquisitions Department in 1943. Until that Department was established, the operations relating to acquisitions were divided between the Reference Department responsible for book selection and the Processing Department, which pur-

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31 Ibid., p. 2.
chased and accessioned new material. To provide centralized control over all acquisitions policies and procedures, the new department took over book selection from the Reference Department and the Accession Division from the Processing Department. At the same time the Administrative Department was abolished and its functions transferred to the office of the Chief Assistant Librarian, who had until that time doubled as Director of the Reference Department. He now relinquished that directorship to the Reference Librarian. The organization as it evolved, therefore, consisted of the Chief Assistant Librarian as executive officer in charge of library-wide administrative services, while the library’s three main functions of acquisitions, processing, and reference were performed through the three corresponding departments. 33

Returning to acquisitions, the matter of book selection was of constant concern to MacLeish. The report of the Committee on Acquisitions regarding the deficiencies in the library’s holdings has already been noted. To devise criteria for book selection, it was necessary to define the library’s basic objectives and policies. There had always been a certain ambiguity as to the library’s role. Were its duties limited to serving the needs of the members of Congress, since Congress had established and directly controlled the library? Had the library any responsibility to perform services for other departments and agencies of government? Or was the Library of Congress a national library in the broadest sense designed to serve the needs of American scholarship at large? Moreover, how active should the library be in making “any part of the printed record available to society?” Was it enough to “drop a book into a reader’s hand,” or should the library take the initiative in making materials available that were relevant to the controversial issues confronting the American people? 34

To answer these questions a series of meetings was held with the library’s principal officers during the summer of 1940. “They were not,” MacLeish noted, “the most successful meetings I recall,” as a number of his “elder colleagues thought the Library of Congress was too big and too old... to ask itself what it was doing and why.” 35 Eventually, however, “Canons of Service” were adopted which—while they failed to answer some of the more philosophical questions as to the nature and role of the library—established these basic policies and priorities as to service:

1) The Library of Congress undertakes for Members of Congress all research and reference projects required by Members of Congress in connection with the performance of their legislative duties.

2) The Library of Congress undertakes for Officers and Departments of Government research projects which can be executed by reference to its collections and which the Departments’ own staff cannot perform.

3) The reference staff and facilities of the Library of Congress are available to members of the public, universities, learned societies and other libraries requiring services which the Library is equipped to give and which can be given without interference with services to Congress and other Government Departments.

The relative emphasis as regards service to Congress, the Government and the public contained in the “Canons of Service” is reflected in the “Canons of Selection” which were adopted as broad guidelines for the library’s purchases. They provide:

1) The Library of Congress should possess all bibliothecal materials necessary to Congress and to the Officers of Government of the United States in the perform-

ance of their duties, unless other government libraries adequately cover particular fields.

2) The Library of Congress should possess all books and other materials which express and record the life and achievements of the people of the United States, with the exception of official records deposited in the National Archives and with emphasis on materials of national rather than local significance.

3) The Library of Congress should possess the material parts of the records of other societies, past and present, and should accumulate full and representative collections of the written records of those societies and peoples whose experience is of most immediate concern to the people of the United States.

Application of these “Canons” in practice presented problems. In 1940 book selection responsibilities were centralized in the Reference Department. A schedule of allotments by subject fields was prepared. The sums allotted were determined on the basis of known deficiencies in the collections, expected acquisitions from sources other than purchase, the extent of literary production in the field, and the relative importance of the subject to the library in accordance with the “Canons of Selection.” With the aid of a grant from the Carnegie Corporation a number of fellowships were established. The fellows, subject specialists in their fields, as well as associate fellows from the library staff and other government organizations, undertook systematic surveys of the library’s collections and made purchase recommendations. After the transfer in 1943 of book selection to the Acquisitions Department, the library continued to make use of its subject specialists in whatever department they might be working. However, for their recommendations they were made “officially answerable” to the Director of Acquisitions, even though in other respects they were answerable to other directors. As MacLeish remarked, this arrangement might present difficulties “to those who love to reduce organization to charts and graphs, but it has the great counterbalancing advantage that it works.”

This remark typifies MacLeish’s dynamic approach, which in the field of personnel administration led to particularly fruitful results. As soon as he took office, MacLeish tried to obtain salary increases for the staff and was able to obtain a supplemental appropriation from Congress. A survey of library positions (the first in eighteen years) undertaken by the Civil Service Commission from 1941 to 1943 resulted in the re-classification of many positions to higher grades. But much more, MacLeish urged, had to be done to erase the discrepancy between library salaries and those obtainable for other work of professional caliber. There was no reason, he insisted, why librarians’ salaries should be less than those of lawyers, economists, or other professionals, if salaries were “to be determined upon the basis of the difficulty and responsibility of the work done.”

It would be wrong to assume that MacLeish, by reducing the organizational span of control in such a way that instead of some fifty persons only a handful reported to him directly, cut himself off from meaningful contact with all but the top echelon of the library’s staff. Quite the contrary. His deliberate policy was the greatest possible involvement of staff at all levels in the decision-making process. “Administrative machinery,” he said in commenting upon the effects of the reorganization, “is not machinery but people, and ‘administrative channels’ are not channels but human relationships . . . The moment ‘channels’ dominate communications or administrative charts tyrannize over administrative action, the official joints con-
geal and the institution hardens." He stressed that any member of the staff who wanted to see him could do so "regardless of blueprints," and that any piece of library business which could not "accommodate itself to channels" would get done "regardless of channels."38

Staff involvement, however, was not merely fortuitous. "The most effective single administrative unit in the library," according to MacLeish, was the Librarian's Conference, composed of the top eight administrators, which met daily with MacLeish and made it possible to arrive at policy decisions rapidly and "with a minimum of office memoranda."39 These daily discussions not only assured a hearing for all points of view, they also kept the library's top officers informed of each other's activities. This enabled MacLeish to shift personnel from department to department as the need arose. This "administrative interchangeability," as he called it, was not only desirable in itself, MacLeish thought, but was designed to "insure the Library of Congress against the academic isolationism which has had such harmful effects in American universities, and through the universities on American education."40

The interests of the staff as a whole were represented by the unions,41 which MacLeish did not hesitate to recognize.

In fact, he encouraged them "as valuable instruments of good administration."42 In cooperation with the library unions promotion policies and grievance procedures were evolved which went far to resolve the many conflicts and problems which are bound to arise in an institution in a state of transition and under wartime strains.

At the unions' suggestion, a Staff Advisory Committee was set up in 1942, composed of eight members, two each chosen by the unions and four by the librarian, which served as a channel for employee proposals and criticisms. Through various sub-committees the Staff Advisory Committee involved a large number of staff members in its activities.

For technical matters MacLeish drew on the library's professional personnel. The Professional Library Association, established in the spring of 1943, met once a month to consider problems of bibliographic control and adequate scholarly services.43

All these measures were part of a general pattern which MacLeish called "government by discussion." Not everyone approved of it, he admitted. "Men of certain temperaments find talk annoying—particularly talk in public enterprise. Talk, they say, wastes time . . . but talk, kept within proper limits, can save time also and can gain what time alone might lose." The gain he had in mind was that of giving "an increasing number of men and women the sense of participating creatively and responsibly in a work which all of them may feel proud to share." This, if nothing else, he believed, justified the policies inaugurated during his five years as Librarian of Congress.44

Archibald MacLeish's accomplishments

38 Ibid, p. 16.
39 Ibid., p. 15-16. As originally constituted, the Librarian's Conference consisted of Luther H. Evans, Chief Assistant Librarian; Edgar F. Rogers, Executive Assistant to Dr. Evans and Director of Personnel; David C. Mears, Director of the Reference Department; Herman H. Henkle, Director of the Processing Department; Verner W. Clapp, Director of the Acquisitions Department; Ernest S. Griffith, Director of the Legislative Reference Service; Clement L. Bouve, Register of Copyrights; and Eklon R. James, Law Librarian, who succeeded John T. Vance upon the latter's death on April 11, 1943. Below the top level other departmental and interdepartmental committees operated to promote administrative coherence and uniformity of policies.
40 MacLeish, "The Reorganization of the Library of Congress," p. 34.
41 Local 1 of the United Federation of Workers of America and Local 626 of the National Federation of Federal Employees.
42 MacLeish, "The Reorganization of the Library of Congress," p. 34.
43 All members of the staff grade sub-professional 5 and up were expected to attend these meetings.
as Librarian of Congress would have been remarkable under any circumstances. They are all the more remarkable if we take into account that he operated under wartime strains and stresses. One particularly serious consequence of the war was an acute shortage of trained personnel and a staff turnover at times as high as 150 per cent per year. The library lost employees not only to the armed services but to other government agencies and private business because its salaries were not competitive, despite MacLeish’s efforts to have library positions upgraded and salaries increased.

MacLeish did not wait until the United States entered the war to take measures to protect the library’s collections. Already in 1940 he ordered a survey to ascertain which materials should be removed to places of safety in case of danger, and which would be required for the continuance of essential services. Suitable locations were explored and detailed plans for evacuation drawn up. The library was, therefore, in a position on December 7, 1941, to take immediate action. Many hundreds of boxes of valuable materials were shipped to places of comparative security. Irreplaceable treasures, such as the Declaration of Independence and the Constitution, were stored at the United States Bullion Depository at Fort Knox. There they remained until after the Normandy invasion of 1944, when it was considered safe to return them to the Library of Congress.

At the same time that the most valuable materials were removed for safekeeping twenty-four hour service for members of Congress and Government officers was initiated, and the library was called upon to perform for defense agencies an array of emergency tasks too numerous to recount here. In every detail of its operation during these critical years of MacLeish’s leadership the library demonstrated that “no library’s resources can ever be too complete for the necessities of a great industrial state engaged in war, which involves all its facilities, all its manpower and all its knowledge.”

III. A POET’S PHILOSOPHY OF LIBRARIANSHIP

It is impossible to evaluate MacLeish’s record as librarian without saying something about the philosophy and spirit underlying all his actions. In exquisite and poetic prose he defined the role he believed librarians must play in a time when the nation’s democratic heritage was threatened by aggression abroad and obscurantism at home. He disdained a narrow professionalism. Noting that no generally accepted definition of the librarian’s role had yet been found, he deplored that some of those who had tried to put librarianship on a professional basis, “began not with the inward function of librarianship but with the outward furniture of professionalism—the professional schools, the professional terms, and the professional privileges.”

To arrive at a meaningful definition, he believed, called for a reconsideration, “which cuts beneath all this to the essentials of our work and our lives.”

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To MacLeish there was an important distinction between books as "physical objects, made of certain physical materials in a physical shape," and the "intellectual object made of all materials or of no materials and standing in as many shapes as there are forms and balances and structures in men's minds." The librarian who saw his role merely as that of keeper and dispenser of physical books, was "a sort of checkboy in the parcel room of culture." His duty was "to receive the priceless packages confided to him by the past and to re-deliver them to the future against the proper stub." It was enough for him to be "reliable, orderly, and industrious," and "to devise infallible and complicated ticket systems to find the parcels on the shelves." Beyond that, all he had to do was wait for the claimants.

If, on the other hand, the librarian was the keeper of the intellectual book, he could not be "neutral, passive, and negative." His profession "must become instead the affirmative and advocating profession of the attorney for a cause."

To MacLeish it was clear which conception librarians must choose and what the cause was which must enlist their energies. As he put it, the choice was determined by "the nature of the times." A generation or two earlier a passive role might have sufficed. But in 1939 and in the years to follow, America's democratic institutions and values were endangered by the onslaughts of fascism. Fascism sought to destroy Western culture; it was the enemy of all civilized values, of the life of the mind, and of the freedom of the intellect. The danger was not only fascism abroad, but fascism at home, bred by the discontent of the "intellectually and culturally dispossessed" lower middle class. The only alternative to fascism was an attempt "to educate all people of this country to the value of the democratic tradition they have inherited to prevent some of the people from destroying that tradition for all." And the burden of this education, as MacLeish saw it, must fall on American libraries as the only institutions suited to the task.

He stressed over and over again that librarians could fulfill this task only by a positive approach. It was not enough, he said, for them to "secure books intelligently and to make them readily available to the inquirers." They must learn how to get readers for their books. They must "become active and not passive agents of the democratic process," and must use "every means at their disposal to bring to the people of this country a disinterested, informed account of the means of education at their disposition." The people, he believed, had "as much a right to know from public servants what books are pertinent to their self-government as to know from public servants what jellies they should conserve, what seed they should plant or what hen mash will produce eggs."

MacLeish took issue with those who viewed libraries as "cultural luxuries." The war, he contended, had amply demonstrated that libraries were "a vital necessity to a nation." He condemned those who thought "the only duty of a librarian is to thicken the indifferent walls of his library until it becomes a kind of bombproof shelter for intellectual irresponsibility in which no echo of the agony of mankind can ever penetrate." He chided the scholarly community for its intellectual isolationism and warned that armed victory would

52 MacLeish, "Libraries in the Contemporary Crisis," Library Journal, LXIV (November 15, 1939), 879-82.
55 MacLeish, "The Library and the Nation," p. 146.
be meaningless if the "battles of beliefs" were lost, "if the confidence of men in learning, in reason, and in truth were broken and replaced by trust in force and ignorance and superstition." 56

As the war progressed and the Nazi danger receded, MacLeish's thinking shifted increasingly from national survival and the preservation of democracy at home to the needs of the world at large. The Nazis, he said, had paid unconscious tribute to the libraries of the world, because in destroying them they had made it clear that their "anti-culture" could only exist in "a desert of ignorance and apathy" where libraries and learning had been extinguished. At the end of the war many areas of the world would be left without library facilities and one of the urgent needs of liberated peoples would be the restoration of libraries. This, however, would be difficult, if not impossible, because "a great collection of books is always and necessarily unique." No amount of effort and money could procure many of the older materials. If they existed at all, they existed only in other libraries where they were not for sale. The only practicable solution of library reconstruction in occupied Europe and Asia, MacLeish urged, was "to enable the scholars of these areas to draw upon the resources of the great libraries in other parts of the world which still possess their collections." He envisioned a system of world circulation of library materials, based on "the principle that the world's great libraries hold books in their possession as trustees, not for the people of their immediate neighborhood, nor even for the people of their particular countries, but for the entire generation of living men." 57

He did not think that large or expensive machinery was needed to establish such a worldwide system. A network of regional union catalogs with an international clearing house exercising central control could operate effectively, he believed, by drawing on the experience with interlibrary loans within national boundaries and by making the greatest possible use of modern photographic devices, air transport, etc. Eventually this might lead to a division of responsibility, on an international scale, for the acquisition of the ever growing flood of printed materials. Such a system would be of tremendous importance not only to libraries and librarians but "to the understanding of each other of peoples who must understand each other if they are going to live together in peace." 58

During the fifties, when McCarthyism was at its peak and librarians throughout the country were under pressure from self-appointed censors, MacLeish again raised his voice on behalf of intellectual freedom. Speaking at the dedication of the Carleton College library on September 22, 1956, he noted that "a surprising proportion of our people are today engaged in activities, such as the attempted suppression of books and opinions by boycott and by economic pressure of various kinds." Librarians had a clear duty to resist such pressures. Their "criterion of choice" must be "a disinterested completeness within the limits of a practical relevance." As "trustee of the printed record of his civilization," a librarian could not but "regard any exclusion from his collection of a relevant book or class of books as a falsification of the record and a breach of the trust." It was the basic assumption of all self-government that people are capable of examining the evidence for themselves and coming to their own conclusions. Any effort to withhold, suppress or censor books did violence to 58

that basic democratic assumption. Every librarian “worthy of the name” belonged among the champions of the cause of free inquiry. “And as long as the fight to subvert freedom continues, libraries must be strongpoints of defense.”

MacLeish’s plea for librarians to assert their influence on behalf of liberty, reason, and the functioning of the democratic process, free from intimidation by extremists and fanatics of whatever variety, certainly has not lost its relevance in our own troubled times.

IV. CONCLUSION

Very little has been written about MacLeish’s role as librarian since he left the Library of Congress towards the end of 1944 to become Assistant Secretary of State. The only account of the reorganization of the Library of Congress was written by MacLeish himself in 1944 for Library Quarterly. Scattered comments by his colleagues, however, indicate that they were impressed by his performance. His successor, Dr. Luther Evans, briefly reviewed the highlights of MacLeish’s administration in his first Annual Report to Congress and concluded that “the outstanding characteristic of that brilliant episode is not the fact that so much was consummated in so short a time, but rather that there is now so little to repent.” Another leading librarian wrote at about the same time that it was the considered judgment of librarians who knew MacLeish best and who had seen him in action that it is doubtful that anyone else could have accomplished as much as he did in five years. More recently, David C. Mearns, who had served under MacLeish as Director of the Reference Department, paid him a belated tribute. “It can be confidently, and even judicially declared,” he wrote, “that his mistakes were few, whereas his attainments were many, were great and are enduring.” MacLeish had “brought pace, style, taste, sagacity, and grace to his librarianship. . . . But most important,” Mearns considered, “he instilled a sudden sense of contemporaneity and an awareness of a world beyond the bookstacks.”

In closing one cannot do better than to quote from the statement transmitted to MacLeish by the staff of the Library of Congress on the occasion of his leave-taking. In their farewell his colleagues expressed

... their warm and enduring affection for a friend; . . . their admiration for an inspiring administrator; their continuing loyalty to the sustained and penetrating vision which has given new meaning to librarianship, to the high purpose, to the relentless drive towards accomplishment, and to the integral humanism of his insistence upon the participation of libraries in the processes of democracy and civilization and in the liberation of the human spirit. . . .

JERROLD ORNE

The Place of the Library in the Evaluation of Graduate Work

Traditional, time-honored methods of evaluating the adequacy of academic libraries for graduate work are no longer adequate in themselves. Rising numbers of students, changing degree programs, and advancing costs are rendering traditional evaluation methods less and less adequate. Greater attention should be devoted to the assessment of research collections in the region, to pondering new kinds of library plant needs, to rethinking the use of library personnel, to seeking new systems for funding library operations, and to articulating librarians more completely into the university community.

Implicit in the title of this paper is the conjecture that the presently organized system for judging the adequacy of a library for graduate purposes is not good enough. With such an implication in view, this paper will touch upon various aspects of the library and its work, briefly noting present methods of evaluation and suggesting major movements which might be considered to supplement them. Let us begin with the library's collections, since through long tradition we may be convinced that the library is its book collection. The Council of Graduate Schools' leaflet on The Doctor of Philosophy Degree says, "The library should, of course, contain extensive materials in the given field, both of a general and specialized nature. Library materials available on loan or at other institutions are helpful but not sufficient." Its leaflet on The Master's Degree says, "The library should, of course, contain far more extensive materials than are usually present in an undergraduate library." These fairly general statements are extended a little in the final citation, the CGS leaflet on new PhD programs. It cites one of very few numerical measures, the allusion to a basic one hundred thousand volumes for a solid undergraduate college library, plus more general statements referring to the number of areas in which the degree is to be given. No one can argue with the correctness of these statements. One can, however, contest their adequacy. The latter leaflet also recognizes access to other resources, when it says, "It is important to make provisions for procuring research materials from sources outside the university and when necessary to allow for travel expenses to other libraries with specialized holdings not locally available."

In a recent article, Dr. Robert B.
Downs wrote, "It seems doubtful that high-level doctoral work in a variety of fields can be carried on with less than half a million volumes and with annual book expenditures under $200,000." In this year's guide for grant proposals issued by the Office of Education appears the following statement as one measure: "An institution offering PhD programs should have five hundred thousand volumes for its first degree program and fifty thousand additional volumes for each additional PhD program." While these statements have not yet become criteria for evaluation, they will be used, rightly or wrongly, wherever they may be expedient to various purposes. It is just such statements that lead to specious devices for measuring the mirages which sometimes are conjured up to cloud an issue.

We are now faced with a rapidly evolving change in the whole concept of graduate education and with other influences that must affect its evaluation. The first of these is numbers; this affects all of our topics. The second is changing degree programs, changing as to content and time scale; and the last is cost. Each of these has a profound effect upon the library and suggests attention to other considerations for measuring collections.

Most large institutions with extensive graduate programs are now finding ways to provide basic collections for undergraduate use and others, far more extensive, for their graduate programs. This is reflected in published lists of basic undergraduate titles, and usually in separate locations for the several levels of bibliographical support. It is often represented in numerous subject libraries found outside of the main library, or on separate floors of new multi-story libraries.

Certainly the number of programs must be carefully scrutinized. It is easier to measure a young institution now offering its first or early graduate programs than an older one which may be deficient for half of those offered.

Costs are now so high that the measure of library adequacy must be somehow broadened to encourage considerable and responsible sharing of resources. The cost of materials and their incorporation into libraries, considering the vast numbers of new institutions, has reached such a level as to give us pause. It is now not only impractical but downright foolhardy for any institution to presume it can depend entirely upon its own resources, even for a few fields of graduate work.

Every current movement points to closer coordination or cooperation, and funding sources everywhere are feeling new pressures to promote such efforts. On the federal level many grant opportunities are tied to joint-use proposals. On the state level there are steadily increasing numbers of consolidated systems, some of which are already found in Southern states. In large cities, such as New York, one finds extensive consolidation. Consortia of various types have been with us for many years. All of these are heavily influenced by costs, and this compels our attention to their use in new measures.

Libraries and librarians today are vitally concerned with consolidating resources; they are keenly aware of the imperatives of costs and numbers, often much more so than their academic principles. The librarian can and will measure his available resources, and with the systems concepts now springing up, can often advise positively of reasonable availability when resources needed are not right at hand. There are numerous library networks now being formed to provide types and levels of access never before possible and never before so desperately needed to enable the support of burgeoning graduate programs.

1 "Doctoral Programs and Library Resources," CRL, XXVII (March 1966), 129.
The critical point to be made with respect to collections is that while our previous measures were and remain sound, a much more liberal view will have to be taken of resources not on site. One may also have to count as one resource the readiness and capacity of the librarian to assess and utilize well a broader spectrum of resources than those in his own charge.

Any consideration of the physical facilities used by libraries leads to similar thoughts. Present measures provide again fairly general statements, plus one specific. The library standard calls for "Proper seating accommodations ... for at least one-fourth of the largest number of students on the campus at any one period of the day. In areas of graduate study and research, carrels which may be individually assigned should be provided. Conference rooms and seminars are highly desirable. ..."2 Standard 10 makes no specific mention of library space.

The problems of numbers have forced solutions which might otherwise never have been found in libraries. A Bunyanesque step was taken with the advent of the separate undergraduate library. The enormous expansion of undergraduate student numbers has made omnipurpose libraries unsuited for the serious, intensive study of the researcher, and unconscious pressures have combined to force the separation. Another major change is seen in the increasing spread of individual carrel provision, even in the open reading areas of undergraduate or general libraries. The noise and traffic accompanying large numbers has led even the less-serious undergraduate to concern for his time in the library. And finally, because a faculty office is no longer a haven, increasing numbers of faculty studies are found in new library structures.

Increasing numbers of graduate programs are compelling a restudy of views concerning central versus separate facilities. Today new graduate and research programs often require specialized resources, either separate or jointly used, beyond any regular uses of the parent institution. Physical decentralization is often forced upon us, and we find that it is not at all bad, so long as bibliographical control is still possible. This is little different from accepting the sharing of resources in a number of neighboring institutions, a practice long used to avoid pointless duplication.

We have also learned more about compelling relationships between subject fields, and we can be wiser in planned decentralization. There are now more bio-medical libraries, science libraries, and other viable combinations, wherever the volume of graduate work warrants such structures. Once more numbers and costs have taught good lessons.

Circumstances require a new look in yet one other area. Present standards put a premium on direct access to the book collections, and for decades this has been considered one of the essential perquisites of the graduate students and faculty. Yet many are now impressed by the relative unimportance of browsing, long touted as the best avenue to discovery. The volume of published material in almost any given field is so great that browsing is well-nigh impossible and usually unproductive. Libraries in many institutions most dedicated and productive of research in other countries have never allowed free access to central collections and indeed have never been concerned with subject classification to any great degree. Accession number shelving by two or three sizes seems not to have inhibited productive use of these libraries.

More critical for the future will be special kinds of space and some new space relationships. Libraries are moving

steadily towards computer use, towards new functions as communications and distributing centers. Thus measurement of libraries will have to include, in addition to all standard physical necessities, facilities for promoting swift and comprehensive access to a larger world of regional or national resources. Specifically, library structures will need suitable spaces for computer centers, extensive photocopying facilities, and communications centers, each with its particular staff.

There are some changes needed in measuring library staffing, due more to new methods than to either numbers of students or costs. The current standard speaks briefly and in fairly general terms to the numbers of staff members and expenditures for staff. Librarians themselves have attempted the establishment of statistical measures as well as classification and pay plans. The academic status of librarians continues to be a contentious topic. One unquestioned criterion is the acceptance of a degree from an ALA-accredited library school as making a professional librarian. Obviously, accrediting agencies have a high regard for their peers. None of this is said to suggest elimination of these useful measures, but to restate those in use. There are, however, some additional criteria which might be considered as supplements or substitutions.

Libraries of great research institutions today have discovered and accepted the need for new types of staff, formerly unknown or disguised under the inappropriate title of librarian. Specially trained personnel to man the computer center, the photocopying center, and the communications center are often highly trained professionals, but they are not necessarily librarians. In fact, to insist on the title may make the manning of such positions impossible.

Another rapidly expanding staff area is that of the subject bibliographers. Such staff members now increasingly serve the collection-building needs of a library, as the faculty retreats more and more from bibliographical chores.

Finally, it is now generally recognized that the new librarianship is sharpening its use of manpower by separating professional from clerical skills to attain a more rational proportion of the numbers of each type needed to serve these new and different functions as well as the older ones.

Future measures of library staffing should include not only numbers or costs, but more specifically the types of professionals available and their special qualifications for new methods of service. Graduate programs must be supported in the library not only by major bibliographical resources but by trained personnel for assuring intensive access to them. The potential usefulness of such a professional staff can be seriously prejudiced, if not completely vitiated, by inadequate clerical support to free the professional for entirely professional service. The library administration must be capable of using these varied talents well to constitute a harmonious and effective service agency. The basic difference between evaluation of the usefulness of the library for graduate education and for the undergraduate program might be described in a few words as the difference between serving materials and serving people. Better evaluation of the library as an apt agency for serving graduate programs might be achieved by examining closely how well its staff is organized to serve the users, rather than to serve materials.

It is in the area of evaluating financial support that present measures of the library are woefully deficient. Dependence now rests, in large measure, upon statistical devices of questionable reliability. Furthermore, the subliminal influences of such measures sometimes re-

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3 This is much more critical for graduate programs than at lower levels.
sult in changes so crudely effective as to inhibit truly responsible improvement.

Evaluators now begin by comparing like institutions, using size of library, overall expenditures, expenditures for library materials, expenditures per student, and other such distinctive periodic statistics. They have also one rule of thumb, which is based upon a percentage of the total educational expenditure of the parent institution. The only virtue these figures possess is that it is usually possible to obtain a chronological series and fairly comparable statistics from a number of sources. The reliability or integrity of any of these magical numbers is not nearly so virtuous.

It is well-nigh impossible to get uniform, comparable, or unbiased statistical reporting from any group of institutions, despite (or perhaps because of) the earnest intentions of those concerned. The character and measures of one institution seldom conform to those of another. The size of a library may be grossly inflated by the inclusion of varying types of materials or simply by a method of counting. The per-student cost ratio may be totally lacking in significance in varying types of institutions. How can a per-student cost at Michigan State, with 40,000 students, be compared to that of Duke University, with fewer than 6,000 students? Their libraries are nevertheless approximately the same size! Obviously, a different kind of collection is needed to serve 40,000 than a student body of 6,000 would require.

Comment should also be made on the educational budget percentage figure frequently cited as a measure, usually stated as 5 per cent. In recent years, ever fewer large libraries have reached or maintain this level, and if it is claimed, the calculations may be deviously combined to prove it. The simple fact is that there are too many variables to make this a reliable measure. Newer institutions must spend a very large percentage of their budget to build up a library quickly. Older institutions have their historic accumulation already in place and benefit considerably from gifts. A dozen other variables could be cited to demonstrate further the hopelessness of a percentage measure, but conclusive evidence can be found in the chronological record of a single institution over a long period of time. In many such instances, a highly regarded library improves on a gradually decreasing percentage of a growing institution’s educational budget.

Future measures of financial support especially significant for graduate programs will need to consider far more variables than ever before, and any statistical measure will have to rely more heavily on current circumstance than upon historical precedent. Among these current variables are the widely differing levels of demand for library resources, as between laboratory sciences and the humanities. Also important are significant differences in unit cost, for art books and literary monographs, or between music scores and economic treatises. Many similar divergences could be cited. Another complex variable is the level of production in various subject areas. Literary and historical book production outnumbers the publication of math or physics titles by a factor of hundreds.

On a totally different track, the constantly changing aspect of academic involvement in grants and contract research often creates an aggravating imbalance in the research library. The library is often neither consulted nor included in the financial benefits accompanying such ventures. When through strange circumstance it is included, this may result in short-lived and embarrassingly inequitable surfeit in one area while other critical needs continue on short rations. These difficulties are perhaps enough to illustrate the complexity
of the problem. Though not pretending to any universal solution, a few points might be suggested which future standard measures will have to consider. They do not simplify the problem.

The new technology, now only beginning to be applied by research libraries, will soon substitute certain machine operations for either the codex book, staff, or both. Yet these costs will be bona fide library expenditures and must be recorded as such. In a simple form the expense may be only the cost of a ten-page give-away Xerox copy of a needed article. A more expensive example might be a telefacsimile printout purchased from the American Chemical Society in Columbus, Ohio, of a small number of abstracts selected by its computer center from thousands of entries on a specific topic. Other library costs may be assigned to mechanical tools supplementing the on-site repertory of library resources. Rentals or purchase of new machines, communication lines, and the cost of staff to service them will be taking an ever larger part of library budgets. How can this fail to affect expenditures for books and journals? In many fields the rapid expansion of indexing and analytical services has out-paced and out-priced the traditional acquisitions pattern.

Other influences affecting staff will enter into the new complex. Professional associations and labor unions are making their strength known in ways that cannot be disregarded. The incredible manpower shortage, which has recently forced an improvement in the use of professional time, will also affect any review. The use of a wider range of types of professionals will make the library staff a more complex instrument to assess, but evaluation must be made of the entire resource, of which the staff is critical in serving graduate education. The professional will be increasingly professional, more expensive, and more demanding of privilege and recognition.

All of these facts will affect costs.

Another aspect of the research library that will require increasing attention is its public relations. Until recently general opinion has too often held that a great library, like a small child, should be seen but not heard. Its primary contact with the senior faculty was through a library committee, now a rapidly diminishing influence if not an anachronism.

The library has always maintained good working relationships with its peer institutions, mainly through the loosely organized interlibrary loan convention. It has also served its less-blessed neighboring institutions, though often with ill-grace and occasionally with crusty denial.

The library's present relationship to its parent administration was aptly expressed in a recent journal article title, "The Bottomless Pit, or the Library as Seen by an Administrator." This may be taken as a token of deteriorating relationships between the harried administrator on one side and the beleaguered librarian on the other. If such a condition persists, it could be highly prejudicial to effective development of the library for graduate study.

Future evaluation of a library for graduate-level service might well give more attention to some activities, seemingly unrelated to research, but in fact the sine qua non of the successful research library. The first of these is the place of the library and its staff in the academic community. This place can be established only by frequent direct contact or interaction between librarians and faculty. There must be good two-way communication or poor service will follow. Librarians must participate actively in academic chores, serving on faculty committees and sharing the burdens of academic protocol. The faculty must plan with the library to assure

availability of needed resources at the time and place needed. This has been said before, of course, and all agree on the need for such action. What is now added is an urgency, a considerable increase in demand for the fact, not the word. It is no longer possible for either the faculty or the librarians to wend their separate ways. Current pressures for information, better analysis of materials, swifter access, and far greater provision of materials compel a sharing of endeavor beyond anything previously known in the world of learning.

A large part of the success of the research library today can be measured by its place in its own professional community, that is, the community of American research libraries and similar regional associations. Most planning for joint use of major resources, for programs designed to extend or broaden services, and for staff development has been initiated by such groups. Those few quantitative or evaluative devices now in existence were started and are maintained by them. Granting the difficulties and imperfections of such measures, they represent some of the few comparative measures we have over a statistically reliable period of time.

These same professional organizations include the leadership of planning groups devising local, regional, and national systems. The fundamental basis of the need for such systems is the service of graduate study and research. These mutual aid systems, now called "networks," are an essential part of any major library concerned with graduate programs of study or research. These relationships will acquire increased importance as graduate study is extended on any campus and as graduate programs grow across the country.

In summary, the evaluation of a library for its capacity to serve graduate study requires more specific study of the collections beyond the basic under-graduate collection. It must give particular attention to related materials within a broad service area and determine the extent to which they may be utilized.

Library buildings and tenant space require new views of separation or decentralization, depending largely upon numbers. Individual seating now has far greater importance and must be noted. Even the idea of open access is now once more in question. Special spaces within libraries for new tools or methods will count heavily toward effective service to graduate students.

The library staff must be examined closely to determine how they serve, and how professional librarians are used. Other professionals (non-librarian) will be counted in increasing numbers. The ratio of professional to sub-professional and clerical staff is often revealing.

The financing of libraries grows constantly more difficult to evaluate. Expenditures must now be more specifically related to the levels of work and subject fields involved. Increased importance may be assigned to shared use and shared costs. New costs accompanying new devices, methods, and their specialized staffs will skew present total cost measures.

Finally, the place of the library, and its staff, in the world in which they live and work, will need far more than the usual platitudes of full acceptance. Only genuine sharing of academic planning and full participation in developmental groups can serve to assure competent preparation for graduate programs. It is incumbent upon the evaluator to verify the true extent of these essential relationships.

It is clear that the task grows ever more complex; this is the mode of our time. There are those who believe that if something is harder, it must be better. If this be true, we are getting better all the time.
The College Library in New York’s 3R System

In an effort to determine the attitudes of academic librarians in New York State vis-à-vis the 3R’s program, a questionnaire was distributed to forty such persons now involved in it. Replies indicate that: 1) the role of the college library in such a program differs from that of the public library; 2) they have benefited from the program in a variety of ways; and 3) they envision a range of cooperative efforts remaining to be attempted as funding becomes available.

Birth of the 3R’s

The Reference and Research Library Resources Program, or the 3R’s as the program is widely known, developed as a result of the critical need to supply advanced scholars in New York State immediate access to research library materials. Although the state’s twenty-two public library systems were serving, generally, the reading and reference needs of 98 per cent of the population through more than seven hundred public libraries, nevertheless college students and college faculty, graduate students, scientists, industrial researchers, and writers were not assured ready access to the rich resources of the special and private research libraries where use was restricted only to a small segment of the research community.

Higher education in New York State began to grow at a rapid rate. Because of the rapid expansion and development of both the public universities and public community colleges and of the private universities, colleges, and professional schools, it was virtually impossible to provide for the research library needs of the growing numbers of students and faculty. There were 685,000 (full-time and part-time) students enrolled in colleges and universities in New York State during the 1967-68 academic year. It has been estimated that during the 1974-75 academic year, there will be 948,570 students enrolled in institutions of higher education in the Empire State. Essential to creative scholarship by undergraduates, graduate students, professors, and other researchers is quick and easy access to a growing mass of books, periodicals, monographs, and technical report literature. Thus, the avalanche of published scholarship from the publishers of the world is another great factor in the creation of the 3R’s Systems.

Since New York is the country’s leading manufacturing state, a vast amount of research and development is initiated there, which requires excellent library resources among its indispensable tools. With the ever-increasing demands for improved and expanded research library service, therefore, the Commissioner of Education appointed a select committee

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of twenty leading citizens in 1960 to study the library needs of the state’s research community.

REPORT OF THE COMMISSIONER’S COMMITTEE

After carefully studying the research needs of the state, the committee presented its findings and recommendations in 1961 in the *Report of the Commissioner’s Committee on Reference and Research Library Resources*.

The report underscored the fact that "public library systems . . . cannot fully meet the special needs of research workers and professional people." It was emphasized also that public library systems cannot meet the library demands of college students. Supporting the contention that reference and research library resources systems would strengthen the public library systems were the following two goals as indicated in the report:

"Providing reader access to libraries over a larger area than that served by a single public library system.

"Providing reader access to other types of library collections—college, university, industrial research, and private special libraries."¹

NINE REGIONAL SYSTEMS

Following the Governor’s Conference on Libraries in 1965 and the first funding of the program in 1966, interest in the 3R’s developed rapidly so that by May 31, 1967, the entire state had been organized into nine regional Reference and Research Library Resources Systems. Each of the nine regional systems is composed of a voluntary association of college and university, special, public, and research libraries. There are 133 academic institutions that are members of these systems.

³R’S FUNDING AND PROJECTS

As of this date the 3R’s program is not funded by permanent legislation. Funds to support the program are appropriated to the State Education Department from the Governor’s Executive Budget. The 1966 program was supported by a $700,000 appropriation; the 1967 program received $850,000; and the current fiscal year which commenced April 1, $1,250,000.

Statewide 3R’s projects that have been developed to extend advanced reference and research library service have included the following:

1. an experiment in Facsimile Transmission designed to provide rapid access to research materials. This project commenced in January 1967 and terminated March 31, 1968. The program was abandoned because:
   (a) the performance of the facsimile transmission equipment employed did not justify continuation,
   (b) the poor quality of the copy limited the service, and
   (c) there was not a high enough volume of demand to justify the cost;

2. an experiment in a statewide interlibrary loan project, known as NYSILL, which was inaugurated in March of 1967. The State Library has contracted with three large public libraries and nine private research libraries to provide access to their collections via interlibrary loan. These libraries are reimbursed by the state for lending their materials. Because of this innovative program, serious researchers are assured access to the rich private research collections in the state wherever they may be located in the state and whatever may be their affiliation;²


²For a more detailed discussion of the Facsimile Transmission Project and the New York State Interlibrary Loan Project see E. J. Josey, "Two 3R’s Pilot Programs: NYSILL and FACTS," talk given at School/Public Library Relations Conference, Sheraton Motor Inn, New York City, February 8, 1968.
3. several library electronic data processing projects. These include:
   (a) the automation of the Serials Section of the State Library, and
   (b) a system design for a general purpose computer-based catalog maintenance system for research libraries which has been completed by Theodore Stein Associates. This automated cataloging system may be used in the Mid-Manhattan Library of the New York Public Library. This library will serve undergraduate college students in the metropolitan New York City area. This design will be available to other research and college libraries in the state that wish to employ it;

4. plans currently underway for the publication of a statewide union list of serials. This list will contain the holdings of all of the major libraries in the state, and it will enable serious library users to identify, locate, and gain access to the enormous output of serial literature.

Opinions of College Librarians Concerning the 3R Program

In an effort to determine academic librarians’ attitudes toward the 3R program, a questionnaire was sent to forty such persons who were actively involved in the 3R’s as trustees of the systems or on committees and whose libraries were members of the 3R’s regional systems. The questionnaire contained three questions. These forty college librarians are fairly representative in that they are affiliated with public and private institutions and represent a good cross section from all nine of the regional 3R’s systems. The questionnaire was mailed on March 20 and the librarians were requested to return the document by April 15. By May 14, thirty, of 75 per cent, of those canvassed had responded. In view of the high percentage of returns, the findings may be considered significant.

The first question consisted of two parts, and its overall objective was stated as follows:

As a college librarian, how do you view the role of the college library in the 3R’s Program? If you do not view the college library’s responsibility or role as being different from other libraries that are members of 3R’s systems, is there a special contribution that the college library can make?

The response to question one is quite revealing. Five of the thirty respondents viewed the college library’s role as being the same as other types of libraries; one of these five respondents, however, the librarian of the Albany College of Pharmacy, stated,

... I don’t view the college library’s responsibility as being different from other libraries, but as librarian of a special college library (Pharmacy), I know that we can make a special contribution, since we do have materials in our subject specialty that other libraries would not have, and we are therefore a resource for anyone who needs these subjects.

A second member of this group, Barbara LaMont, Librarian of Vassar, said,

I do not see that the role of the college library is different in kind from that of other libraries. The extent of its contribution to the resources of the state or region will depend upon its strengths and weaknesses relative to other institutions. Of course that measure applies to other kinds of libraries as well.

An overwhelming number of respondents, 22, or 73 per cent, believe that the college library’s role or responsibility is different from other types of libraries that are members of the 3R’s systems. Only three of the respondents did not answer the question.

On the philosophical side, since we are attempting to determine whether
the role of the college library is different, and since the largest number of New York state college librarians who presented answers to the question declared their college libraries’ roles to be different from those of other libraries, let us now listen to some of their comments.

Robert B. Palmer, Librarian, Barnard College, writes,

The role of a college library differs from that of a public library. Its main and primary responsibility is still service to the higher education institution of which it is a part, and not to the general public. As to the special contribution that a college library can make, a lot depends on the geographical location of the college library. If the college library is not located in or near a metropolitan area—it should offer liberal use of shared library facilities to other serious library users and researchers.

Mrs. Ottilie H. Rollins, Librarian of Clarkson College of Technology, indicates that “…Clarkson has definitely a different role to play than other libraries in the 3R’s system. It should concentrate on the needs of the academic and research communities in the science and technology fields to facilitate the work of the researcher. . . .”

Brother Thomas, Librarian of Iona College, writes that “in this program the college library is sort of a ‘middleman.’” Mary Campfield, Librarian of Ithaca College, views the college library’s special contribution as providing “library service, whenever possible, to eligible patrons of public library systems both local and regional.”

Two librarians who view their college libraries’ role as being different underscore the fact that college libraries need help from other libraries. This viewpoint comes firstly from Mother O’Connor, Librarian of Manhattanville College who declares “. . . yes, college libraries have a special need: access to more serious works of scholarship, long runs of periodicals . . . access to obscure university publications, etc., . . .” A second viewpoint in this same vein comes from Henry James, Librarian of Briarcliff College, who says, . . . our role is essentially parasitic, and we look to the 3R’s program to give our students access through Metro affiliates or neighboring libraries in the county to special monographs and journals. The big question for us is: what can we give in return? True we are providing increasing numbers of scholarly books . . . but is this enough? And how can we benefit our larger academic colleagues?

Two respondents clearly state that the college library’s role is one of leadership in the 3R’s systems. Edward A. Chapman, Librarian of Rensselaer Polytechnic Institute, suggests it should be . . . almost one of leadership if funded to take on the extramural tasks entailed in network service, and to develop subjects to the depth required by the various regional interests to be served. The special contribution that the academic library can make lies in the nature of the requirements it is set up to serve—Reference and Research.

Supporting the leadership thesis is Donald Yelton, Librarian of the State University of New York College at Potsdam, who states,

It seems to me that the appropriate role of any library in the program is conditioned by its strength as a reference and research resource. In this perspective I would say that “pound for pound” (or volume for volume), the college library . . . represents a stronger resource than the public library of equivalent size, since it contains a smaller proportion of ephemeral or merely “entertaining” works. In most situations a role of leadership seems indicated.

Time will not permit the reading of the comments of eight librarians who felt that while the college library’s role is different, it possesses unique collections that could be made available to
other academic libraries and to public libraries through interlibrary loan.

An appropriate conclusion to the catalog of responses to question one are the remarks of Egon Weiss, the Librarian of the United States Military Academy.

The academic library is destined to become the special resource center of specialized materials, e.g., Foreign Area Study, Technical Information, etc. Its major contribution to other libraries and systems, therefore, lies in its capability to render bibliographic services and access through electronic tie-ins with regional, state, and national networks and other pertinent data banks.

Question two was designed to ascertain from the college librarians the extent to which their libraries have profited by the ongoing 3R’s program. The question was posed as follows:

Although the 3R’s systems since 1966 have been financed out of an appropriation from the Executive Budget and unlike the public library systems are not financed as of this date with permanent legislation and permanent funding, certain statewide and regional projects have been undertaken. During this short span of time, what residual benefits have college libraries received from the 3R’s program?

With regard to question two, eight of the thirty respondents listed three or more residual benefits from the 3R’s programs. These benefits were listed as being the facsimile transmission experiment, and New York State interlibrary loan program, daily delivery service in the 3R’s region, regional union list of serials, directory of resources, and a union catalog. Sixteen listed one tangible benefit; most frequently cited was the statewide interlibrary loan program. Three failed to respond, and only three indicated no tangible benefits had come to their libraries.

Basic to the benefits from the 3R’s that the college librarians are citing as being serviceable to their libraries, and of equal importance, is their faith in the potential usefulness of the program for the future. This faith in the future is reflected in the following comments.

Emerson Jacob, Librarian of the State University of New York College at Fredonia, says “... we feel that the planning already undertaken will bring substantial gains in the future. If there is permanent funding, much greater regional library cooperation will be possible as certain plans and techniques already formulated become operational.”

The librarian of Finch College states “It is more of a promise of things to come and a faith in group effort that gives value to our participation in the program.”

The net meaning of the replies to question two would appear to be that a large number of college librarians consider the one great intangible reward from the 3R’s program to be the growth of cooperation among college librarians. They have demonstrated the feasibility and efficiency of concerted regional efforts in the councils. Evidence of this fact can be supported in these observations. Richard Shepherd, Librarian of the State University of New York College at New Paltz, writes, “The biggest accomplishment to date is the stimulation of interest and thinking about cooperation. The councils provide a vehicle for keeping the interest alive and putting projects to the test. Any activities that will relieve massive independent acquisitions programs and their local processing should be welcomed by libraries.” Taisto J. Niemi, Librarian of LeMoyne College, states, “I think the best result has been that it has forced us to take a close, hard look at interlibrary cooperation ... the consensus now is not the fears of cooperation. . . .”

Peter J. Laux, Librarian, Canisius College, concurs with this opinion in stating,
Setting up regional centers has, I think, forced all of us to examine our mutual problems and think in terms of how we can best grow together rather than each of us going his separate way. I think that the greatest benefits lie ahead, but we have finally established a framework within which healthy cooperative development can take place. However, we do need better financial support.

If the program were terminated tomorrow, I think, be a legacy of interlibrary cooperation among regional libraries which should continue to be advantageous to colleges as well as to other libraries. Even without the machinery evolved by the Councils, the personal and professional relations should continue to bear fruit. All of us have increased our acquaintance with resources available in the region and in the State, declared Donald Yelton of State University of New York at Potsdam.

The final question was, "What programs do you suggest that will benefit college libraries in the 3R's program?" This was answered by twenty-five, or 83 per cent of the respondents. Five failed to answer this question. The twenty-five respondents answering the question each suggested from one to four projects for the future. Thirteen suggested funds for cooperative acquisitions and shared use facilities; five indicated centralized processing; three called for storage facilities for lesser used materials; two pointed to the need for translation services; four desired a union catalog; four indicated need for an improved delivery service; one a repository for duplicate periodicals; nine desired a regional union list of serials; three suggested a more rapid efficient means of communications; four desired more continuing education workshops for staff of member libraries of the 3R's systems; four desired the installation of another facsimile transmission program; two suggested a regional reference center; three suggested the strengthening of the State Library in the areas of bibliography and foreign materials in order to strengthen its backstopping role; two listed computer support; and six indicated an improved interlibrary loan program. The programs that were suggested by the college librarians were merely a reflection of their 3R's regional goals, for most of the nine regional systems included most of these ideas as part of their budget proposals for the future. The listing of many of the same plans is evidence of the fact that college librarians are influencing the 3R's systems in planning for the future.

**College Libraries, the 3R's, and the Future**

Data from this small sampling of college librarians reveal that they firmly believe that the role of the college library is different from other types of libraries. There is compelling evidence that they think that the college library has special roles to perform which include the uniqueness of its collections and its special resources that may be lent to serious research patrons of public libraries as well as providing leadership in the 3R's.

By and large, these college librarians represent a group that is strongly committed to interinstitutional library service in a network consisting of various types of libraries. Although most of them assume that college library collections are unique, they are willing to fit the college library into a viable plan for pooling and sharing of resources. Moreover, the large number that cited the compensated interlibrary loan program as helpful is proof that there is a keen awareness of the realities of the time that college libraries are no longer self-sufficient and must exploit the resources of other libraries. The librarians in the group were grateful for the opportunity to plug into regional and statewide resources, but they also are aware of the

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importance of centralized indices which would identify and locate periodical and book holdings in order to expedite the transfer of materials between libraries.

While the data show that twenty-five of the thirty respondents indicated that their college libraries were aided by several ongoing 3R's projects as named above, it can reasonably be assumed that the involvement of the college librarians in their 3R's regional systems has, beyond a doubt, demonstrated conclusively the positive effects of regional and statewide planning.

College librarians in New York State may differ in the centrality of their concern for new 3R's programs for the future, as is recognized by the wide variety of programs envisioned or suggested. But, one fact is clear, i.e., a call has been sounded for regional development of library resources through cooperative acquisitions programs and for the pooling and use of shared resources and facilities.

Several of the librarians expressed the opinion that permanent funding continues to hold the solution to strengthening reference and research library service in the state. Most of this group of college librarians are pleased with the projects that have been inaugurated with 3R's funds; they nevertheless share the view of E. B. Nyquist, New York State Education Department's Deputy Commissioner, who contends that "the need for state legislation providing statutory state support for our state and regional programs, based on a formula reflecting need and use" must be implemented, if the 3R's systems are to face the challenge of meeting the advance reference and research library needs of the state.

A conclusion which is immediately apparent is that the college librarians involved in the 3R's program are endowed with the wisdom to predict that the interinstitutional system approach will not succeed unless the patrons of their libraries have the widest possible bibliographic and physical access to research library materials. Another hopeful conclusion, moreover, is that the experience and knowledge that college librarians have gained by working with a larger number of librarians from other types of libraries also have given them a deeper sense of participation in library affairs affecting a much larger area—the region—than their local community. This kind of cooperation bridges the gap between their own problems in college libraries and those in other types of libraries. Only through creative interinstitutional involvement can there be found creative solutions to pressing library problems. Finally, the eloquent testimony of this sampling of New York State college librarians can be interpreted as a total rejection of institutional competition in favor of interinstitutional cooperation.

This paper proposes that libraries of the future might sell as well as lend books and journals. This appears to be a natural extension of current practice in supplying Xerox copies. The paper envisions a machine-based catalog of bibliographic information that would produce not only borrowing information but purchasing information as well. The user could then decide what course of action would best meet his needs. New technology would assure that facilities for on-demand hard copy printout would be available.

It is proposed here to consider the implications of broadening the function of college or university libraries from a place where books may be consulted or borrowed to where they may also be bought. The aim is to provide better service at less total cost.

The suggestion that libraries sell books is less revolutionary than it sounds. A few libraries have had associated bookstores; a few more have sold paperbacks (see Annotated Bibliography A and B). Most make and sell quantities of Xerox copies of journal articles.

Many of us feel some reluctance in facing up to this revolution, but we cannot continue to shut our eyes. At M.I.T. copying in the library has increased a hundredfold in the last fifteen years. We made over a million prints last year and the rate will go up 50 per cent in two years if we follow the predicted national pattern (Annotated Bibliography C).

It is hard to avoid the logic that the next step in this direction should be selling in-print books. Many readers are willing, even eager, to pay for copies instead of going through the nuisance of charging out and returning books. If libraries were to add a bookstore function and sell in-print books as well as copies of articles, it would pay for itself and save much of the cost of operating the circulation system (at $1.00 or so per transaction). It would also mean convenience for users—only one place to go for books—and encouragement toward building up a library of their own.

The rental libraries which were popular thirty or forty years ago were the bookstores' attempt to get into the library business. No one, as far as the author can determine, has made a real try at putting a library into the book business. Limited experiments have been tried, mostly with a sales department under separate management and never with integrated catalog and reading rooms as suggested here.

My proposal is that four types of service be offered in libraries: sale of in-print books and journals, loan of duplicates, sale of copies of out-of-print materials, and, as a last resort, loan of certain single copy items where copying would be too expensive or for some other reason undesirable. Such an operation would hardly be possible on a large scale with manual catalog and inven-

The first draft of this paper was presented as a Working Paper at the Intrex Conference, September 3, 1965. Dr. Locke is Director of Libraries at Massachusetts Institute of Technology.
tory control, but with the availability and decreasing cost of computer assistance it will soon be feasible.

**Computer Catalog**

There is already sufficient experience with experimental on-line computer lists and catalogs¹ to be able to see the way they will work as soon as we can afford them. You communicate with them these days by typing your message. It types out the answer. It remembers everything it has ever been told, except that it completely forgets what it is told to forget. It can take and answer messages over any number of keyboards, i.e., in or out of the library. In its memory we shall put everything in the public catalog, the shelflist, the acquisitions and circulation files but not stop there. Since we are selling books, we shall also put in price and availability information for all items: are they for sale in paperback? in hard covers? in Xerox? can they be borrowed for outside use? Prices and other information are changed as conditions change. It is up to us to keep all the information up to date.

**Using the Library-Bookstore**

How does the customer get what he wants when he comes into the Library-cum-Bookstore? First let us assume he does not know what he wants. Then he will browse the shelves, or he can use the catalog from conveniently placed keyboards. He will find that the catalog has more flexibility than card trays in that it can retrieve bibliographic information on any criterion or set of criteria, not just author, title, or subject. The catalog will also cover not only monographs, but also technical reports and even recent articles in journals—the total coverage to be determined by the cost of storage and the use patterns of the population served.

¹ Footnotes are given at the end of this article.

Once the customer knows what he wants and whether he wants to buy or to borrow it, all he has to do is give the order on the nearest keyboard. The computer types out confirmation of the order or borrowing request, and the customer takes this either to the sales desk where he pays for and gets his book, or to the circulation desk where he gets his loan copy.

The operation is only slightly different for the customer who has found on the shelf something of which he wishes to buy or borrow a copy. Inside the back cover of every item is a magnetic stripe so positioned that it can be read by a reading device associated with the computer keyboards. When any book is presented to this device, the identity of the book is recorded in the computer. The individual can immediately get answers to questions about availability of another copy for loan, price of a copy if it is in stock, price of a Xerox, or instructions on how to proceed if it is desired exceptionally to borrow the shelf copy.

Once the customer has told the computer what he wants, he goes to the sales desk or circulation desk as above. Books reach the desks by conveyor from the print shop, the stock room, or the stacks, as the case may be. Records are kept of all transactions as they occur, so the computer always has a complete inventory, knows where every book is, can reorder sale items as the stock gets low, and keeps complete financial records. (See Bibliography D.)

**Storage Space**

It is evident that more storage has to be provided under this system. Sale copies and loan copies have to be stocked in addition to the original on the shelf. The major compensating fact is that the collection always remains intact, or nearly so, whereas in a conventional library the frustration index (per cent of desired books not found) may
run as high as 50 per cent. Moreover, duplicates for sale or for loan do not occupy prime shelf space.

It is not proposed to carry duplicates of the entire collection. This would be impossible in any large library. Selection policies will have to be laid down for the sale collection and the loan collection. The chief criterion will be probability of demand.

To manage the sales operation a bookman with merchandising experience will be needed. He would determine what books are to be available for sale and how many copies to stock. Libraries in educational institutions have lagged behind public libraries in display techniques which could encourage impulse borrowing. Improvements along these lines would be a dividend from having a merchandising man on the staff. Control will have to be exercised to prevent the building up of sales by stocking expensive books and novelties for the Christmas trade. Only books within the scope of the collecting policy of the library should be sold. Others should be left to the college store or the corner drugstore. Textbooks offer special problems of high volume and seasonality of demand. They should be sold elsewhere.

The computer would keep the merchandising manager informed of the demand rate for loans and sales of individual items, which would be a precious help in deciding what to order and when to reorder. It would provide similar services for the manager of the loan collection, who might be the same person. He would have to watch demand to see what high demand items should be purchased in extra copies.

As to books for course reserve, they will probably have to be serviced separately. They require different conditions of use from the rest of the collections: long hours, restricted circulation, many seats for heavy room use, rapid turnover. But again sales and Xerox can cut demand.

**Equipment**

In order to offer good service on copies of out-of-print books, we need faster, cheaper ways to copy whole books. It is not difficult to imagine an ideal setup, only difficult to get the development work financed. What we need is large scale storage of text in a form which will permit retrieval and transfer of the desired item to paper, preferably printing both sides, folding, binding, and delivery. One attractive possibility is to print on one side of a continuous strip of thin paper, fan fold, and staple. In any case it is essential that delivery be made in a matter of a minute or two even for a whole book. Experience in libraries and bookstores shows that customers want it now. A substantial percentage will not wait. As a service organization, the library should satisfy the largest possible fraction of requests as fast as possible. Speculation as to whether people really need what they ask for or whether they really have to have it now is self-defeating and is often a rationalization of failure.

How practical the above plan for fast reproduction of books turns out to be will depend on the development of a sufficient market for the equipment. High-speed printing, folding and stapling exist, but not input form microfilm or other large scale rapid access forms of storage. Xerox is said to be working in this direction. Others are certain to if there is a market. Let us look at M.I.T. as a sample of the market.

We are a relatively small school and library (7,500 students, a million volumes), yet we copy over a million pages a year. At an average of one hundred pages per book that is ten thousand books. With two hundred working days a year, we would have fifty books a day. For the present we have to conclude
that our output hardly justifies the equipment described. For the future the picture is different. Our demand has been going up 10 per cent a year. In eight years—and the equipment will not be ready much sooner—our output will double, so we will be doing one hundred books a day even without the added stimulus to demand of high-speed whole book copying. Let us assume that quick availability of whole books would again double demand to two hundred books a day. At two minutes per copy, this means nearly a 100 per cent load factor over a seven-hour day, an efficient operation. Larger libraries will have to have more than one production line or still faster equipment.

Based on experience we shall have to decide which portions of the collection are put into some form of storage for fast reproduction. Certain books, journals, and serials would be processed as they appear or would be purchased in microform. Others would be stored upon receipt of the nth request for a copy (the value of “n” to be determined on the basis of experience with that class of material). There will be rare, old, ephemeral, and other material which will never be ready for instant copying.

Tax status will come into question for nonprofit institutions selling books, but that should offer no serious problem. College bookstores are a precedent. Libraries may have to pay taxes on a percentage of their gross, but they should not be frightened by this prospect. They may have to pay royalties on Xerox copies, depending on what copyright legislation is finally passed by Congress. Rather than get into a discussion of this, let us agree that libraries will pay whatever taxes and royalties are legally required as copying methods improve and as the law and its interpretation in the courts evolve. One way or another we shall have to pass the cost on to the user.

Since the above was written there has come to my attention a proposal for a library at the Federal City College in Washington, D.C., written by Catherine Blumenfeld and Robert T. Jordan. It contains ideas similar to Mr. Clark’s, mentioned above. This would seem to be another of those cases where an improvement appears in several places when the time is ripe. I hope that others will experiment still further, in the direction envisaged here. High-speed copying has already revolutionized library services. The computerized catalog will add new possibilities. The above proposal for selling books in libraries is another forward step and is presented by the author in the conviction that the future is made of such small steps, not of a complete rupture with the past such as is forecast by those who cry “the Book is dead.”

Annotated Bibliography

A. Bookstores in Libraries:


Library bookstore since discontinued, not profitable. See 3. below.


Robert Bernstein said in an interview, “State and local governments could . . . benefit the public by creating bookstores in every public library and school in America.”


Bookstores at the University of North Carolina, at a branch of
the Toronto Public Library, and the Sales Shop of the New York Public Library are described. The first is apparently no longer a part of the library, and the second has been discontinued. The third is a small sales store analogous to stores in certain museums.


Small book selling operation in kiosk in lobby is economically questionable.


“Our basic suggestion, then, is to move the bookstore into the library—literally. The library cannot sell its possessions directly, but it could be the best bookstore in the entire world in displaying the titles available. All the library needs to add is an order desk. The student and faculty member simply fill out proper forms (or better, speak the order into a recording device), the library sends it off and notifies the purchaser when his package arrives. . . .”

B. Libraries Selling Books:


An honor system paperback shop for selected inexpensive paperbacks operated for fifteen years, broke even, now being absorbed into campus bookstore. “I still feel,” writes Mr. Deale, “that it’s a great idea for the small institution in a community which does not have other outlets.”


Librarians should overcome their habitual reluctance towards accepting money and sell books as part of their services.


“It is cheaper to give the book away than to go through the cost accounting . . . costs about 50¢ to return a book . . . and about 35¢ to give it away.” Francis E. Henne, Design for Paperbacks Conference.

C. Copying in Libraries;


Sixty-six American libraries studied made about 13,165,000 exposures in 1962 and 20,640,000 in 1966. The same report states (p. 84) “Several independent estimates of total annual copying of published material tend to converge around the following estimates: two billion pages
copied in the U.S. in 1967, with a forecast of three billion pages in 1969."

This report could more accurately be entitled "Evidence to support the contentions that 1) libraries are widely violating the copyright law, 2) libraries should pay royalties for each copy they produce of a page from a copyrighted work, 3) libraries should pay royalties to a clearinghouse." The initials purport to stand for Committee to Investigate Copyright Problems, but might be read Committee to Inaugurate a Clearinghouse Program, or even Clearinghouse Incorporated for Copyright Payments.

D. Inventory Control:


Though its cost figures are invalidated by the acceptance of an erroneous assumption concerning the availability of general character recognition equipment, the idea of permanent inventory control of the entire book stock is a good one.

NOTES

1 See Reports 1-8, and TIP System Report, October 1967, Technical Information Project, M.I.T. Libraries, Dr. Myer M. Kessler, Director. There also is much in the published literature.

2 The literature on selling books in libraries does not cover one of the most interesting examples. With the permission of Mr. Donald T. Clark, University Librarian of the University of California at Santa Cruz, I quote from a letter in which he describes his experience.

"Early in the development of the Santa Cruz campus . . . we concluded . . . that student cooperative stores usually did a fair job on supplying textbooks; an excellent job on supplying beer mugs, sweat shirts, pajamas, toothpaste, etc.; but did an extraordinarily poor job in meeting the intellectual appetites of faculty and students. We would like to see on our campus a store which would be directed to meeting these intellectual needs, a store which could create a climate encouraging browsing, development of personal libraries, good reading habits, and the like, a store which would recognize the tremendous change in book publishing brought about largely through the paperback revolution and could have a great assortment of materials readily available for the many students we expect to be engaged in independent study. We also saw this activity as taking some of the heat off our reserve book section . . . ."

"Administratively, the bookstore is viewed internally and externally as part of the library. The staff are members of the library staff; they join in all library activities ranging from Christmas parties to the use of the staff lounge. The head of our public services department is the counsellor for selection of materials for stocking in the bookstore. Our acquisitions people are ready to share their knowledge of trade tools, good sources, and understanding of the book trade. We have recently instituted a secondhand section in the bookstore wherein are sold many of our unneeded duplicates. We have not used the bookstore as a source of purchase except under emergency rush conditions.

"I think there is a real potential here and one which makes a lot of sense. With the right kind of personnel I am sure that we can forge ahead. It is an understatement to say that this activity has certainly added a new dimension to my life."

ENDIF
Faculty Loan Policies in Michigan, Ohio, and Indiana

A survey was made to determine the circulation policies for faculty in the college and university libraries of Indiana, Michigan, and Ohio; to determine whether or not they seemed to be satisfactory; and to elicit suggestions on how faculty loan policies could be improved. The respondents were divided into two statistical groups according to size of enrollment—larger institutions (over 1,500) and smaller institutions (under 1,500). The survey revealed that increasing enrollments and expanding research functions on campuses are necessitating more efficient control of library materials which historically has been hampered by lax faculty circulation policies.

Because of the dearth of professional literature concerning the many ramifications of academic library circulation policies, a study of faculty loan policies was initiated. The purpose of this survey was to determine what circulation policies existed for faculty in the college and university libraries of Indiana, Michigan, and Ohio; to determine whether the systems used seemed to be satisfactory; and to elicit suggestions on how they could be improved. The survey was based on all institutions of higher learning in the three states which appeared in the Education Directory 1965-66—Higher Education, and were listed as having North Central Association of Colleges and Secondary Schools accreditation. The total number of questionnaires sent was 128. Of these, 105 were returned, which constituted 82 per cent of the total survey. Two returns were not complete enough to tabulate, so the following tables are based on a total of 103 questionnaires. Fifty-six institutions requested copies of the results of the survey, indicating rather widespread interest in the problem of faculty circulation policies.

The questionnaire consisted entirely of open-ended questions which were designed to elicit answers based on individual opinions—there were no "right" or "wrong" answers. The questionnaire was similar in structure to one used in a 1963 nationwide random survey by Bobinski.

The respondents have been divided for statistical tabulation according to size of enrollment, which provided the most accessible criterion for common problems. The larger institutions were considered to be the fifty-nine schools with enrollments over one thousand five hundred. The smaller institutions were the forty-four schools with enrollments under one thousand five hundred. Also included in this group were all junior

*Footnotes are listed at the end of this article.
colleges, regardless of size, because their lack of research facilities and less comprehensive academic programs tended to make their problems similar to those of the smaller institutions.

**Statistical Results**

1. Is there a written policy statement in your library concerning faculty loan regulation?

**Table 1**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>LI</td>
<td>49% (29)</td>
</tr>
<tr>
<td>SI</td>
<td>27% (12)</td>
</tr>
<tr>
<td>Total</td>
<td>40% (41)</td>
</tr>
</tbody>
</table>

It should be pointed out that the majority of written policy statements were included in faculty manuals or university handbooks, rather than in formal, administrative policy statements of the library. Also, the large number of negative answers is quite surprising, since this apparently indicates that this important public relations operation is handled by word-of-mouth or on a common-understanding basis.

2. How long do books circulate to faculty members?

Although a majority (55 per cent) of the librarians indicated some type of specified loan period for faculty members, in many cases these loan periods were indefinite because of the lack of enforcement of faculty regulations. Therefore it appears that more than 65 per cent of the libraries have little or no control over the length of time that a faculty member may have library material in his possession.

3. What is the faculty loan policy and period for the following?

(This question concerned various types of special materials: e.g., periodical, reference, reserve, and microprint materials.) The results of this question varied greatly and tended to indicate that special materials were handled on an individualized basis, according to the needs of the particular institution.

4. Are faculty members subject to an overdue fine?

**Table 4**

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>LI</td>
<td>5% (3)</td>
</tr>
<tr>
<td>SI</td>
<td>9% (4)</td>
</tr>
<tr>
<td>Total</td>
<td>7% (7)</td>
</tr>
</tbody>
</table>

Concerning the imposition of fines upon faculty members, there seems to be almost unanimous agreement. Even the few libraries which did have fines for faculty members stated that these fines were of a theoretical nature, on special materials only, or seldom enforced. Many librarians, however, did indicate a desire to initiate a strict fine system for faculty violations of what the librarians viewed as liberal loan policies.

5. After what period of time is material recalled if wanted by another faculty member?

**Table 2**

<table>
<thead>
<tr>
<th></th>
<th>Indefinite</th>
<th>Academic Period</th>
<th>Annual</th>
<th>Less than Acad. Per.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LI</td>
<td>36% (21)</td>
<td>32% (19)</td>
<td>27% (16)</td>
<td>5% (3)</td>
</tr>
<tr>
<td>SI</td>
<td>37% (25)</td>
<td>27% (13)</td>
<td>7% (3)</td>
<td>9% (4)</td>
</tr>
<tr>
<td>Total</td>
<td>45% (46)</td>
<td>30% (31)</td>
<td>18% (19)</td>
<td>7% (7)</td>
</tr>
</tbody>
</table>
TABLE 5a
RECALL TIME FOR MATERIAL WANTED BY FACULTY

<table>
<thead>
<tr>
<th></th>
<th>2-4 weeks</th>
<th>Immediate</th>
<th>Not recalled</th>
<th>No reply</th>
</tr>
</thead>
<tbody>
<tr>
<td>LI</td>
<td>54% (32)</td>
<td>36% (21)</td>
<td>8% (5)</td>
<td>2% (1)</td>
</tr>
<tr>
<td>SI</td>
<td>41% (19)</td>
<td>39% (19)</td>
<td>20% (9)</td>
<td>1% (1)</td>
</tr>
<tr>
<td>Total</td>
<td>48% (50)</td>
<td>37% (38)</td>
<td>14% (14)</td>
<td>1% (1)</td>
</tr>
</tbody>
</table>

If wanted by a student?

TABLE 5b
RECALL TIME FOR MATERIAL WANTED BY STUDENTS

<table>
<thead>
<tr>
<th></th>
<th>2-4 weeks</th>
<th>Immediate</th>
<th>Not recalled</th>
<th>No reply</th>
</tr>
</thead>
<tbody>
<tr>
<td>LI</td>
<td>53% (31)</td>
<td>32% (19)</td>
<td>13% (8)</td>
<td>2% (1)</td>
</tr>
<tr>
<td>SI</td>
<td>39% (17)</td>
<td>29% (15)</td>
<td>32% (14)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47% (48)</td>
<td>31% (32)</td>
<td>22% (21)</td>
<td>1% (1)</td>
</tr>
</tbody>
</table>

Eighty-one out of the 102 who replied stated that no differentiation was made in recalling materials for faculty or for students. In studying the responses, however, one can see that the existing recall services definitely favor the faculty. For instance, in the institutions which reported a policy of not recalling material 14 per cent would not do so for faculty while 22 per cent would not perform this service for students. In the smaller institutions such comments as “tough luck for the students” exemplified a prevalent attitude among the librarians. This can also be verified by the fact that 32 per cent of the smaller institutions did not have a material-recall service for the students. This factor of no recall coupled with the disparity of loan periods for faculty and students certainly indicates the element of student discrimination in existing circulation policies. Finally, a contributing factor in the frustration caused by the existing recall procedures is the failure of the librarians to communicate effectively to the students the nature of their recall privileges.

6. What percentage of recalls do you estimate were returned within a reasonable time?

Even though the concept of “a reasonable time” was based on a subjective decision of each respondent, the majority of librarians indicated a high degree of faculty cooperation in the return of recalled materials. The larger institutions seemed to have greater problems in this area of recall, and those with the greatest problems were definitely the large universities, as indicated by the fact that in the case of the institutions reporting less than 75 per cent cooperation, all six of the “larger institutions” were in the large university category.

TABLE 6
PERCENTAGE OF RECALLS RETURNED WITHIN A REASONABLE TIME

<table>
<thead>
<tr>
<th></th>
<th>90-100%</th>
<th>75-89%</th>
<th>Less than 75%</th>
<th>No reply</th>
</tr>
</thead>
<tbody>
<tr>
<td>LI</td>
<td>60% (35)</td>
<td>25% (15)</td>
<td>10% (6)</td>
<td>5% (3)</td>
</tr>
<tr>
<td>SI</td>
<td>68% (30)</td>
<td>16% (7)</td>
<td>11% (5)</td>
<td>5% (2)</td>
</tr>
<tr>
<td>Total</td>
<td>63% (65)</td>
<td>21% (22)</td>
<td>11% (11)</td>
<td>5% (5)</td>
</tr>
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</table>
7. What procedure is used to retrieve library material not returned by faculty at the end of the specified loan period? (Initial contact)

After material has been recalled and not returned? (Second contact)

Written notices predominated (70 per cent) as the method of initial notification of non-returned material. Follow-up in the smaller libraries was usually done on a personal basis—either by phone or face-to-face. Although personal contact, including face-to-face confrontations and phone calls, was also used extensively (50 per cent) by the larger institutions for second contact, there was a trend (30 per cent) toward more disciplinary action among both groups. Some of the more stringent actions included the withholding of pay checks, and notification of department chairmen concerning the delinquency of the faculty members with library materials. A unique approach to this problem was the inclusion of accounts of faculty irresponsibility with library materials in the permanent records of the individual. This problem of material retrieval has by no means been effectively solved, however, as indicated by one librarian who expressed his procedures as "We cry a lot," which seemed to express the sentiment of others.

8. Is there dissent or dissatisfaction voiced by the student body concerning your present faculty loan regulations?

Table 8

<table>
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<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>No reply</th>
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<td>SI</td>
<td>7% (3)</td>
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<td>2% (1)</td>
</tr>
<tr>
<td>Total</td>
<td>15% (15)</td>
<td>84% (87)</td>
<td>1% (1)</td>
</tr>
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</table>

Student dissent was significantly greater in the larger institutions (21 per cent as compared with 7 per cent for the smaller schools), especially in the universities where there were vocal graduate students. Complaints of discrimination in lending practices and faculty abuse of library privileges were often cited by the students. One institution in particular was in the midst of a major student protest against faculty abuses. These protests were expressed by means of student newspaper exposés and vehement editorials.

9. Are there complaints on the part of faculty members concerning loan regulations imposed upon them?
TABLE 9

FACULTY COMPLAINTS CONCERNING
LOAN REGULATIONS

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<td>2% (1)</td>
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<tr>
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<td>19% (20)</td>
<td>78% (80)</td>
<td>3% (3)</td>
</tr>
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</table>

A greater percentage of the faculty of the larger schools (24 per cent) than the smaller schools (14 per cent) tended toward open criticism of their colleagues' abuse of library privileges and stated a desire for more effective faculty circulation regulations. On the other hand, some faculty members were personally affronted by the laborious task of checking library materials in their possession for annual inventories.

10. What changes, if any, have been made in your faculty circulation policies during the last few years?

TABLE 10

CHANGES IN FACULTY CIRCULATION POLICIES

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</tr>
<tr>
<td>Total</td>
<td>40% (41)</td>
<td>60% (62)</td>
</tr>
</tbody>
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The comments included with this question indicated that there have been recent attempts to revise faculty circulation policies. A much greater proportion of the changes in the larger institutions (49 per cent versus 27 per cent) seems to indicate a more pressing need for coping with increasing enrollments and growing demands upon all library facilities. The trend of these changes is definitely toward greater control of materials. This trend has manifested itself in limited loan periods, periodic library inventories, exclusion of faculty families from extended privileges, and stricter enforcement of library regulations concerned with faculty loan privileges. Only five of the forty-one librarians (12 per cent) who reported changes in faculty circulation policies stated that the change was toward liberalization of regulations.

11. Are you, as librarian, satisfied with your present policies concerning faculty loans?

TABLE 11

LIBRARIANS SATISFIED WITH PRESENT FACULTY LOAN POLICIES

<table>
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<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
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<td>61% (36)</td>
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<tr>
<td>Total</td>
<td>72% (74)</td>
<td>28% (29)</td>
</tr>
</tbody>
</table>

Librarians in smaller institutions seem to have significantly fewer problems with faculty circulation than those in the larger schools. Most were satisfied with their present circumstances concerning faculty loans (86 per cent) and attributed this to the small number of faculty members with whom they had frequent personal contact. Most of the problems which were mentioned at smaller institutions concerned the abuse of library privileges by a small minority within the faculty. Within the larger institutions, however, there was a greater expression of dissatisfaction by the librarians. This dissatisfaction was strongly expressed by one librarian at a large university:

No, I am not satisfied. No distinction should be made between faculty and students. The same loan privileges should be accorded to all persons eligible to use the academic library. The insistence of the professoriate that they are a race apart is a relic of the Middle Ages. The sequestration of library materials for long periods of time in faculty offices or homes is intolerable. Furthermore, such permissiveness works against them quite as much as it works against students. Academic libraries must be able to control their collections, for only with control can they satisfy the entire university community.

Although the preceding statement is
more verbose than the average response, in reviewing the results of the survey it is apparent that the population explosion on college campuses and the expanding research functions of the college and university library are necessitating more efficient control of materials in order to meet the demands of scholarship by all library users. Faculty censure by administrative action in cases of habitual abuse of library privileges, stricter overdue and recall policies, establishment of unilateral circulation policies for all members of the academic community, and the desire for other forms of stricter control of library materials were cited as means of increasing library service for all academic library patrons.

There seems to be a general lack of control in the existing faculty circulation policies, as shown by ineffective recall procedures and unlimited loan periods for faculty. There is a growing awareness by librarians that the availability of library materials must be assured for every member of the academic community. From the various responses of the librarians it seems that the smaller libraries have not yet felt the research-oriented taxing of library resources, and thus the librarians of smaller institutions limit their criticism of circulation problems to a minority abuse by faculty, rather than to the entire system of faculty privilege. On the other hand, many large university libraries are facing varying stages of crisis in their attempts to maintain good public relations with all segments of the academic population, a result of the unrealistic concept of non-controlled circulation of library materials by faculty members. Currently there is no universal circulation policy for all the academic libraries of this country. Therefore, constant awareness of the changing needs of the academic community must dictate the library circulation policies for each institution, and every policy must assure the availability of the library's resources to all patrons.

NOTES

2 A second alternative would have been to divide the respondents by the size of their library holdings. However, this information was not available at the time that the results of this survey were tabulated.
3 Although the enrollment of 1,500 was an arbitrary choice as the dividing point between the two size groups, the writer defends its validity on the basis that it presents a representative picture of the similarity of distribution between the sample (103 institutions) and the universe (128 institutions).
4 Results are in terms of percentage for each category. Number in parentheses represents total responses for each cell. LI = Larger Institutions. SI = Smaller Institutions.
5 There is no Table III, due to non-tabulation of question 3.
WILLIAM E. McGRATH, RALPH C. HUNTSINGER, AND GARY R. BARBER

An Allocation Formula Derived from a Factor Analysis of Academic Departments

The authors derive a book fund distribution formula from a factor analysis of twenty-two variables which measure and quantify academic departments. The analysis generates a 22 x 22 matrix of correlations. A few of the significant correlations are discussed; e.g., those between books published and books circulated (high correlation) and circulation-by-subject and circulation-by-person (low correlation). The factor analysis sorts out the complex relationships between the twenty-two variables and reduces them to three main factors—two of which seem to describe materials used and users. The third may describe needs. The three factors are the chief elements in the formula. Each factor can be represented by any one or more of the variables in that factor.

PART I

IDENTIFICATION OF VARIABLES AND COLLECTION OF DATA

College and university libraries have many departments, institutes, and divisions competing for available library funds. Every librarian therefore has had to decide whether to: (1) emphasize and build one or more departments or divisions to the neglect of others; (2) assert no control and let a library collection develop where it may; or (3) emphasize all areas, fairly and equitably. Too often the first two systems have prevailed. The third has been tried, but few can agree on how to act “fairly and equitably.” An objective, scientific technique for shaping the library’s collection has never been developed. Ideally, a simple mathematical formula with as few variables as possible would be most desirable. The formula would be used to allocate the library’s book budget to academic departments. Nearly every librarian allocates in one way or another. Even when he does not formally allocate with specific dollar amounts, he may subjectively allocate according to his own biases. If his bias is for chemical engineering, close study of the collection may reveal an unusually good chemical engineering section.

A good formula has been sought for
years. Formulas cited in the literature are generally unsatisfactory. Most have been arbitrary, or based on what had been done in the past, or have not accounted for real and current needs. A few librarians, Ramer, for example, have used many of the important elements in a formula but apparently without statistical justification. Richards has mentioned the “continuing interest among the four out of five librarians who practice allocation today.”

A good formula would help guarantee that available book funds will be distributed efficiently and equitably, that departments will be properly funded, and that the book collection will appropriately reflect the curriculum. In an effort to attain such a formula, the present study identified the forty-three variables which are defined and listed below in their naturally occurring groups. Some have been taken from Lyle and other authors. Some are new. Some are simply derivatives of others—for example, G-1 is total inter-library loans while G-2 through G-9 are aspects of total inter-library loans. Each variable is a definition of “department.”

McGrath explains how a department can be defined as if it were a subject. Variables A-1 through A-3, B-1, F-8 and G-10 through G-12 define departments as subjects. All other variables define departments as organizations; i.e., the number of people, credit hours, and so on.

4 Lyle, op. cit.

### TABLE 1

<table>
<thead>
<tr>
<th>VARIABLES TO BE CONSIDERED IN A BOOK ALLOCATION FORMULA</th>
</tr>
</thead>
</table>

**A. Books published.**

The total number of books published world-wide would be a desirable variable, but would be difficult to measure. For this project we tallied only those published in the U.S. The totals were derived from the several recent cumulations of the American Book Publishing Record.

1. Books published, total number.
2. Books published, total cost.

**B. Existing collection.**

The existing collection can be counted item by item, but a linear measurement of the shelflist (100 books per inch of cards) is quicker.

The number of dollars allocated or spent, or the number of books bought in the immediate past should not be used in a formula because current conditions will be different. This is especially true if past buying and allocating was subjective. But it might be interesting to see how they correlate with other variables.

2. Last year’s departmental allocations, or expenditures.
3. Number of books purchased last year.

**C. Faculty and faculty load.**

The number of faculty in a department is a legitimate measure of its need. More difficult to justify, as a variable in a formula, is the length of time a person has been on the faculty. It is fair to assume that the longer a person has been around, the more likely it is that his basic
book needs have been filled, and that his years on the staff should rightly be scored against his department.

“Contact hours” are the number of class hours and laboratory hours a teacher actually spends with his students. “Equated hours” are a means of comparing contact hours to a norm, and are thus derivatives of contact hours. C-3, C-5, and C-7 are derivatives of C-4, C-6, and C-8, which in turn are total faculty hours per department. The assumption is that the greater the teaching load, the greater the book need.

“Faculty member” should include professors (full, associate, and assistant), instructors and, if desired, teaching assistants.

1. Number of faculty members in each department, instructors through full professors.
2. Faculty tenure (total number of years members have been on faculty).
3. Credit hours being taught—average per faculty member.
4. Credit hours being taught—totals. (Note under D-4, below.)
5. Contact hours—average per faculty member.
6. Contact hours—totals.
7. Equated hours—average per faculty member.
8. Equated hours—totals.

D. Credit hours.

One opinion is that no matter how many faculty members are in a department, or what their teaching loads are, what really counts is the number of courses offered and that the library is obliged to back up the courses with reading material whether or not the courses are actually taught in any given semester or year. Since a one-credit course cannot be equated to a two, three, or four-credit course, the best way to consider them is according to the total number of credits per department.

Credits can be taken from the college catalog, and from changes on file in the Registrar’s or Admissions Office. As shown, credits can be counted several ways. Credits for courses taught in two or more semesters per year can be counted more than once or only once, and credits “to be announced” (TBA’s) counted as three each, or otherwise, as desired.

1. Credit hours, undergraduate, offered or listed.
2. Credit hours, graduate, offered or listed.
3. Credit hours, graduate and undergraduate, offered or listed.
4. Credit hours of courses actually being taught. (All sections counted. Counting TBA’s as 3 each. This is the same as C-4, above, except that C-4 does not include TBA’s.)
5. Credit hours of courses actually being taught. (Not more than one section counted for each course.)

E. Enrollment.

It is wise to use official figures whenever possible. Registrar’s offices tally enrollment in several ways. Most use an official definition of “full-time equivalent” student. Enrollment here means “majors.” Therefore, total enrollment which includes general students, specials, and non-declared majors cannot be used. More meaningful than “majors” perhaps is the number of students taking courses in “major” departments. This variable is actually tabulated in C-5 and C-6 above.

1. Enrollment, graduate and un-
dergraduate together.
2. Enrollment, graduate only.
3. Enrollment, undergraduate only.

F. Circulation.
Circulation, to be considered, must somehow be made relevant to departments. Two methods for doing so are (1) circulated books tabulated according to the borrower's departmental affiliation, as in F-5 through F-7, and (2) books circulated according to their relevance to a department's subject, as in F-8. Another paper by McGrath on this subject explains how circulation according to department/subject can be tabulated.

Circulation from department libraries might be a problem and should be counted if possible.

1. Circulation, faculty and students—books and periodicals, plus inter-library loans. (F-2 plus G-1).
2. Circulation, faculty and students—books and periodicals. (F-3 plus F-5).
3. Circulation, graduate and undergraduate—books and periodicals. (F-4 plus F-6).
5. Circulation, faculty—books and periodicals.
7. Circulation, faculty and graduate—books only, plus inter-library loans (periodicals and books). (F-8 plus G-1).
8. Cumulative circulation count by department/subject.

G. Inter-library loans.
Inter-library loans, like circulation, can also be counted according to department affiliation (G-1 through G-9) or according to subject (G-10 through G-12).

1. Inter-library loans, faculty and students—periodicals and books.
2. Inter-library loans, students—periodicals and books.
3. Inter-library loans, faculty—periodicals and books.
4. Inter-library loans, faculty and students—journals.
5. Inter-library loans, faculty and students—books.
6. Inter-library loans, students—journals.
7. Inter-library loans, students—books.
8. Inter-library loans, faculty—journals.
9. Inter-library loans, faculty—books.
10. Inter-library loans by subject, periodicals and books together.
11. Inter-library loans by subject, periodicals.
12. Inter-library loans by subject, books.

H. References in theses.
The assumption is that references, because they are cited, indicate their true value. Many books are circulated for graduate research which are never cited.

References in theses can include books and periodicals. In this study both were included. The total number of original references (excluding ibids., op. cit., and the like) per department were counted.

1. References in graduate theses (one year only).
2. References in graduate theses (five-year cumulation).

I. Other variables.
Other variables which might be in-
cluded are reserve book use; citations in faculty publications; new periodicals published by subject; the total holdings in "complete" libraries, such as the Library of Congress, to be used as a comparison; books consulted in the library and left on tables.

The immediate objective of this study was to carry out a statistical analysis of the variables and to discover their relationships and relevance to each other and to the number and cost of books published annually. These relationships are interesting in themselves. The ultimate objective was to derive a simple formula which would describe the departmental book needs in relationship to books available and books used. In seeking this ultimate objective, the analysis reduces the number of variables, reduces the data to their simplest form, determines the best predictors, and, ideally, predicts the needs of academic departments in relation to each other.

PART II
ANALYSIS OF VARIABLES AND SPECIAL RELATIONSHIPS

In this study, multiple regression was first used, but it led to no special insights. A simple multiple correlation and the more sophisticated factor analysis, however, led to several insights.

Multiple Correlations
All forty-three variables listed in Part I were fed into the multiple correlation computer program, and a 43 x 43 correlation matrix was produced. This was done separately for each of three years. The three years correlated very highly with each other. Since data for the first year were somewhat sketchy, only the last two years were used in the final study; they were added together to ensure greater reliability.

Study of the inter-correlations permitted the elimination of twenty-one of the forty-three variables from further study. Some of the twenty-one were dependent derivatives of others, which usually guaranteed a very high correlation. For example, some variables, such as averages of cost of books, credit hours, and contact hours, were all derivatives or correlatives of their totals. Others simply had insufficient or faulty data. For example, the detailed breakdown of circulation and inter-library loans by faculty, students, books, or periodicals in various combinations were unreliable because of the small numbers involved. A larger body of data on these variables would certainly justify a close study of them.

Table 2 gives a reduced matrix of correlations, using the twenty-two remaining variables. The correlations are on the Pearson scale. That is, a perfect correlation has a coefficient of 1.0; no correlation has a coefficient of 0.0; and a negative, or inverse, perfect correlation has a coefficient of -1.0.

The table shows a wealth of high correlations. Arbitrarily, anything above .70 is regarded as high. All coefficients, high or low, have a meaning of some kind. The variables with high correlations are useful in that one can be used to predict another. It is also useful to know that two with low correlations have little to do with each other.

Although the formula is not derived initially from these correlations, they do give considerable insight into the relationships of the variables to each other and can help to clarify their role in the factor analysis.

Consider the variables Number and total cost of books published (A-1 and A-2). These two have a very high correlation coefficient (.99), telling us that either number or cost gives us nearly identical percentages. This is enormously useful. If the percentage of books published is known, the percentage of cost is also known and vice versa—within a degree of accuracy, of course.
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<td>.57</td>
<td>.44</td>
</tr>
<tr>
<td>H-2</td>
<td>-.18</td>
<td>-.14</td>
<td>-.11</td>
<td>.04</td>
<td>.05</td>
<td>.15</td>
<td>.11</td>
<td>.32</td>
<td>.43</td>
<td>.43</td>
<td></td>
</tr>
</tbody>
</table>

A-1 and A-2 also correlate highly with the Existing collection (B-1) and Circulation by subject (F-8). Their high coefficients (from .93 to .96) supports the ideas that (1) the subject output patterns of U.S. publishers does indeed reflect academic interest and has not changed much in recent generations, and that (2) book use by department-as-subject conforms closely to what is available.

The low correlation (.37) between Circulation by person (F-2) and Circulation by subject (F-8) should dispel once and for all the myth that a person's department has much to do with the
subject of books he takes out. If the myth is true, then we must suspect that our classification systems (LC or DDC) fail to classify books properly, or that we should instead be classifying persons by subject. More likely, an individual's specific interest conforms loosely, if at all, to the interest of the general discipline he is teaching or studying. Librarians may be good examples of this. How many of the books that librarians read last year were actually books on library science?

Number of faculty members (C-1) correlates fairly (.76) with Circulation by subject (F-8), but not so fairly (.58) with Circulation by person (F-2). Since F-2 includes both faculty and students, it can be seen that the faculty does have some influence on the students—or is it vice versa?

Inter-library loans do not seem to reflect quite the same picture. There is a fair correlation (.70) between I.L.L.’s by person (G-1) and I.L.L.’s by subject (G-10). This relationship needs further study.

Credit hours being taught—totals (C-4) is an important variable, as shall be seen. High correlations between Contact hours (C-6) and Equated hours (C-8) have little meaning for us since those variables are functions of C-4. High correlations are also expected with other aspects of credit hours (D-1, D-3, D-4, and D-5). The importance of C-4 is its high correlation (.85) with Circulation by subject (F-8). Apparently, courses taken each semester do have a strong effect on the subject of the books taken.

Undergraduate variables (D-1, E-3) correlate better with Circulation by person or major (F-2) than do the graduate variables (D-2 and E-2). This is to be expected since graduate students account for a small portion of total enrollment and total circulation.

Enrollment by declared major (E-1, E-2, E-3) correlates poorly with nearly everything except (1) Credit hours offered or listed (D-1, D-2, D-3, coefficients only fair, from .6 to .7), and (2) Circulation by person (F-2, coefficient .85 or .83).

The latter correlation is a clue to the greater relationships as revealed in the factor analysis. All the variables defined by person seem to be grouping together as do all those defined by subject—with little, if any, overlap between the two. Note that Enrollment (E-1) correlates well (.85) with Circulation by borrower (F-2), but poorly (−.06) with Circulation by subject (F-8).

Except for a modest correlation (about .5) with Graduate credit hours and enrollment (D-2 and E-2), Citations in theses (H-1 and H-2) have no high correlations with any other variables. The relationship seems obvious, since citations in theses are produced only by graduate students. The fact that they do not otherwise correlate with much of anything is significant. They seem to be independent variables. And therein is another clue to their significance which will be further revealed in the factor analysis.

General Significance

Coefficients need not be high to be significant, depending on what use we make of them. Two variables with a high coefficient means they both tell us the same thing, and we can discard one of them. Two with low coefficients indicate that one has nothing to do with the other, that one is not dependent upon the other, and that separately both are important. We must therefore account for both. In constructing a formula, we may have to use both.

The matrix shows many low coefficients. There are only a few negative, or inverse correlations, and these are all very low. None larger than −.27 shows up (between A-1 and D-2). We attach no special significance to this.
Many other combinations in the matrix could be discussed. Registrars and deans of students would be interested in the relationships between enrollment, credit hours, contact hours, and the like. Here we are interested mainly in the effect of these variables on use of the library, how they describe needs of departments, and how their inter-relationships can be used in a formula.

Without question these relationships will vary from institution to institution. Although some of them may be typical, we make no claim here that the findings are universal. It would be highly interesting and desirable to know which relationships are universal. This suggests the need for an inter-institutional cooperative study.

Some of the high correlations are not above suspicion. For example, the raw data for the Department of Languages and Social Sciences in variables A-1, A-2, B-1, and F-8 accounts for a very large part of the total, tending to overwhelm other departments and to promote high correlations among those variables.

Some individuals believe it is unfair to compare the humanities to engineering, or even the pure sciences to engineering. Others feel that experiments such as this are an excellent way to measure and compare actual differences. Whatever the plan, the investigator should consider the different relationships likely to result.

**Factor Analysis**

Our formula is constructed from the results of a factor analysis, a device originally developed by psychologists for the study of personality. Obviously it can be used to study academic departments which, we might say, have corporate personalities. *Factor analysis* sorts out the complex relationships in the multiple correlations. We assume that if many variables can describe a person or a corporate body and that if some of these variables have something in common, the commonality can be discovered and precisely measured. When several variables overlap or group together (we have already seen this happening in the correlation matrix), these groups are called “factors.” The analysis measures, on the Pearson scale, the precise amount of overlap.

The analysis will reveal as many factors as necessary to account for the desired amount of total variance. If twenty-two variables are used, the largest number of factors would be twenty-two and would account for 100 per cent of the variance. The object of the analysis, however, is to see if the number of factors can be reduced, with an acceptable amount of unaccounted variance. The investigator establishes the amount of variance he is willing to forego—say 10 per cent. The analysis will then produce the number of factors to meet this condition, say four. If we wanted to deal with only three factors, but this meant increasing the variance to, say, 40 per cent, we would prefer staying with four. Likewise, if decreasing the variance to 8 per cent meant an increase of five or ten more factors, again we would stay with four at 10 per cent. Figure 1 shows how, in a successful analysis, the variance levels off quickly after the first few factors.

In our analysis the factors were reduced to three with a total unaccounted variance of .15 and four with an unaccounted variance of .10. We decided to use three factors, as shown in Table 3. In each factor, each variable, to the extent indicated by the coefficient on the right, represents a measurement of the same thing. Any one variable can repre-
Factor Analysis of Academic Departments

**Table 3**

The Factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Factor I Coefficient</th>
<th>Factor II Coefficient</th>
<th>Factor III Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-1</td>
<td>.90</td>
<td>D-2</td>
<td>.77</td>
</tr>
<tr>
<td>A-2</td>
<td>.92</td>
<td>D-3</td>
<td>.63</td>
</tr>
<tr>
<td>B-1</td>
<td>.92</td>
<td>E-1</td>
<td>.95</td>
</tr>
<tr>
<td>C-1</td>
<td>.87</td>
<td>E-2</td>
<td>.69</td>
</tr>
<tr>
<td>C-2</td>
<td>.70</td>
<td>E-3</td>
<td>.94</td>
</tr>
<tr>
<td>C-4</td>
<td>.93</td>
<td>F-2</td>
<td>.81</td>
</tr>
<tr>
<td>C-6</td>
<td>.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C-8</td>
<td>.89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-1</td>
<td>.87</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-4</td>
<td>.93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D-5</td>
<td>.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-8</td>
<td>.96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G-10</td>
<td>.79</td>
<td></td>
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</tr>
</tbody>
</table>

**Fig. 1.**—Hypothetical range of factors and variants.
sent that factor. The higher the coefficient, the better the representation. For example, in Factor II, E-1 is the best indicator.

Users of factor analysis play a little game called Naming the Factors. If factor analysis is truly a legitimate device and there are indeed factors, then, according to theory, they can be identified. More often than not, the players lose. They cannot identify the factors and must be content with simply numbering them. From the start of the project, before the analysis, it seems obvious to us (we hypothesized, you might say) that only three factors need describe departmental book requirements—materials available or at hand, materials used, and material not at hand and needed. When the analysis gave us three factors at an acceptable level of variance, we were delighted because, surely, this bore out our hypothesis. But, try as we might, we could not make our three preselected names fit the three derived factors. Instead, it appears that the three derived factors should more appropriately be named I. Subject of Books and Serials Used or Available, II. The Users, and III. Books and Serials Cited by Graduate Students in Theses. All or most variables which somehow describe the subject of material used or available group together under Factor I. All or most variables which describe the users group together under Factor II. Even the names are not precise, and Factor III is something of a maverick. Until we have taken a closer look at these and other variables, we should be wiser to avoid names.

Our three “hypothesized” factors may still be valid; but if they are to have meaning, we must analyze other variables. Surely the factor, material needed, is valid; but none of our variables, with the possible exception of interlibrary loans, seem to measure it.

If nothing else, this experience tells us to test our assumptions and formulate our hypotheses carefully. If we are to be objective, we cannot let our wishes determine our conclusions.

Nevertheless, on the basis of data available and first-time statistical analysis of that data, we are justified in using what we have to derive a formula.

PART III

THE FORMULA, STATISTICAL AND MATHEMATICAL BASIS

Since the factor analysis tells us that any one variable in its factor measures the same thing, to the extent indicated by its coefficient, we can use any one variable to represent the entire factor. This enormously simplifies the construction of a formula. Instead of using twenty-two variables in the formula, we use only three. In Factor I we have a wide choice of thirteen; in Factor II, six; and in Factor III, three.

As we said earlier, many of these variables have in one way or another been used by many libraries in arbitrary formulas. Each served its purpose after a fashion, but none of the libraries had any way of knowing whether the factors used were independent, non-repetitive, or even significant. We can now construct a formula which is more likely to consider the most significant and independent factors.

The actual formula used makes little difference as long as each factor is included. For simplicity, only one variable from each factor may be chosen, but two or more from each could be averaged. The criteria for selection should be (1) a high coefficient, (2) a substantial body of data, (3) easily collected data, and (4) resistance to deliberate local manipulation. A linear or geometric formula is a matter of choice. We chose the linear—i.e., a simple additive formula.
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For example, if F-8, E-1, and H-2 are chosen in Factors I, II, and III, we would add together, for each department, the fractional values or percentages for each of these variables. The allotment for one department is a fraction of the total amount to be divided. Because we have three factors, the fraction of the total is one-third the sum of the three fractions.

Basically, this is our formula:

\[
\text{Factor I for that department} = \text{fraction of total (1)}
\]

\[
\text{Factor II for that department} = \text{fraction of total (2)}
\]

\[
\text{Factor III for that department} = \text{fraction of total (3)}
\]

If the factors are all equally important, then the formula is fine as it stands. But if they are not, we must discover, somehow, which is more important, or arbitrarily decide which we want to be more important, and then weight them accordingly. Since discovery of an absolute weight is not within the mathematical capability of this technique, we must decide ourselves which is more important and assign the weight arbitrarily. We can assign weights by multiplying each of the three fractions by any number, as long as the three numbers add up to 1. After weighting each factor, for each department, the fraction of the total amount to be divided is the following sum:

\[
\begin{align*}
\left( \frac{\text{no. of books taken out for that department}}{\text{total of all books taken out in all departments}} \right) & \times \text{weight of Factor I} \\
\left( \frac{\text{enrollment in that department}}{\text{total enrollment in all departments}} \right) & \times \text{weight of Factor II} \\
\left( \frac{\text{citations in theses from that department}}{\text{total citations in theses from all departments}} \right) & \times \text{weight of Factor III}
\end{align*}
\]

Remember that

\[
\left( \frac{\text{weight of Factor I}}{1} \right) + \left( \frac{\text{weight of Factor II}}{1} \right) + \left( \frac{\text{weight of Factor III}}{1} \right) = 1
\]

must equal 1. If each of the three weights are .33, we have given the three factors equal weighting. We can give no additional advice on how much to weight each factor; this must be a judgment based on experience and the librarian's own knowledge of his own library. Mathematically, however, the factor analysis will provide a percentage figure for the amount of variance accounted for by each factor. One could use such figures, remembering that they represent an inherent weighting which may have nothing to do with the importance the librarian attributes to the factors.
Our formula is nearly complete. It lacks one important feature. In order to guarantee each department equality before the laws of the library, we might want to give each an equal amount to start. The amount could be nothing or it could be one hundred dollars or five hundred. The amount given, like the weighting, is arbitrary; and this part of the formula is not derived from the analysis. If we do allot an equal minimum to each department, the amount is

\[ \frac{\text{amount to be divided equally}}{\text{number of departments}} \]  

When we add (8) above to (4), (5), and (6), we have the final complete formula. The formula is the fraction to be multiplied by the total dollars to be divided. For those who want to read the formula in mathematical symbols, we have

\[ A_D = \frac{E}{N} + \left( \frac{W_1 F_{1D} + W_2 F_{2D} + \ldots}{W_1 F_{1D} + W_2 F_{2D} + \ldots} \right) \cdot (T - E) \]  

Where

\[ A_D = \text{Allotment for individual department (D)} \]
\[ E = \text{Amount to be divided equally} \]
\[ N = \text{Number of departments} \]
\[ F = \text{Fraction of the variable (Factor) contributed by department (D)} \]
\[ T = \text{Total amount to be divided} \]
\[ W = \text{Arbitrary weighting value for each factor} \]
\[ \text{Sum of } F_n = 1.00 \]

Bear in mind that we do not necessarily recommend use of the three variables mentioned, nor even that only three be used. Any three, or any other number can be used. The choice is entirely up to the librarian or his committee, and the choice is a function of his or their assessment of the data, its reliability, and the validity of the method.

As with any statistical device, its use here is to assist in a management decision. The statistics themselves cannot make this decision.
BOOK REVIEWS


This brief volume is a contribution to library administration. In their more sober moments most library administrators admit that their sophistication with the technical aspects of management probably does not approach that of the man of the house in the days of "cottage industry." To improve somewhat on this situation, the administration of the library at the University of Michigan has a program labelled "Operations Research," staffed by graduate engineers as supervisors on a part-time basis, using the part-time help of students in the university's engineering school.

The program deliberately employs the more conventional tools of industrial engineering, such as work measurement and sampling, methods improvement, and breakdown cost analysis. The desire is to profit from the results of the studies, and the proposed engineering applications, if accepted, are always implemented. Furthermore, they are considered successful only if specific problems are alleviated or, best of all, solved.

This has meant that the library department heads are fully involved in the application of the "improvements" suggested by engineering techniques, from the first steps of participating in data collection, on into creation, and then to implementation. Thus communication inadequacy is minimized and library staff involvement maximized.

Twelve case studies are given in detail ranging from a short five pages describing one project up to one case study totalling twenty-nine pages. Calculations in very elementary mathematics, charts, tables, and diagrams abound. The clarity of presentation which only comes when a number of writers and users have gone over a report again and again is everywhere evident and in most cases of marked value. No knowledge of advanced statistical techniques or linear programming is required to understand the results.

The contents relate significantly to circulation work in libraries—studies of book renewals, overdues, chargeout periods, standardized circulation arrangements in divisional (or departmental) libraries, book reshelving, exterior book return systems, exit controls. Case studies of these make up the specific content of five of the chapters. Accounting and cost analysis for periodical replacement, photocopying, and Xerox expense are detailed in four studies. Inventory, book re-labeling, and seating deployment problems are investigated in other chapters.

In the introduction the editor mentions one very costly library area which is not investigated: "This collection of case studies contains nothing in the area of technical services, a significant shortcoming, simply because no important studies had been concluded in technical services at the time of this writing" (Introduction, p. 8). Perhaps Mr. Burkhalter is telling us more than he says; perhaps technical processing's key cost, namely salaries, involves a type of intellectual work not easily investigated by standard industrial engineering techniques. However, even if this be the case, very substantial among processing functions is the physical transfer of books and cards from "here to there" and sometimes back again, unfortunately sometimes on the same path, too. Also, there is too frequent confusion of professional and clerical motion and time elements in processing troubling many acquisition supervisors and head catalogers. This is quite aside from the intellectual levels that should mark the professional from the clerical contributions. We hope Dr. Robert
Muller, Associate Director at Michigan, and Mr. Burkhalter may soon also reveal to us some costs of the physical side of processing. The statement above certainly indicates, albeit indirectly, that they have been contemplating this area.

In conclusion, this short volume could be the start of a management literature that will meet an unfilled and obvious need of library administrative staffs and library science professors and their students. It is also right now a useful book to show to those important laymen (presidents, trustees, foundation directors, government officials, legislators, etc.) who so often tell us they cannot understand why libraries cost so much. This volume shows in a convincing and somewhat frightening way where and how fast the library money goes.—John H. Moriarty, Purdue University.


Because of scarce resources and their typical astuteness, the British are straightforwardly laying their own preconditions for successful computerization. This volume is a report of activities associated with a leading “center of excellence.” It extends on a less abstract plane the instructive primer by Cox, Dews, and Dolby of 1966. It is also a summary of several U.K. advances since the plans announced at the Brasenose Conference at Oxford the same year. In contrast to our own relative abundance, the biggest danger to the British effort appears to be a waning of financial momentum. As Professor E. S. Page remarks in a keynote address, “it must be understood by those with the resources to sponsor research that full scale operation of a computer system on bibliographic problems is necessary for further advance and may demand their support however routine the operation may appear at a casual glance.” In technical quality of design work, the British are at pains to avoid a major illness to which their American opposite numbers have frequently been subject: half-bakedness.

This collection of papers was presented at a seminar held at the University of Newcastle upon Tyne in July 1967. The proceedings comprise seven sections organized around four themes.

Half of the sixteen contributions deal with the Newcastle computer file handling system and a number of projects to which it is being applied. A remarkable thing about the Newcastle group is that they are both researchers and developers, compared to most similar U.S. activities. As Cox and Dews point out in the lead paper, they wished to create an experimental, flexible string manipulation and analysis system, comprised of generalized routines and applicable to a wide class of data forms, large files, and highly-structured non-numeric information handling problems. As have American workers, they found that manufacturer supplied software was inadequate, and so they undertook to write their own. The panoply of character-handling and list processing problems to which their system is addressed is a model summary of requirements for computer specialists new to the library application.

A second paper by Dews describes the computer editing and printing of a union list of periodicals which was the first tested use of the Newcastle package. Duncan discusses the upgrading of the output presentation capability of the computer in processing language data. He suggests that graphic arts quality intermediate output products will be the wave of the future, derived ultimately from wholly digital stores. Reviewing hardware capabilities and economics, he concludes that computer-produced book catalogs will be similar to newspaper production when volume justifies it.

In other applications, Hunt outlines one of the first uses this reviewer has seen of machine records for the preparation of catalogs of older books as a true “bibliographer’s tool” complete with an augmented descriptive format. Russell presents results on a documentation and dissemination system for literature of interest to the staff of the Newcastle group itself. Of wider interest is the work reported by
Grose and Jones on an acquisition system in the Newcastle University Library, although no mention is made of extension of the system to automated bibliographic checking other than of receipts not item-requested through the order subsystem. A paper by Coates and Nicholason on automation in the production of the British Technology Index is very germane, in particular the progress on an inversion algorithm for auto-generation of cross references to composite subject entries. Lastly, a report by Millar gives an example of use of the Newcastle system in statistical analysis of data collected in a maternity survey, with implications in terms of techniques for library management.

The second theme revolves around general issues of the library as an environment for computer innovation. Vickery stresses perspectives on economic realities vs. user satisfaction and the functions of machine records. Jolliffe, Line, and Robinson discuss standardization of library systems and bibliographic records, concluding that numerous constraints militate against exchange of library program packages above a limited subroutine level. They assert that “compatibility without rigidity” in records is necessary to a carefully planned library data interchange concept. Hawgood completes the section with a prospectus for a quantitative study intended to derive a “single benefit index” to guide allocation of hypothetical added funds for library resource development.

A section on the MARC idea in Great Britain yields what may be the best thinking yet in print on the nature of national and local catalog services based on centralized machine record distribution. Coward outlines the U.K. MARC Project status at the British National Bibliography, emphasizing requirements beyond those of detailed format of the machine record. Bregzis relates patterns of experience and future extensions of MARC data in perhaps the most advanced local pilot project among the sixteen North American libraries participating in the LC MARC experiment. The remarks by Brown in a further seminar session reveal some thoughtful consideration of the organization and use of national machine-readable data banks of bibliographic information. The melding of developments in national union catalogs, shared cataloging, and automation recurring in these discussions give the impression of vastly more synergism occurring in this group than in comparable American technical meetings.

Two separate contributions by Barraclough on file structures for experimental MEDLARS tape searching and by Lannon on the IBM System/360 version of the Document Processing System developed for generalized textual searching at the U.S. Food and Drug Administration were included as a counterpoint to the more traditionally-oriented presentations. Both papers are food for thought for librarians who have been able to accept MARC but are skeptical about so-called information retrieval applications.

This is, in sum, a remarkable and level-headed survey of some current British work in library automation, well organized into a body of materials whose factual and pertinent observations are a valuable addition to the handful of titles on the “must” list. The publishers are to be commended for making it available on this side of the “Atlantic river.”—Jay L. Cunningham, University of California, Berkeley.


Recent months have seen considerable pioneering in new media by libraries. Computer use and instantaneous transmission of library materials are at hand. Several experiments in facsimile transmission have taken place in various states. Among these have been projects by M.I.T., New York State Library, Houston Research Institute, University of Nevada, and University of California. The last one mentioned is the subject of this review.

The California experiment, carefully monitored, proposed: (1) to develop a set of procedures; (2) to analyze three elements,
a) performance of the system, b) nature of current and future demand for the system and c) the cost of the system; (3) extraction of general principles for, a) design of systems for cooperating libraries, b) comparison of telefacsimile with other delivery systems, c) recommendations of the direction future research should take in the area.

The machinery used was Xerox (LDX) Long Distance Xerography and the experiment of one month's duration, involved points from Davis to Berkeley, with transmission in one direction only.

A great deal of material was assembled during and as a result of the experiment, including procedures, control sheets, sources for verification, timing, flow charts for all aspects of the operation, from request of materials to final receipt by the requester. This material would doubtless be very valuable in any follow-up or additional experiment planned. However, certain conditions were lacking to make it an exhaustive study. The distance covered was short. Only two stations were involved. Transmission was in one direction only. Only one type of machinery was utilized and the experiment lasted only one month.

In contrast with this, the New York State experiment lasted five months and involved twenty-six request transmission sites, fifteen receiving stations, and seven sending stations. These New York State stations were widely separated at locations such as Buffalo, New York City, Albany, Ithaca, and Potsdam. An elaborate system of switching was developed which made it possible for Potsdam, with two receivers, to obtain facsimile copy simultaneously from two entirely different sending stations. Two types of machines were tested in portions of that experiment.

Several conclusions drawn by Schieber and Shoffner have also been made as the result of other projects. The cost is exceedingly high and the cost decreases as the volume of requests increases. The number of urgent requests was not great enough to assure sufficient volume to maintain a feasible cost per request. Machinery tends to break down, causing delays and pile-up of unfilled requests. In this experiment 92.9 per cent of the LDX copy was acceptable. Although the interlibrary loan process was speeded up, the report states that the borrower often did not pick up the copy until several hours later. The work habits of the borrower evidently did not change much even with the high speed service.

Since to date no machinery has been perfected to scan the printed page and to transmit simultaneously, the facsimile process is very time consuming, requiring considerable personnel. If this roadblock is removed, the reporters feel that the implications for interlibrary loan will be much greater. Other factors also are involved which determine the success of any facsimile project. A few of these are:

1. Knowledge of location of materials, such as union lists, etc.
2. Availability of materials.
4. Adequate staff.
5. A set of procedures.
6. A fairly steady stream of requests with no unusual buildup which would bog down man power and machinery.

The report points out that the time variability of demand is an important inherent constraint on the performance of the system and that there is no way to prophesy this demand. The demand did vary from hour to hour, day to day, and week to week.

The alternatives to facsimile are fairly obvious:
2. Delivery system by plane, train, auto, bus.
3. Purchase of the material.

The report indicates that certain time elements are involved in each of these and that facsimile is the only one which can provide service which is approximately equivalent in speed to direct on-site access to library resources.

Since, however, it has been concluded that facsimile is only justified for urgent requests and the cost declines as the vol-
volume of requests increases, it would be very difficult to justify the use of facsimile with the machinery currently available.—Marion G. Hess, State University College, Potsdam, N.Y.


New Serial Titles, in the words of one reference librarian, "is one of the most important bibliographical aids ever devised." The purpose of NST is three-fold: (1) to list promptly information about serials which began publication after 1949, as an aid to acquisition; (2) to supply locations of these serials in libraries in the United States and Canada, to expedite interlibrary loan; and (3) to provide data for cataloging. The publication itself has been designed to supplement continuously the Union List of Serials and to eliminate the need for another edition of this massive work.

After the publication of the third edition of the Union List, the Joint Committee on the Union List of Serials, Inc., initiated a study of New Serial Titles (NST) to determine the degree of "consumer" satisfaction and to elicit suggestions for its improvement. With financial support from the Council on Library Resources, A. Frederick Kuhlman, assisted by an advisory committee, conducted a comprehensive study based largely on questionnaires and interviews with librarians who subscribe to and/or contribute to NST.

The Report of the study cites an extremely high level of approval of the performance of NST. The scope was considered to be satisfactory by 93.7 per cent of those responding; 84.7 per cent felt that it is sufficiently representative of all fields of knowledge; 89.4 per cent indicated that the locations cited can meet interlibrary loan requests; 81.8 per cent reported that its record of bibliographical changes was adequate; and reactions to other aspects were also favorable. In spite of a general satisfaction, the participants in the Consumer Survey offered suggestions and implicit criticism from which Dr. Kuhlman has extracted a number of constructive proposals for the improvement of NST.

Although consumer satisfaction with the scope of NST was almost unanimous, there was strong support for including more government publications. There is already wide coverage of this type of serial, but Dr. Kuhlman recommends that municipal publications should also be included. An increase in coverage for other types of government publications actually is a matter of more comprehensive reporting by libraries in categories already included. This same principle should, he recommends, be applied to other types and subject categories of serials for which reporting is presently inadequate. To accomplish this, he suggests that the number of subscribing and contributing libraries should be selectively increased. The Special Libraries Association, the American Theological Library Association, and the various divisions of ALA should, he feels, take the initiative in any such attempt at increasing the number of libraries which contribute to NST.

Other suggestions in the Report include the prompt reporting of all changes in policies for lending serials; the preparing of entries from the advance printer's copy of national bibliographies, resulting in faster bibliographical control of foreign serials; and the inclusion of LC classification and card numbers when available. Of particular interest to the user of NST are the recommendations that bibliographical changes should be included in the same alphabet with new titles, and that monthly issues should be cumulated. It is notable, however, that the expansion of the list to include pre-1950 titles is not recommend ed.

The Report is obviously of great value to all of those who are concerned with the policies governing NST. As Dr. Kuhlman remarks in his recommendations, NST should be considered to be "in its formative years," and changes in its scope and organization are a natural condition of its growth and of the changing needs of li-

Of all the automated information retrieval systems which are currently in operation, the MEDLARS (Medical Literature Analysis and Retrieval) System of the U.S. National Library of Medicine has perhaps most captured the world's imagination and attention and has put both the United States and medicine as a subject discipline in the forefront in the use of computers as an aid in solving problems in information transfer. MEDLARS is a machine system designed to serve several purposes including the monthly production and printing of Index Medicus, one of the world's primary medical indexing media. It has as well the capability to produce and print subsets of a large file of literature citations either on a continuing basis for special subject groups or on demand for individuals. The system inherently must, therefore, possess some of the trade-offs that are inevitable in any multi-purpose system.

This study is not an evaluation or description of the entire MEDLARS system; (such a description is being currently published by the National Library of Medicine, under the title: Description and History of MEDLARS). It is rather an attempt to evaluate its “demand search module,” a component designed to produce, by computer, comprehensive bibliographies on many-faceted subjects on request. Nevertheless, in the process of studying this report, a reader can learn much about the construction and use of the entire MEDLARS system. In fact, some of the problems and prerequisites explored in the study have relevance to all kinds of literature searching, manual as well as machine.

There do not seem to be any particularly new methodological approaches offered in this study. They are essentially modifications and refinements of those developed by Cleverdon and others. Nevertheless, the misgivings expressed by Alan M. Rees...
in his thoroughgoing review of the general subject of evaluation in the second volume of the *Annual Review of Information Science and Technology* ("Evaluation of information systems and services") in which he predicted that "... difficulty will probably be encountered in attributing recall and precision failures to the indexing process, indexing language, search formulation and so on," do not seem to have been warranted. The basic problem, of course, is not resolved, and that is the central position of "relevance," the basis upon which both precision and recall are evaluated, and which in the end must remain largely a personal and a subjective judgment. Another problem is that to some extent the recall ratio (percentage of known relevant articles retrieved) and precision ratio (percentage of retrieved articles which are relevant) is in effect not only an evaluation of the system under study but of the effectiveness of the parallel search.

Testing and evaluation is a responsibility of any management producing a product for consumers, in order both to control quality and to improve the efficiency of the system. Since this is one of the few large systems using controlled vocabulary techniques, it has perhaps an unusually large onus of this kind of responsibility, in view of the proliferation of KWIC and other systems in which input is largely automated and do not depend as much on the human factor which although it can be more insightful can also be more erratic than the machine. The findings that the MEDLARS demand search module is operating on the average of about 58 per cent recall and 50 per cent precision do not provide any comparisons with other information retrieval systems either machine or manual because no other system to this reviewer's knowledge has been as rigorously and thoroughly examined. Nor do Lancaster's conclusions and recommendations offer much promise that these ratings can be substantially improved for performance of the entire system.

The configuration of the next generation MEDLARS system now under active development is still not known to us, but if it is still committed to the use of a controlled vocabulary and human indexing, some of the cautionary and advisory conclusions of this study will still be valid, e.g., the necessity for continual quality control, the expansion in the use of sub-headings (which should also substantially benefit the manual system), and publication of the entire entry (cross-reference) vocabulary. On the other hand, the recommendation on restricting foreign language material seems rather parochial particularly since the study is based only on U.S. investigators, and in view of the development of MEDLARS decentralized centers in other parts of the world.

This study deserves detailed examination by anyone interested in information storage and retrieval either as a producer or a consumer.—David A. Kronick, University of Texas.
ABSTRACTS

(Extracts given below are selected from those prepared for publication in Research in Education by the ERIC Clearinghouse for Library and Information Sciences at the University of Minnesota. Unless otherwise noted, copies of the following documents are available, by purchase, in microfiche or hard copy format, from the ERIC Document Reproduction Service, National Cash Register Co., 4936 Fairmont Avenue, Bethesda, Maryland 20014. Orders must include ED or LI number.)


The overall objective of this study was to provide specific information concerning the effectiveness of computer-based instruction in teaching the use of the library. The sixty-six students who participated in this three semester experiment were undergraduates enrolled in library science 195, a course offered for credit by the University of Illinois Graduate School of Library Science. The experimental group received their instruction by the lecture method. The author wrote a 923-frame program, excluding the “help” sequences for the Plato teaching system.

The following are some of the conclusions drawn from this study: (1) students under both treatments made significant gains in their knowledge of library use; (2) the experimental and control groups did not differ significantly in the amount of knowledge gained as a result of their respective treatments; (3) it was seen that in class the experimental group covered the same amount of material in less time than the control groups; (4) much more time was required for the initial preparation of Plato lessons than conventional lectures; (5) subsequent preparations for Plato lessons required much less time than subsequent conventional lecture preparations; (6) Plato instruction required less teaching assistance than conventional lectures; (7) instructor’s time during administration of lectures far exceeded the amount needed for the administration of the Plato method.


This study examines the present exchange of resources by Pennsylvania academic and special libraries and suggests means for a more effective system of cooperation, based on the assumption that the state has a responsibility in this area. Questionnaires were sent to special, college, and university libraries for information on interlibrary loan involvement, and personal interviews were also held with the academic and library staffs at eight smaller colleges. Use of the Philadelphia Union Library Catalog and exchange activities of the Franklin Institute Library were both studied from samples of their requests. It was found that a voluntary system of exchange exists, and it can be described by curves of use according to type of library. Suggestions for a more effective system include: (1) agreed upon scope for the varied institutions; (2) a multi-centered and state-wide system with regional and state programs; (3) no requirements of total resource commitment or limitation of an institution’s activities;
goals to lower barriers to use and increase total resources; and (5) measurement of use. Initiative for the program should come from the state, and immediate further study should be followed by a detailed program statement. An appendix suggests a data bank to make certain data gathered by state agencies available.


The principal goal of the project is the activation of a real-time medical literature system, with the concept for the project based on recent technological innovations and an appraisal of expected future information systems. During the first phase, a data file has been created which, with some adjustments, can be employed for time-shared interactive bibliographic information retrieval operations. The work of the project has also created staff capable of implementing more complex tasks and has demonstrated the practicability of mechanized production of catalog cards as a by-product. In view of these attainments, it is recommended that this project be continued and that the compiled data file be used for the operation, under a single authority, of a pilot system featuring interactive time-shared operations intended to provide a modest service of descriptive bibliography and to accommodate research and experimentation in more complex areas, such as subject-oriented bibliographical control. The document also includes papers by Frederick G. Kilgour on basic systems assumptions of the project (presented at the University of Minnesota Institute on Information Retrieval, November 1965) and on computer applications in biomedical libraries (given at the IBM Scientific Computing Symposium, May 1965), a report of the Subcommittee on Input Procedures for the project, the project's computer program, and directions for using the cataloging worksheet. A bibliography of twenty-six items is appended. This document is available as PB-174-524 from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151. $3.00 for hard copy, $0.65 for microfiche.


Although it emphasizes academic libraries, this study also includes the national and provincial libraries, large public libraries, and special libraries that serve Canadian scholars, students, and research workers. With the data obtained from a questionnaire on library statistics and holdings, visits to the libraries, interviews with librarians and university administrative personnel, and a poll of faculty and student opinions on library services, four major areas were covered in the survey—resources, techniques, service, and administration and finance. The central focus of the study is the rapid increase in student population, accompanied by increase in faculty, the "information explosion," new technology, rising publishing rate, shortage of professional librarians, inadequate library buildings, changes in instructional methods, and new emphasis on research. The survey reveals that never before have Canadian libraries received the attention and support now accorded them, but successful library performance will require much progress and general improvement. Recommendations for constructive action involve the areas of written policy statements, centralization, subject specialists, book selection tools and order procedures, strong reference systems, the National Union Catalogue, photocopying facilities, buildings planned for the future, academic status for professional librarians, library automation and mechanization, cooperation, sustained and increased financial support, and improvement of resources to meet Canadian Association of College and University Libraries (CACUL) standards. A subject list of special collections in Canadian libraries, a 132-item bibliography, and the checklists of reference books and periodicals used for the survey are appended. This study was supported by the Canada Council and the Council on Library
Resources and is available for $5.00 from the Association of Universities and Colleges of Canada, 151 Slater Street, Ottawa 4, Canada.


Data presented include: 1) a fourteen-year collection, 1950-51 through 1963-64, on which analyses were performed and predictions generated, and 2) a three-year “follow-up” collection, beginning in 1964-65, in which subsequent information has been compared with predictions. For each of the fifty-eight libraries the following statistics were obtained: volumes in and added to the collection; money spent for books, periodicals, and binding; salaries and wage expense; professional and non-professional staff size; lowest professional salary paid; and total expenditures. The following were obtained when possible: total reported enrollment; reported graduate student enrollment; and number of PhD degrees granted. This 1966-67 (fourth) issue of the report is shorter than the other issues as only that text necessary for understanding the graphs and tables has been included. For more discussion and text the earlier issues may be consulted. Availability—Library Offices, Memorial Center, Purdue University, Lafayette, Indiana 47907 ($2.00).


This study of library resources was undertaken as a part of a statewide plan for higher education in Texas. The document includes descriptions of library facilities and resources at the University of Texas at Austin, other universities, and public and private junior and senior colleges. The public library network, health science libraries, law libraries, special libraries, and emerging cooperative patterns are also described. The report’s recommendations include improved bibliographic access to the University of Texas at Austin library collections, a strengthening of the Texas State Library, efforts to increase use of existing resources, and coordination of cooperative programs. A sixty-page alphabetical subject list of areas of strength in Texas libraries has been compiled and included. Lists of one hundred basic periodicals and 257 basic reference books used to check holdings in the various libraries appear in the appendices along with two maps showing locations of public and private colleges and universities in Texas. Availability—Edward G. Holley, Director of Libraries, University of Houston, Houston, Texas 77004 (Free).


The problem of predicting the patterns of use of library materials in order to decide which monographs should be removed from a main collection and placed in storage is studied in this report. Specifically, the study examines previously developed mathematical models and develops new mathematical models and statistical techniques for studying the dependence of circulation rate on a book’s age and other characteristics. The dependence of circulation on age since acquisition is studied directly while some other characteristics, such as library environment, subject matter and language of the monograph, are studied indirectly by dividing the total collection into homogeneous groups of books on the basis of these characteristics. In spite of recent tendencies to overemphasize the usage histories of library materials and play down the role of age, the study shows that age is a significant variable in predicting the rates of usage of monographs and in deciding which monographs may be removed from a library’s main collection. Appendices include: 1) a state-of-the-art examination of use studies; 2) a bibliography of 547 use studies prepared by L. Carroll DeWeese, who supplemented and updated the 1964 bibliography of use studies by Richard A. Davis and C. A.
Bailey; and 3) a bibliography of eighty-four items compiled by the author of this study. This report is a Purdue University doctoral thesis and is available as PB-176-525 from the Clearinghouse for Federal Scientific and Technical Information, Springfield, Virginia 22151, $3.00 for hard copy, $0.65 for microfiche.


This study was conducted to determine the economic feasibility of a joint computer center and to analyze the potential for such a center to become part of long-range plans for regional and national computer networks. It was found that: the bases for fruitful interlibrary cooperation within the consortium already exist; it is necessary to create tools for locating materials; the library operations are large enough and there is sufficient duplication of materials among the libraries to justify use of a jointly operated computer system for record keeping functions; and new techniques and data sources in machine readable form are increasing the potentialities of computers in libraries. Four alternatives are proposed: 1) an approach involving independent action by each library, except for circulation records, is not recommended; 2) a jointly operated small-to-medium-size computer, to be operated in batch mode with basic records maintained on tapes, is recommended for implementation at this time; 3) although now too costly, a sophisticated system involving massive on-line storage and use of remote terminals should follow the above system; and 4) a system involving a central facility for storage of little-used material and capability of facsimile transmission is recommended for re-study in another decade. A list of the consortium universities is appended. This study was conducted under a grant from the Council of Library Resources to Georgetown University.


The objectives of this survey were to describe the characteristics of librarians employed on the staffs of the more than 2,000 higher educational institutions in the United States in 1966-67, and to identify and examine relevant manpower issues. The report is based on the responses of 2,282 individuals, or 93 per cent of 2,459 sampled full-time employees. Data from other relevant studies are used to indicate trends and comparisons. Opinions of library career and of salary are reported. Major manpower issues are seen as: the importance of challenging work as a characteristic of the library career; recognition of special problems in librarianship where women are a numerical majority; need to eliminate discrimination; importance of full faculty status for academic librarians; and need for more equitable salaries. Appendix A (pages 93-104) contains a technical note on sampling procedures and results by James W. Grimm.


The objectives of the study were to determine the extent and nature of unmet needs of users of reference and research library resources and to propose measures to meet those needs. Data on research library use were collected by three questionnaires sent to four groups of users: 1) all faculty members of four-year public and private institutions of higher education in Michigan; 2) all teachers of off-campus university courses from the nine public universities and colleges offering such programs; 3) a sample of elementary and secondary public school teachers; and 4) a sample of manufacturing executives.
Interviews with selected librarians, faculty members, and administrators yielded additional data. A study of interlibrary loan slips and non-registered borrowers' cards from selected major libraries in the state, and earlier studies and reports of libraries complete the data sources. The five major recommendations are: 1) establish intermediate reference centers; 2) designate as statewide resource libraries the Detroit Public Library, the Michigan State Library and the libraries of Michigan State University, Wayne State University, and the University of Michigan; 3) provide library collections and facilities for off-campus students; 4) the Michigan State Library should prepare and distribute a union list of serials; and 5) establish a coordinate council on reference and research library resources.


This conference was held to provide a forum for wide-ranging discussions of library technical assistant training. Junior college educators and library personnel from school, college, and special libraries presented papers on these topics: 1) the junior college perspective on library technology, including the education of library technical assistants and programs in California; 2) areas of service for the library technical assistant in public, special, and school libraries; 3) the administration and development of library technology programs, with discussions of program funding, the labor market, recruitment and placement; 4) the relation of library technical assistant training programs to professional associations; and 5) the future of library technology programs, with five kinds of information workers suggested—teacher assistants, library technicians, museum technicians, media technicians, and data processing technicians.


This study formulates a research program to facilitate the establishment of libraries for small liberal arts colleges using modern library methods and technology and new techniques of information storage, retrieval, and transfer. As a result of interviews with librarians and others in the United States and Europe and from a review of current literature, areas in which further research is needed are defined as: 1) systems analysis and design; 2) new technology and techniques; 3) coordination of administration and user-oriented service; 4) interrelationship of education, information, and library services; and 5) potentialities of information storage and retrieval. New educational concepts and techniques affecting libraries include more independent study, integration of academic disciplines, audio-tutorial teaching methods, learning centers, and the library-college. The ambiguous relationships of non-book information media—audio-visual, reprographic, miniaturized, and automated—to the college library require clarification. The objectives of education, the role of the library and the librarian, coordination with the faculty in book selection, budget problems, potentialities of the computer, interlibrary cooperation, cost effectiveness, and decentralization vs. consolidation, are problems that need study as a basis for development of a new college library. A detailed outline of a research program is included.
INTRODUCTION

This article continues the semi-annual series originally edited by Constance M. Winchell. Although it appears under a byline the list is actually a project of the Reference Department of the Columbia University Libraries, and notes are signed with the initials of the individual staff members.

Since the purpose of the list is to present a selection of recent scholarly and foreign works of interest to reference workers in university libraries it does not pretend to be either well-balanced or comprehensive. Code numbers (such as AA71, 1EA29) have been used to refer to titles in the Guide to Reference Books and its Supplement. Beginning with this issue, Library of Congress card numbers are provided whenever available.

NATIONAL BIBLIOGRAPHY


To be published annually (although this first issue covers two years), this new national bibliography lists all the types of publications noted in the sub-title, as well as some government documents about which no statement is made. Arrangement is in two sections: Part I lists Ethiopian language materials alphabetically by author; Part II is a listing of foreign language books and articles in a classified order based on a modification of the Dewey class scheme. Full bibliographic information is given for each entry and a descriptive or explanatory note is sometimes added. There is an author index.—R.K.


This work describes in detail the various publications forming the current national bibliographies of Russia and the republics of the Soviet Union. For each entry we are given complete title, an illustration of a recent issue’s cover, starting date, periodicity, changes of title, detailed bibliographic description, arrangement, and explanation of special features such as indexes. Especially useful to the bibliographer and reference worker is the listing of the number of issues and supplements of various kinds for each year of publication. Tabular arrangement for much of this information makes use feasible for the person with limited knowledge of the language.—R.K.

LIBRARIES


Intended as a companion to the compiler’s Subject Collections in European Libraries (Suppl. 1AB9), this volume is in effect a rearrangement of the information from the earlier volume, incorporating ad-
ditions and revisions. Geographically arranged, the work includes listings for over seven thousand European public, university, and special libraries, some 2,300 of these being new or revised entries. Listings give information such as library address and director's name, special collections or subject strengths, restrictions, photocopy and microform facilities, and interlibrary loan policies.—D.K.

ENCYCLOPEDIAS


More than 400 English-language general encyclopedias, both single- and multi-volume works, are briefly described and most of them evaluated in this bibliography. The publishing history of each work is traced, and for many of the encyclopedias which went through two or more editions, changes in title, editorship, content and quality are noted. Establishing relationships between the publications and distinguishing between similar, but unrelated, titles was in itself a formidable task; librarians are fortunate to have Walsh's findings set forth in this accessible title listing. A chronology, an index of originators, compilers, editors, etc., and an index of publishers all make for added usefulness. References are given to reviews in Subscription Books Bulletin and the Library Association Record, a factor which will increase the value of the work in libraries where advice on home purchase of encyclopedias is regularly sought.—E.S.

DICTIONARIES


Contents: t.1, A–Δ. 305p. 68F.

The compiler of this new Greek etymological dictionary acknowledges his dependence upon the dictionary of Hjalmar M. Frisk, Griechisches etymologisches Wörterbuch (Guide AE299). He relies on Frisk's work for most of the etymology—the history and evolution of the form of a word—deviating from his predecessor where a recent publication has presented support for a contrary theory. M. Chantraine has centered his efforts on the history of the use of the word, from 2000 B.C. to modern demotic and purist Greek. It is in this realm that he hopes to supplement information in existing etymological dictionaries. Thus, citations to classical authors and to inscriptions are provided in the entries; derivatives and compounds are listed; and references are made to linguistic and philological studies appearing in monographs and journals.

Reference librarians and scholars in this field will also want to note the 153-page supplement to the 9th edition of Liddell and Scott's Greek-English Lexicon (Guide AE293) recently published by the Clarendon Press (1968). Its purpose is to update the 1925-40 edition by utilizing recent publications of inscriptions and papyri, by including revisions, and by incorporating the "Addenda and Corrigenda" which have appeared in printings of the 9th edition since 1940.—L.B.


Contents: Fasc.1, A-Calcitro. 256p. 75s.

Planning and preparation of this new dictionary have been underway since 1931. Treating classical Latin from its beginnings to the end of the second century A.D., the work is "based on an entirely fresh reading of the Latin sources." (Publisher's Note) Within established limits, an effort is being made to treat all known words from whatever source, literary or non-literary. The general principles and the layout of the articles are much the same as in the Oxford English Dictionary. Quotations illustrating usage are arranged in chronological order; etymological notes are brief; and proper names are included when their importance seems to warrant it. Seven more fascicles to be published at two-year intervals will complete the work; it promises to become a standard in all academic libraries.—E.S.
PERIODICAL INDEX


New periodical indexes are always welcome. This "Nigerian Readers' Guide" is designed to "enable readers to locate and . . . utilize the . . . literature of particular relevance to Nigeria and West Africa . . . published in Nigerian periodicals." (Intro.) Twenty-one journals, chiefly of general or social science character are indexed, most of them for the first time. Articles are entered by author, subject, and title, but the last category seems to apply, rightly, to imaginative writing and to unsigned articles. Spot-checking shows some inconsistency in subject breakdown and disregard of the principle of specificity. This complicates searching less now, when only one short (57p.) volume is concerned, than it will later. Bibliographic information is given for each article in much the same way as in the Wilson indexes. Journal title abbreviations are explained, and a "List of periodicals indexed" carries full information for each. The 1967 and 1968 volumes should appear within the year, and retrospective volumes are planned.—R.K.

DISSERTATIONS

McNamee, Lawrence F. Dissertations in English and American Literature: Theses Accepted by American, British and German Universities, 1865-1964. N.Y., Bowker, 1968. 1124p. $17.50. 68-27446.

Doctoral candidates in English and American literature will be saved countless hours of tedious searching by this computer-produced bibliography of dissertations. Full information appears in a classified listing outlined at front of the volume, and which includes sections on English language and linguistics, the teaching of English, comparative literature, and "creative" dissertations, as well as the expected sections for literary periods, genres, individual authors, etc. A dissertation which deals with two or more literary figures appears only once in the main listing, but a "cross-index of authors" provides access to those items which do not appear under a given literary figure's name in the body of the work. There is also an index by author of the dissertation. Like Kuehl's Dissertations in History (Suppl. IDA4), coverage is confined to dissertations submitted in a single department, and relevant studies done in related fields are not included as they are, for example, in Al- tick and Matthews' bibliography of theses in Victorian literature (Guide BD328). (That work also includes French, Austrian and Swiss dissertations, and is not wholly superseded.) It seems unfortunate and slightly ironic that, in a computer product, so early a cut-off date occurs, while the new, conventionally-printed edition of the Woodress Dissertations in American Literature (Durham, Duke, 1968) includes listings through 1966.—E.S.


A welcome addition to the growing collection of separately-published subject dissertation lists, this bibliography covers classical studies from the beginnings of graduate study in North America through 1963, with a fair number of entries for 1964 and 1965. The dissertations are concerned with the pre-history and history of Greece and Italy through 500 A.D. in all their cultural aspects. The main listing is by author of the thesis and includes reference to an abstract or printed version when known. Extremely well-indexed, the bibliography has an average of nearly four subject entries per dissertation, as well as title entry for each. There are also much briefer indexes of Greek and Latin words of special linguistic, lexicographical, semantic, or syntactical value. Supplements are anticipat ed. The work will form a noteworthy reference tool in this field.—M.S.

BIOGRAPHY


Over five thousand brief biographies of figures prominent in European Catholicism are brought together in this new addition to the publisher’s series of “Who’s Who in Different Countries.” Both ecclesiastical personalities, selected according to the dignity and position which they currently occupy in the Church or for special merit, and laymen, chosen either because of key positions they hold in service to the Church or because of prominence in other fields and concurrent Church activity, are included. The first part of the volume is an alphabetical arrangement of the biographies. Part II consists of a survey of the hierarchical organization of the Roman Catholic Church and includes such topics as religious orders and congregations in Europe, cultural institutions of the Catholic Church in Europe, and organizations and associations of the lay apostolate. It should be noted that many of the biographical entries are duplicated in the other publications of the Intercontinental Book and Publishing Company. There is no mention in the preface of further volumes which may be forthcoming.—P.B.


After almost four years of preparation, a new volume has been added to the Marquis biographical series with this international dictionary of notable scientists from all periods of time. The basic format conforms to that of the other “who’s who” volumes, as does the kind of information provided. However, unlike most directories of scientists, instead of concentrating on general research interests of the biographers, emphasis here is on their scientific contributions. Approximately thirty thousand entries are included, almost half of them historical, with the length of the sketches depending in part upon how much information could be obtained. The editor’s preface recounts the difficulties en- countered by the research staff in undertaking such a vast project (e.g., language difficulties, variations in the spelling of names, difficulty in obtaining biographical information on certain historical figures), and the possibility of mistakes in this first edition is candidly admitted—and understandable, in view of the nature and scope of the material involved. A high percentage of the information on contemporary scientists was supplied by the scientists themselves. The volume will probably prove of most value in the small and medium-sized reference collection.—P.B.

Quotations


Although it is not likely immediately to displace such standard favorites as Bartlett (13th ed., 1955, Guide BD75; 14th ed., 1968), Stevenson (Guide BD83), and the Oxford Dictionary of Quotations (Guide BD80) in the affections of reference librarians, this new volume will be welcomed for the obvious reason that it offers a different selection from each of the others, and includes some quotations, both old and new, not found in any of the works mentioned. No figure is given as to the approximate number of quotations included, but it would appear to be substantially less than in the latest edition of Bartlett. In arrangement the new collection most closely resembles the Stevenson work, using a topical listing with author and key-word indexes. The latter is termed a “subject index,” is set double column, and employs a larger type than is usual in these indexes; a further unusual feature is the fact that the index includes references to terms occurring in the explanatory notes which accompany some of the quotations. As in Stevenson, quotations are numbered on the page for easy index reference.—E.S.

Literature

Offered as an aid to the academic study of African literature, this is a "listing of creative works of literature in English by black African writers, along with relevant criticism." (Pref.) It contains citations to general bibliography and criticism, anthologies, individual author bibliographies (works and criticism), a selected list of periodicals, and an author index. Both books and periodical articles are included; full bibliographical details are given.—F.O.


Concerning itself with those authors publishing mainly in the current century, this checklist covers all major and many minor writers in English, regardless of nationality. It is arranged alphabetically by author, then chronologically by title. Separately published novels or novellas of adult interest are treated, including original paperbacks, unfinished works, and collaborations. Citations are complete through 1966; awards are noted; and some footnotes are given for variant editions. As far as format is concerned, a more conventional listing with the author's surname first might have made for quicker reference use; the addition of a title index would have been helpful in an otherwise valuable work.—M.S.


Using the vast collections of the Lenin and Saltykov-Shchedrin Libraries, the AllUnion Book Chamber, and the National Theater Library as its sources, this bibliography brings together citations for belles-lettres written on the theme of the Russian Revolution by Soviet authors from 1917 through the first half of 1966. (A two-page supplement at the back of the volume actually updates it to June 1967.) The items, for all of which there are annotations, have been personally examined by the compilers, and include not only separately published works but contributions to journals, yearbooks, and anthologies. Excluded are folk tales, memoirs, children's literature, and newspaper articles. Arranged chronologically by decade starting with 1917-1920, each period has subdivisions for prose, poetry, drama, and, when necessary, miscellaneous genres. Under these headings citations are listed alphabetically by author, then chronologically. The usual abundance of indexes found in Russian bibliographies is represented here by an index of authors and of titles of collections, a short thematic index, and an index to the names of historical personages dealt with in the works mentioned; references are to the 3,667 item numbers. The many cross-references help to exemplify this compilation as another instance of Soviet thoroughness and accuracy in bibliographic method.—E.L.


Criticisms of dramatic works by outstanding European playwrights, past and present, are listed in this new bibliography, a companion volume to the compilers' American Drama Criticism (Hamden, Conn., Shoe String, 1967). Items cited have appeared in English and foreign language books and periodicals from 1900 to 1966. Emphasis, however, is clearly upon English-language materials; most criticisms listed have been gleaned from standard reference sources. Selection has been exercised only in the choice of playwrights: inclusion of a critical work does not necessarily attest to its value. With the exception of Shakespeare, who has been omitted because of the abundance of bibliographical studies devoted to him, playwrights included are those considered outstanding in their respective countries and, in the case of modern authors, those of international renown. The arrangement, alphabetical by playwright, is logical; standard bibliographical information has been provided. An index of playwrights, pseudonyms, and play titles complements the body of the bibliography.—L.B.

Contents: v.1, Comedies; v.2, Histories and non-dramatic works.

This complete Shakespeare concordance will be of interest chiefly to those whose approach to Shakespearean vocabulary is statistical in nature. It is a “series of interlocking concordances to the individual plays, to the characters, to the poems . . . and to the complete works.” (Pref.) All words are indexed and primary statistical data (i.e., number of words, of lines, of different words in each play, role or poem), as well as act-scene-line reference, absolute frequency and relative frequency are given. The text followed is that of a forthcoming Houghton Mifflin edition for which G. Blakemore Evans is textual editor. The last three volumes will contain the complete concordance with context of the words indexed. Only the larger reference library will require the full set.—R.K.

**CINEMA**


A new title among the proliferating reference works devoted to the film, this encyclopedia encompasses all aspects of international film history in one volume. Thus, one alphabetical listing contains entries for individuals, films, techniques, organizations, and countries. This catholicity makes the volume a valuable reference tool, especially for the library which has not purchased some of the more limited dictionaries in this field. The volume lacks the appurtenances of a scholarly encyclopedia: there are no bibliographies appended to articles, even though many contain quotations from critics and film historians; articles are unsigned. A companion volume is projected, to be entitled *L'Encyclopédie du cinéma par l'image*.—L.B.

**ANTHROPOLOGY**


This is a computerized cross-cultural analysis of 400 cultures, the printout appearing in the form of lengthy tables. The basic datum to be obtained from the volume is: for a given cultural characteristic, a series of other characteristics may be expected to occur with a specified degree of probability. Having grasped the basic purpose of the work, the user faces the more formidable task of understanding the theory and methods upon which the analysis was devised and produced. A detailed introduction provides this information, and several major points should be noted. First, the work is based on a 400-culture sample derived from G. P. Murdock’s *Ethnographic Atlas*, as a representative sample of the world’s known cultures. The cultural sample has then been analyzed according to 526 characteristics, each characteristic formulated in a linguistic style readable by computer. The style adopted was “dichotomous,” i.e., each characteristic is described in terms of two mutually exclusive statements. The actual analysis or “coding” was done by a large number of practicing anthropologists, and users are advised to acquaint themselves with the predisposition and anthropological persuasion of the researcher (readily identified in the introduction and appendices) who did the coding for the particular characteristic and culture in question. Further, there is an explanation of the statistical quantities that are employed to describe the probabilities involved in the conclusions; these probabilities determined the syntax of the sentences in which the computer expressed the relationship between any given pair of cultural characteristics. Finally, the compiler emphasizes that the function of the survey is both to uncover previously unsuspected relationships and to verify the existence of relationships.—F.O.

**MAPS AND ATLASES**

This updating of the 1885 edition of the catalog (Guide CK183) includes materials acquired by the British Museum up to the end of 1964. Not only does it list maps, atlases, and globes in the Map Room, but literature on them, as well as “important cartographic material in other collections of the Department of Printed Books and Oriental Printed Books and Manuscripts.” (Introd.) For each item the main entry is under the name of the geographic area, with added entries for surveyors, compilers, editors, and the like. If necessary, the item is entered under several areas or, if the map is not restricted, it is placed under the heading “World.” It will be extremely useful to have the eighty years of acquisitions cumulated with the 1885 list in this new set.— E.M.


When completed, this will be the first comprehensive bibliography of early Dutch atlases. P. A. Tiele’s Nederlandsche bibliographie van land- en volkenkunde (Amsterdam, 1884) is recognized for usefulness in identifying Dutch atlases, but is equally concerned with voyages, journals and topographical descriptions. Dr. Koeman has concentrated on the atlases and has undertaken complete bibliographic description of them—title, imprint, size, scale, signature and page numbering, as well as the history of variants and editions. Arrangement is by authors and/or publishers, with cross-references where necessary to maintain historical continuity. Concern for the history of a particular atlas has led to the inclusion of illustrative tables, diagrams, and citations to foreign publications connected with atlases published in the Netherlands. Usefulness of the work is enhanced by the listing of libraries where each work has been located, and by reproductions of title-pages and frontispieces. This first volume describes land atlases and town books, as will volumes 2-4; a fifth volume will include sea atlases, pilot guides, and celestial atlases, with a complete index as a conclusion to the work.— D.K.

ANTQUITIES


The first edition of Hoops’s Reallexikon appeared during the years 1911-19 in four volumes. To judge from the first Lieferungen of the second edition, this will be virtually a new work, the articles having been not merely updated, but wholly rewritten, with, of course, many new entries added. All articles are signed, most carry bibliographies, and it is interesting to note that in this first installment several articles by a British scholar appear in English. When completed, the lexicon should be a valuable reference source not only for archaeology and Germanic philology, but for scholars in such related areas as ancient history, art history, mythology and folklore.— E.S.

HISTORY


Taking its inspiration from Pirenne’s Bibliographie de l’histoire de Belgique (3d ed., 1931; Guide DC28), this new work covers the whole range of Netherlands history. More than 8,600 items, both books and periodical articles, are cited in the classed arrangement which includes sections for general works, prehistory and archaeology, and political history subdivided by periods through 1945. In addition, there are extensive sections for local, colonial, military and maritime, economic and social, legal, church, and cultural his-
The great majority of citations are, of course, in Dutch, but there are numerous entries for English, German, and French works, plus a scattering of items in other languages. The cut-off date is generally 1963, but some items as recent as 1965 are listed. Contents notes are sometimes provided, as are occasional brief descriptive or critical notes; there are indexes of authors, of personal names, and of place names. This is a scholarly and workmanlike bibliography.—E.S.


Mrs. Case states that the purpose of her bibliography is “to aid scholars of modern South Asian history to find material relevant to their research from the vast periodical literature in Western languages.” (Introdi.) For this reason the articles have been carefully selected for their contribution of fact or original interpretation. Collections of essays have been analyzed, as well as periodicals published between 1800 and 1965. The arrangement of the articles is by broad heading subdivided into numerous smaller topics. Since an article is listed only once in the main body of the guide, an extensive subject index is provided. The second part of the work indexes some 650 dissertations on South Asia accepted through 1965. Newspapers published in South Asia since 1800 are listed with locations in a third section. Scholars in all areas of the social sciences will be pleased to have all these materials drawn together in such a usable, well-indexed volume.—E.M.


As the author points out in his preface, this bibliography of materials published in the twentieth century, although originally intended for the social scientist, “should prove eminently useful to . . . administrators, to planners, to government extension workers, to teachers, and to students.” The geographic areas covered by the work include the mainland and insular possessions or former possessions of France, the Netherlands, Great Britain, and the United States. Material on Haiti and the Spanish-speaking islands of the Caribbean has been excluded due to the number of bibliographies which already exist for these areas. The bibliography is divided into ten major subject sections, with many further subdivisions. Entries are arranged alphabetically within chapters, and each entry is assigned a number based on a classification system generated by the data treated. In addition to standard bibliographic data, each entry includes a coded notation of the geographical area covered, cross-references to other chapters where the entry is cited, and, in most cases, coded notation of a library in New York City where the item may be found. There are author and geographical indexes for the convenience of the user.—P.B.


Although published under the general editorship of an Englishman, Robert Maxwell, this detailed volume is, except for the work of translating it into English, an entirely Hungarian product. Compiled under the auspices of the Hungarian Academy of Sciences by a team of about seventy-five local authors, reviewers, and editors who take joint responsibility for the articles, it expresses a distinct ideological bias and nationalism.

Handsomely produced, with hundreds of illustrations (some in color) and several maps, it attempts to survey all aspects of Hungarian development and activity from earliest times to 1963. Events of major importance have been added past that date, and statistical data is included up to 1967. There are chapters on the current political structure of the country, with lists of government posts and names of people filling them; on geography and ethnography; on history, political organization, economy, health, education, science, literature, performing arts, fine arts, and international re-
Selected Reference Books of 1967-68 / 83

lations. Appended to each chapter is a bibliography of books and periodical articles in Western languages and in Russian, most of which were published after 1960, but appearing in Hungary or other Eastern European countries. Rounding out the volume is a nineteen-page chronology, twenty-five pages of statistical tables, a conversion table for weights and measures, and separate name and subject indexes. It more than fulfills the promise of its title by the ampleness of detail, and if read for facts rather than their interpretation it should prove to be a respected and much-used reference aid. —E.L.


This first volume of a planned series of bibliographies on British history is intended for "mature scholars and advanced students." (Pref.) The work is divided into fourteen broad subject sections (excluding literature), each of these being subdivided according to printed sources, surveys, monographs, biographies, and articles. Conyers Read's Bibliography of British History: Tudor Period (Guide DC123) must still be used by serious students for its easier arrangement, more specific subject headings, and open format, as well as for its more extensive coverage. Since the second edition of the Read bibliography closed its search for entries as of January 1, 1957, the Levine work will be valuable as an extension of coverage to September 1, 1966. One could wish that the other volumes in the "Bibliographical Handbook" series will follow rapidly, especially for periods in British history not as adequately covered as the Tudor era.—E.M.


Past and present relations between Vietnam and the West is the subject matter of this timely, annotated bibliography. After a review of publications specializing in this area (e.g., periodicals, conference and congress proceedings, bibliographies), the author presents citations to complete works and to articles on Western-Vietnamese contact in a chronological historical breakdown. Items are in the Western languages, and most entries include brief descriptive matter. Other features worth noting are the concise chronology of events concerning relations between Vietnam and the West from 1280 to 1957, the index of authors' names and personal names, the geographical index, and a number of plates.—P.B.

Trask, David F., Meyer, Michael C., and Trask, Roger R. A Bibliography of United States-Latin American Relations Since 1810; a selected list of eleven thousand published references. Lincoln, Univ. of Nebraska Pr. [1968] 441p. $10.95. 67-14421.

The compilers' stated purpose in presenting this bibliography "has been to provide in one volume an extensive listing of published sources and authorities which both collates and expands the corpus of previous general lists of references for the history of United States-Latin American relations."—Pref. The work thus expands and updates pertinent sections of selective lists such as the Bemis and Griffin Guide to the Diplomatic History of the United States, and should eliminate the need for searching various indexes and annuals such as the Handbook of Latin American Studies for this particular area of research. Listings are in two main sections: a chronological survey, and a country-by-country survey, each with appropriate subdivisions. Since an item is fully cited only once, special attention should be given to the cross-references provided at the end of sections and subsections. There is an author index. —E.S.

Science

The purpose of this publication is to act as a guide to the mass of translations of scientific and technical journals which have appeared in recent years. Russian-to-English translations predominate, but other languages such as Czech and Japanese are represented. No subjective evaluations of the translations have been attempted. The first part of the guide covers journals which are cover-to-cover translations of existing publications; a second section treats translation journals which do not gather their material from a single original-language publication. Remaining sections include cross-references from translated to original titles, some frequently encountered abbreviations of Soviet journals, and a key to publisher and distributor abbreviations used in the citations. Entries are alphabetically arranged by original title; each citation includes the translated title, year and issue of the original which first appears in translation, frequency if known, publisher, and any additional pertinent data. An important point to note is the transitory nature of the information to which the compilers have given their attention, and in the preface they express the hope that "a future edition of this monograph will be able to update any changes." Meanwhile, because of the relative currency and broader scope, it effectively supersedes the Library of Congress List of Russian Scientific Periodicals Available in English (Guide EA81) which last appeared in 1962. It also complements the 1966 revision of R. C. Gremling's English Language Equivalent Editions of Foreign Language Serials.—P.B.


Sub-titles: Aeronautics, astronomy, biochemistry, botany, chemical engineering, chemistry, civil engineering, computer technology, electrical engineering, electronics, geology, guided missiles, mathematics, mechanical engineering, medicine, metallurgy, meteorology, mineralogy, navigation, nuclear science and engineering, photoelectronics, photography, physics, planetary exploration, radio and television, rocketry, space travel, statistics, zoology.

For the general reference collection Van Nostrand's Scientific Encyclopedia (3d ed., 1958; Guide EA88) has long been respected as a useful basic work. Following the pattern of revision at ten-year intervals, the new edition reflects the advances, developments, and shifts in emphasis of recent scientific research. This is physically a larger volume than its predecessor, both from standpoint of number of pages and of page size, and includes some 16,500 terms. Spot-checking shows that, while many entries remain unchanged, there is an impressive number of new entries (e.g., for various aspects of space science and computer technology), some substitution of new articles or reworking of earlier entries, many new diagrams and illustrations, and new cross-references as needed. Some entries from the earlier edition have been dropped. Although the articles are unsigned (and there are no bibliographies), a number of new names appear in the list of contributing editors. This promises to remain a useful quick-reference source for both scientist and layman.—E.S.


This volume attempts to clarify the confusion about medieval and early modern English weights and measures by giving specific dimensions and variations according to time and place. Each entry includes: variant spellings, arranged by century of their most common usage; etymology; a general explanation of the unit and its variations, with metrical equivalents when possible; and citations from medieval and early modern sources to illustrate usage. General terminology and fundamental English laws on weights and measures are given in the appendices. There is a critical, annotated bibliography.—D.K.
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