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CONTENTS

Connie R. Dunlap 395  Organizational Patterns in Academic Libraries, 1876–1976

Stanley McElderry 408  Readers and Resources: Public Services in Academic and Research Libraries, 1876–1976

Helen W. Tuttle 421  From Cutter to Computer: Technical Services in Academic and Research Libraries, 1876–1976

Olivia Opello and Lindsay Murdock 452  Acquisitions Overkill in Science Collections—and an Alternative

Mathilde V. Rovelstad 457  Open Shelves/Closed Shelves in Research Libraries

469  Recent Publications

469  Book Reviews

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IN THE LAST HALF OF THE 1800s, many of the large academic libraries of today were in fledgling institutions, and often the libraries were run by a part-time faculty member with the aid of a few students who kept the library open and circulated books—activities often limited to a few hours a week. Book collections were small and were often housed in a single room. In many libraries no formal classification system was used, and books were placed on the shelves with a fixed location by broad subject groups.

According to recent patterns of development, libraries, and hence library staffs, were slow to grow. Book ordering, handling of accounts, personnel, and other library functions were often managed by the librarian’s office. The small staff that existed was concerned primarily with housekeeping tasks; and because the span of control was so limited, there was little need for formal organization.

In the early years of American academic library history, organization appears often to have been the result of happenstance or a consequence of institutional development rather than a careful analysis of the library's needs. In 1900 no library in the U.S. had a book collection of over 1 million volumes. By 1937 there were thirteen such libraries, and by 1951 there were twenty-eight and only half of these were academic libraries. In 1975 there were thirty-nine libraries, twenty-six of them academic, with more than 2 million volumes.

The point at which organization begins to emerge as a problem and to be recognized as a separate element of administration can only be guessed at, but a fair estimate seems to be when a library collection reaches 200,000 volumes.

In tracing library literature, little early reference is to be found concerning library organization or its problems. Not until the late 1930s and early 1940s was much attention given to a subject now considered to be one of the most important aspects of library administration. It is also interesting to compare successive editions of two of the “bibles” of university library administration and to note not only the amount of space given to library organization but more especially to the change in the treatment of the subject. The two editions of Wilson and Tauber (1944 and 1956) show relatively little change as compared with the four editions of
Lyle (1944-1974). The greater time span is doubtless due in large part to the more sophisticated treatment and indicates the growing recognition that a careful study of organization is essential to good library management.

Organization must be flexible enough to shift with changing conditions—a situation well known to librarians in 1976. An organizational pattern is effective only while the conditions for which it was designed exist, and organization alone will not assure attainment of library goals. Necessary corollaries to success of programs are the skill, expertise, and goodwill of the staff, understanding of the goals and the means necessary to attain them, supervision, and adequate training of staff.

Many factors influence library organization. Among the most important are the nature and purpose of the institution, size, growth rate, space, and cost. Community and small four-year liberal arts colleges are usually heavily committed to a multimedia instructional approach, whereas the largest of the universities emphasize graduate education and faculty research, relying almost totally on book resources. The organizational configurations of the libraries in each of these types of institutions, and all of the libraries in between these two extremes, will be determined in large measure by the kind of institution in which they exist and the special interests of that institution.

As the library grows, organizational changes must accommodate the increased span of control, greater complexity of operation, or geographically separate location of units. The space available will also affect operations. This is especially true where space results in severe overcrowding so as to separate related activities and hinder the smooth flow of work or where new buildings or enlarged facilities permit expansion of services or programs. Cost is certainly one of the most important factors in library organization, and librarians continually try to develop systems which make the most efficient and effective use of all resources and to correct organizational patterns which result in expensive or inadequate service.

**TYPES OF ORGANIZATION**

E. A. Wight has identified six bases for departmental organization: (1) function (acquisition, circulation, reference, etc.); (2) activity (order, repair, extension, etc.); (3) clientele (children, adults, undergraduates, etc.); (4) geography (branches); (5) subject (fine arts, history, technology, etc.); and (6) form of material (serials, audiovisual, documents, etc.). All six types are to be found in college and university libraries, and several types are frequently combined.

As recently as 1940, the average college or university library was organized along departmental lines. Work was divided among a number of departments depending on the size of the library, and the heads of these departments all reported to the chief librarian and were responsible to him or her alone. As the library grew and more departments were added, administration began to break down or the librarian became so immersed in operational duties that little time was left for the broader aspects of librarianship such as planning and institutional relationships. In the large libraries, a trend developed to divide the work into two or four major divisions, each of which contained a number of related departments. An assistant librarian was appointed for each division, and only the division heads reported directly to the chief librarian. Considerable difficulty with the new divisions was initially experienced, and at least three different forms of divisional organization were tried at Columbia, Harvard, and Illinois between 1941 and 1950.
By 1952 one particular plan for divisional organization had been widely accepted in large libraries. This is a bifurcated functional organization in which all library activities are considered either reader services or technical services. This type of organization is still the most prevalent plan today in large libraries, even though a number of variations to it exist. Many smaller libraries continue to be organized on a departmental basis; and since the span of control is smaller, it is probably completely satisfactory.

Another popular form of organization, especially in smaller or medium-sized libraries, is the subject divisional plan commonly found in public libraries. Johns Hopkins and the University of Chicago libraries, however, had a subject division type of organization before it was applied in public libraries. In 1939 a divisional arrangement was developed at Colorado by Ralph Ellsworth in a new building, and a four-division plan was almost simultaneously initiated at Brown according to a projected regrouping in the course of study. At Brown eighteen departmental libraries were consolidated into the four major groups of physical sciences and mathematics, biological sciences, history and social studies, and humanities. Shortly after, Frank Lundy expanded the idea of divisional organization to the point of having a divisional staff responsible for acquisitions and cataloging. A number of other libraries, especially small and medium-sized ones, have also followed this type of plan.

A third type of organization is the open or interspersed plan, which came into being in the late 1940s and early 1950s. It is basically a subject organization with reader space scattered throughout the stacks with controlled exits. A library using this plan can be kept open with minimal staffing. McAnally notes that such a plan places an unusual dependence on the scheme of physical classification of books and that the library, if it is large, may be difficult for undergraduates to use. Among the libraries using this plan are Princeton, Duke, Iowa, and Oklahoma A&M.

In the late 1930s Coney reported a trend toward the unification of all acquisitions and cataloging functions under one division head. This practice has since been widely implemented in libraries of all sizes. J. R. Lund suggested, in 1940, a plan to combine certain services to readers with technical processes. Under this plan, ordering and descriptive cataloging were in one unit and subject cataloging and reference (or bibliography) service to readers in the other. A number of universities have drawn their bibliographic resources together and have placed them near the card catalog. Libraries which have adopted this plan include UCLA, Illinois, Duke, and Stanford. In cataloging, the usual bases for division of work are form of material, subject, language, level of difficulty, level of cataloging to be given, and copy cataloging. Auxiliary services such as typing, card reproduction, marking, and filing are frequently combined into a single unit to provide a pool for all cataloging functions.

In a recent essay Doralyn Hickey observed that library services are designed to move materials through the system and on to storage shelves, there to be interpreted by a group of people who have had little or nothing to do with the procedures which put the material into storage. She suggests that a fairly obvious solution to such a dilemma is to reorient the library systems around the concept of direct and effective service to the clientele. What currently exists is an orientation toward indirect service; and if any direct service is involved, it is aimed at the preservation and storage of materials rather than the solution of
users' problems. Thus the library might consider whether its services should become client centered rather than material centered. If librarians take seriously the responsibility to focus upon users' needs, they might be forced to a totally different pattern of work organization.13

DEPARTMENTALIZATION

Understandably, the degree to which departmentalization occurs is a direct function of size and complexity of operation and is usually based on function. The primary function of any library is to provide books and other materials to readers and the services necessary to make them readily available. In some small libraries, departments consist of as few as two or three staff members, but departmental status is accorded because the work is considered important or distinct enough to warrant the designation. Where departmentalization occurs, the most common services to fulfill the primary function are circulation and reference; and in small libraries these two departments are often the only service units needed. Larger libraries, of course, find it necessary to have additional service departments, often with several subunits. Secondary to the primary function, but hardly less important, are, among others, selection, acquisitions, cataloging, budgeting, and personnel management.

A survey conducted by the American Library Association in 1926 indicated that many small libraries recognized certain department heads but had no rigid departmental organization of the staff. An assistant in one department was frequently called upon for other work in another. Among the thirty-three libraries of more than 100,000 volumes surveyed, some degree of departmental organization was reported by thirty-one. Only two reported that they had no departmental distinctions at all and that all staff members were assigned to work as needed. In other libraries the number of departments varied from one to eight, with only two having fewer than three departments and nine having more than five.14 Even large libraries today rarely have more than a dozen departments, although each department may have a number of subordinate units reporting to it.

Functional arrangement, while administratively efficient and economical, has many critics because it is often difficult to effect close coordination of the various departments. One of the most frequent objections to it involves the length of the span of control, but this has been effectively met by the consolidation of technical and reader services under two assistant librarians.15 The most severe criticism of the functionally organized library and the kind of building constructed for it is their inflexibility to meet changing needs.16

DEPARTMENTAL LIBRARIES

As the central library became more crowded and the geographical spread of the campus became greater, departmental or branch libraries were a natural and necessary development. At the beginning of the century, many departmental libraries were separate from the central library and were administered and developed by the academic departments they served. According to Lawrence Thompson, the development of departmental libraries was the common pattern in most American universities in the late nineteenth and early twentieth centuries. This was especially true at several prominent institutions such as Harvard, Johns Hopkins, and the Universities of Chicago, Michigan, and Iowa.

In the period between World War I and World War II, the trend away from departmental collections became apparent and was due, in large measure, to the construction of new buildings in the 1920s and to the increasing interdependence of all branches of knowledge.17
While this kind of arrangement still exists to some extent, it is far less common today, with departmental libraries being integrated into a central system.

The early history of The Ohio State University Library saw the rapid development of the departmental collections on campus. Several decades passed before the administration realized that the cost of duplication and the lack of bibliographic control was undesirable and put them under the control of the library council. By then, however, the pattern had been set, and the lack of space in the general library led to the growth of a great number of departmental libraries. In part, these libraries were created because of the lack of a strong general collection.

Not until 1903 did the trustees place all departmental collections under the administrative control of the library. By 1926 there were nine official departmental libraries but still many special libraries or office collections varying greatly in size. In 1938 the thirteenth departmental library was established. According to the American Library Directory, Ohio State now has twenty-two departmental libraries, including law and medicine.

At Berkeley departmental libraries existed before 1900. They were not planned but evolved over a period of years in response to the particular needs of faculty and students. In 1881 an attempt was made to consolidate all library materials in a single building, but within a few years books were being charged out to department heads for departmental libraries. In time these collections contained books purchased with departmental funds as well as those borrowed from the general library. In 1904 the regents ruled that departmental libraries were considered part of the working equipment of the departments to which they were attached but that the funds assigned to the general library were not to be used for departmental library book purchases. Although the university librarian was empowered to make both temporary and permanent deposits of materials to the departmental libraries, these collections were under the administrative control of the department heads.

In 1913 the regents ordered that all books purchased for departmental libraries be cataloged as part of the general library and that the librarian inventory the collections each year. In 1916 only seven of approximately thirty-two departmental libraries contained over 1,000 volumes, and as many as twelve collections had fewer than 1,000 books each. When in 1917 the chemistry department requested transfer of a large number of periodical and journal files to the departmental library, the academic senate voted to approve the general policy of maintaining a comprehensive central collection of books and limiting the withdrawal of books to departmental libraries. By 1932 there were seventy-one departmental collections at Berkeley; and by the late 1930s the need to consolidate many of these collections into branch libraries was recognized. At present Berkeley has twenty-two branch and eight departmental libraries.

Centralization versus Decentralization

The question of centralization or decentralization and the problems attendant to it have probably created as much controversy as any other organizational problem in libraries. The question has been debated from all sides, but the problem seems no closer to the solution than it ever was. In an attempt to clarify the issues, Robert Miller summarized and grouped the arguments into seven categories of accessibility, cost, efficiency, adequacy, use, interrelation of subject fields, and educational significance and separated the arguments pro and con. He concluded that
centralization had the best of the arguments on a margin of four to one.

The cause of the central library was in terms of cost, interrelationships, efficiency, and educational significance. However, the arguments on efficiency and educational significance could be made to serve decentralization if the institution had the budget to afford good service for both general and separate libraries and the maintenance of a general collection of books for the correlation of the library needs of the collegiate departments. The cause for the separate library was best supported by the argument of accessibility. There were two categories for which no conclusion was drawn: those of adequacy and use of books. 22

Tauber identified three types of centralization: administrative centralization, which generally means control of a number of library units by a central officer; physical centralization of a system in which all units are located in a single building or a restricted number of locations; and operational centralization, in which certain operations are performed in a single place by one group of personnel for the various units of the system. There are various combinations of these types of centralization, depending on local conditions. 23 A number of factors complicate decentralization, such as communication, adherence to personnel standards, unevenness of collection development, dependency on separate financing, duplication of library materials, hours of opening, and varying regulations for circulation and use.

Harvard is the most highly decentralized system of all American academic libraries, and the separate units enjoy more autonomy than is generally the custom. The library system comprises some ninety units which are coordinated through the director of the university library, whose relationship to libraries other than Harvard College Library is that of influential counselor rather than direct administrator. The librarians of the decentralized units maintain relationships with the director, but their primary lines of authority are to the deans, department chairpersons, or directors of institutions. The director of the university library is a member of all of the administrative committees of the other libraries, and this permits effective participation in the affairs of those libraries. There are many informal contacts between the staffs of the various libraries as well. The most important single means of communication among all units is the Harvard Librarian, which provides information on personnel, collections, and matters of common interest.

The importance of coordination within the Harvard system was emphasized by the corporation when in 1959 it was voted that before any significant new library operations were begun, the matter should be discussed with the director of the university library and that the director should be notified when discontinuation of any library collection was proposed. In a symposium on centralization and decentralization held in 1960, Douglas Bryant enumerated many advantages to Harvard's decentralized system and concluded that the policy of coordinated decentralization, like walking a tightrope, required constant alertness; there must be continuous adjustments if balance is to be maintained. 24

Cornell presents a unique situation in that its libraries combine those of a private institution with those operated as contract colleges of the State University of New York. The colleges of Cornell receive support from a variety of sources, and this necessarily affects the administration of the library system. Although Cornell receives funding from various sources, it has moved toward centralized administration of the libraries and has consolidated in one
budget the library support for all the endowed divisions of the university except for the medical school located in New York City, which is operated as a completely separate division. A single budget for the state-supported colleges, however, has not been effected since that would remove library support from the concern of the several deans, and it is felt that this might have an adverse affect on support.25

**Undergraduate Libraries**

Although the idea of a special library for undergraduates was not new even when Harvard's Lamont Library was built in 1949, Lamont is generally credited with being the first separate library in a large institution dedicated to serving undergraduates. The next undergraduate library in a major institution was opened at Michigan in 1958.

These two libraries served as models for the many undergraduate libraries established in the 1960s and early 1970s designed to provide specialized library support for the undergraduate curriculum. These separate facilities were provided to relieve the pressure on the overcrowded main libraries and to give the undergraduate student an opportunity for enrichment in a less forbidding atmosphere than the complicated large research library.

Two of the largest libraries, Chicago and Princeton, however, do not have separate facilities for undergraduates. Chicago had a separate undergraduate library in 1931 but abandoned it in 1942. Chicago's Stanley Gwynn called the establishment of undergraduate libraries "departmentalization by age group."26

Louis Shores views the development of undergraduate libraries as a trend to place more responsibility for acquiring an education on the students and less upon the faculty. He credits the undergraduate library with being the first tangible evidence of an educational break-through in universities with the potential far beyond the simple purpose of providing assigned course readings and optional enrichment materials. Its real strength lies in the provision for individual differences, the balance of overspecialization, and the creation of a true learning climate. The generalist librarian is in the best position to stand guard over the undergraduate's true liberal education.27

Gwynn and Dix opposed the establishment of separate undergraduate libraries at Chicago and Princeton, feeling that undergraduates were better served by learning to use the whole library.28, 29 Frederick Wagman made a strong case for the undergraduate library on the grounds that providing adequate physical facilities could be solved more efficiently and economically by a separate library and that the role of the library and the librarian in the education of the undergraduate student was enhanced in such an environment.30 Arguments in favor of the separate undergraduate library were apparently persuasive, judging from the number of such libraries constructed during the 1950s and 1960s.

Most undergraduate libraries are open-stack collections and duplicate titles found in other libraries on campus. Services offered follow traditional patterns with the addition of certain specialized facilities such as audio rooms and computerized carrels. Reference assistance is frequently geared to helping students locate materials and guiding them as they progress rather than to directing them to sources and assuming they will find the needed information.

**Special Collections**

In most libraries certain types of materials are segregated into special collections housed separately from the general collections to provide maximum security or other special treatment. Such collections most commonly include rare
books, manuscripts, archival materials, maps, and other nonbook items. Collections gathered by private collectors and donated to the library are often retained in special collections to attract scholars to the campus or to encourage similar donations by other collectors.

Special collections are almost always staffed by experts in the given area who can assist researchers in the use and interpretation of these materials. The development of specialized subject or rare book collections in academic libraries is of considerable historical importance, since these collections have served to strengthen the library and to increase the prestige of the institution.

The introduction of area studies programs following World War II caused the establishment of a new kind of special collection to deal with materials in exotic languages. Although a few collections, especially in Chinese and Japanese, existed before this time, it was not until the Public Law-480 programs were instituted that such collections became fairly common in research libraries. Since the materials in these vernacular collections were in languages not generally known by librarians, special staffs to deal with them had to be assembled, and these staffs were usually required to handle all aspects of developing the collections from acquisition and cataloging to reference.

Materials requiring special bibliographic control or those needing equipment for use are also often segregated into special collections. Microforms, phonorecords or tapes, computer tapes, and videotapes are types of materials frequently so segregated. Staff must be specially trained in handling both materials and equipment.

**Staff Organization**

One of the most significant developments affecting library organization and management in recent years is the increase of advisory committees and staff participation in the decision-making process to promote cooperation, to provide advice, and to develop middle management expertise. In many libraries bureaucratic organization is being replaced by a collegial system. Bureaucratic organizations tend to produce conformity and generally stifle creativity. Participative systems, on the other hand, generally produce staffs which are not only more interested in the whole library and are more productive, but also staffs which are more flexible and more readily adaptable to change.

There are differences between participative management, committee consultation, delegation, self-governance, and other forms of staff involvement. The basic distinction is between involvement in an administrative-hierarchical model and a more democratically oriented collegial system. The impact of a collegial governance is beginning to have far-reaching effects, and the results are sometimes mixed. For some librarians it has meant accelerated advancement, while for others it has caused professional dislocation. The focus of collegial activity is a reorientation toward the needs of library users bringing library service back to its proper source, the user.31

**Scientific Management**

By the 1950s considerable attention was being directed toward scientific management. The January 1954 issue of *Library Trends*92 was devoted entirely to this subject, monographs such as Dougherty and Heinritz58 applied scientific management to libraries, and in 1971 the Graduate Library School of the University of Chicago held a conference on operations research in libraries.94 Citations on this subject are now frequent in the literature.

In the introduction to the *Library Trends* issue, Ralph Shaw quoted a statement which defines scientific management as a concept in mental attitude
toward achievement. It exercises a basic systematic technique for discovering and establishing objectives, plans, standards, methods, schedules, and controls of an enterprise. It exemplifies the best use of human and material energy. Shaw went on to say that, stated in its most fundamental terms, scientific management is really little more than organized common sense. As is true of the scientific method itself, it follows the dictum that man’s judgment can be no better than the information upon which that judgment is based. It seeks, therefore, to establish the facts of any given situation, taking into consideration all of the factors which must or should influence opinion. It uses careful methodology to make certain that the facts are a reliable sample of the pertinent data, and then, wherever feasible, wherever the facts deduced are conclusive, it follows them to their logical conclusions. Although scientific management uses mechanical and statistical methods and measures in planning, it is not a mechanical process. Rarely—except where procedures and systems are paced by machines, which is almost never the case in libraries or offices—can the judgment resulting from the fact finding be completely objective. So, at best, the method provides a firmer base for conclusions, and the basis for determining, both in advance and after an alteration has been made, whether or not a change is an improvement.

**Management Planning**

Advanced planning is necessary to the achievement of library goals and to the effective use of personnel. Faced with continued great change, dwindling funds coupled with a high rate of inflation and with exponential increases in the number of publications of all types, and with demands for more service both in kind and depth, librarians in the 1970s placed renewed emphasis on planning. The evolution of the library from a passive to an active organization which is more directly involved in the educational process has had considerable influence on the organization of public service units in particular. Management has also come to recognize that staff has a vital role to play in the realization of library goals and the success of library programs.

Yavarkovsky compares recent attitudinal changes in librarianship with commercial and industrial environmental changes of the past twenty years. While corporations are motivated by profit, libraries attempt to maximize service. Planning reduces the risks of lost service opportunities, wasted or misdirected resources, and diminished access to resources. He points out that the greatest potential return in planning is in the areas of highest cost such as collection development, technical processing, and stack operations and that these areas are frequently overlooked in planning efforts that emphasize new or added services and facilities.

Although once a function limited to top management, the involvement of staff at all levels in the planning process has become the accepted norm. Not only does such involvement assure greater cooperation of the staff in the implementation of changes; but it also stimulates creativity, increases commitment to the library, and promotes better working relationships among all levels of staff.

A number of libraries have recently undertaken major planning studies which have resulted, in many cases, in massive reorganization. In 1969-70 Columbia made a preliminary investigation of problems in university library management. As a result of the findings of this investigation, the Association of Research Libraries (ARL) sponsored a case study at the Columbia University Libraries with the cooperation of the American Council on Education and the
Council of Library Resources. The study team included representatives of Booz, Allen, and Hamilton, Inc., and the University Library Management Studies Office of ARL. The study resulted in a significant restructuring of the organization and in the implementation of a planning process for evolutionary change.87

In 1970, with a grant from the Council on Library Resources, Cornell entered into a contract with the American Management Association to undertake a long-range planning project. The overall goal of the project was to develop an effective and unified planning team in addition to a meaningful long-range plan. Project documents provide considerable insight into the organization. Participative management by all levels of staff was an important factor in the planning. At the end of that project, the planning team was replaced by a smaller planning council to continue the planning process.88

More than twenty libraries have participated in the Management Review and Analysis Program (MRAP), sponsored by the Association of Research Libraries, which is designed to guide the systematic internal review of management functions. The program involves a liaison with study teams of other libraries, emphasis on staff involvement, and the use of a comprehensive structured and problem-oriented manual.

The Management Review and Analysis Program came into being as a result of the conviction that research libraries needed to develop more effective ways of coping with organizational problems. While MRAP focuses on management issues, the key aspects in major successes of the program relate to the management skills and techniques developed in addressing these issues. MRAP examines the operational decision-making process and assesses organizational changes that are needed to improve the day-to-day requirements of library operations. At the same time the program raises some questions concerning major long-range decisions for change which involve significant commitment in reorganization of library resources.

In this process of reviewing analysis, librarians learn some of the intricacies in decision making and gain insight into refining and improving management.89 This program has resulted in a considerable change in the libraries using it. A similar program for small and medium-sized libraries is under development at the University of North Carolina at Charlotte.

**AUTOMATION AND NETWORKS**

The application of computerized systems to library processes has had a major impact on organization. By the late 1960s a great many libraries had implemented automated systems for acquisitions and circulation. The introduction of machine-readable cataloging (MARC) in 1966 was responsible for major change in technical processing operations, and the widespread development of network systems in the 1970s resulted in a massive reorganization of many technical services departments.

Some libraries added computer or systems specialists to their staffs to develop automated programs, while others retained existing staffs who were experienced in working with technical aspects of the library operations to design and implement the new systems. With the increased availability of cataloging copy, it became possible to assign a much larger proportion of the routine processing to paraprofessionals, leaving professional librarians free to do the more difficult original cataloging or for other assignments.

Information storage and retrieval systems are having a significant effect on public service operations as well. In ad-
dition to using the bibliographic data bases of the networks for public services purposes, a number of libraries provide access to indexing and abstracting data banks produced by societies and governmental agencies through specially trained subject specialists.

On a very limited scale, computers are also used for management purposes in academic libraries. Mathematical models and computer simulation techniques are used to measure physical situations. Such research has been reported at Purdue, Chicago, and UCLA. The computer makes it possible to use a model for testing a hypothesis in compressed time. A director can exercise the model on the computer, observe the consequences of a decision, alter the strategy accordingly and repeat the process until the desired results are obtained.40

**Organizational Conflict**

Although a certain amount of conflict in any organization can be attributed to personality differences, it has long been recognized that organization itself can also contribute to disharmony. One of the most frequent causes of conflict is the failure to recognize common goals or the subordination of the primary goal of getting books to readers to the secondary goal of acquiring and processing them. Librarians have traditionally placed great emphasis on the organization of library materials, and certainly no less attention should be given to the organization of the staff.

Library organization creates tension with its professional and nonprofessional staffs in which parts of the staff sometimes feel less than full-fledged members, even though no library could operate effectively without the very valuable and very significant contribution they make.

The greatest conflict is most frequently between public and technical service staffs on a departmental level. On the personal level, clashes frequently occur between the specialist and nonspecialist, the established staff and the beginner, and between those with territory to protect and those who seek change.

To meet changing demands, libraries will have to find new ways to resolve conflict and to establish new relationships between individuals and groups. Involvement of the staff in setting goals and establishing priorities creates a climate in which the individual frequently makes a greater commitment to the achievement of those goals and priorities. Under such conditions, conflict is generally considerably reduced.

**Future Organization**

Recent trends in higher education and the economic crisis of the 1970s have had serious implications for library management, and organizational structure will have to be adapted to provide expanded and more specialized services. As libraries grow in complexity, greater language expertise, subject specialization, and knowledge of the systems and methods of information access, storage, and retrieval will be needed; and the organization must be flexible enough to accommodate these changing needs.

Continued growth and tighter funding will underscore the need for more thorough planning to make the most effective use of both physical and human resources. To compensate for increased personnel costs, new ways will have to be found to increase the efficiency and productivity of the staff wherever possible. The increased application of automated systems will permit the reassignment of staff from work connected with acquiring and processing materials to work directed toward assisting the user. Planning must be action oriented, and the organization created by it must be flexible enough to shift with changes in the institution or to accommodate needs that cannot be anticipated.
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ON OUR COVER

Williams College’s Stetson Hall, in the tradition of the classic American college library building, is a red brick Georgian structure. Although this colonial style failed to satisfy the nineteenth century’s preference for ornate decoration and complex design, its simplicity and grace had regained favor by the time Williams constructed its new library. Planned by the librarian, Christine Price, the building was designed by the architectural firm of Cram and Ferguson. The four-story structure, 128 by 104 feet, has the unusual feature of two designedly separate fronts intended to reflect in the exterior the two major separate collections of the college, the college library itself and the rich Chapin Library of rare books and manuscripts.

Constructed at a cost of $750,000, the building was planned to house 220,000 volumes, about twice the size of the collection in January 1923 when it was opened for use by the 650 students and sixty-five faculty members. By that time, Christine Price had been succeeded as librarian by W. N. C. Carlton. An addition in 1957, also designed by Cram and Ferguson, provided expanded stack space that enabled the building to serve until August 1975, when the new Sawyer Library was completed. Stetson Hall will continue to house the Chapin Library, the Williamsiana Collection, manuscripts, and special collections, as well as offices and other facilities particularly to serve the faculty.—W. L. Williamson, Professor, University of Wisconsin-Madison.

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Events of the period from 1876 to the present have largely determined the character of the academic and research library as we know it today. A century ago the typical academic library was a miscellaneous assortment of books, primarily gifts, few in number, poorly housed, and scarcely used. In his contribution to this series Holley assessed the status of academic libraries in 1876:

In 1876 there were 356 colleges and universities in the United States. They had 25,647 collegiate and 597 graduate students taught by 3,352 instructors. These colleges also enrolled an additional 28,128 students and employed 568 instructors in their preparatory schools. Students and faculty members had some kind of access to 1,879,103 volumes in their college libraries plus an additional 425,458 volumes in various society libraries.¹

The Digest of Education Statistics 1975 Edition indicates that in 1972-73 there were 2,908 institutions of higher education (presumably with libraries) serving a student population of 9,298,000. There were a total of 406,790,000 volumes in these libraries with an annual rate of growth of 25,095,000 volumes. The library staff numbered 53,876 persons, of whom nearly 50 percent were professional librarians. Total operating expenditures amounted to $866,838,000 annually.²

The remarkable growth and transformation of higher education since 1876 may be attributed to a wide range of factors. Perhaps the most significant change was in the nature of society itself. The transition from an agrarian to a highly developed industrialized society created many new occupations requiring substantial formal training. The academic curriculum, which had for many years been classical and elitist in character, gradually became hospitable to a broad range of functions. At the same time the population of the U.S. increased more than fivefold between 1869 and 1972, but the college-age population attending institutions of higher education increased from 1.68 per 100 population to 51.52.³

Of even greater significance to library development was the increased emphasis on research which accompanied the expansion in scope of curriculum offerings. The emergence of the German-style research university, exemplified by the founding of Johns Hopkins in 1876, marked the convergence of forces
prevalent in higher education to institutionalize research within the university.

This move led to the pursuit of knowledge for its own sake, higher standards of scholarship, and acceptance of the responsibility for dissemination of knowledge. In turn, universities began to accumulate the resources required to support serious intellectual endeavor: trained researchers, able students, sophisticated laboratories and equipment, collections of artifacts and specimens, and comprehensive library collections. By the beginning of the twentieth century the university had become a major sponsor for organized research.4

Of interest here is the rapid development of significant research resources by the major university libraries, quickly overcoming the lead of scholarly societies and institutes. One century later fifty or more academic research libraries would individually equal or surpass the combined library resources available to the scholar in 1876.

Of equal significance to academic libraries was a parallel revolution taking place in instructional philosophy and methods. Brubacher describes the pattern of instruction derived from the English college, which persisted in this country through much of the nineteenth century, in these terms:

The two most popular methods of instructing during class periods were the recitation and the lecture. Although more popular in the seventeenth and eighteenth centuries, the recitation methods gradually yielded ground to the lecture method, especially in the nineteenth century. The heart of the recitation consisted in an exchange between the tutor and the student, the tutor citing and the student reciting. The citation was usually an assignment in a textbook, but might just as well be a previous lecture or demonstration. In the recitation the student learned his lesson, at least the portion for which he was called in class.5

Curricular reform came in the form of expanded course offerings, an elective system allowing free choice of programs on the basis of interest, problem-oriented instruction, and other pedagogical techniques. The significance of these reforms to the library was that instruction was centered upon student interests, the student assumed a larger share of responsibility in the instructional process, and problem-solving skills acquired an importance equal to or greater than the acquisition of information itself.

The library as an instrument for instruction and research emerged as a sufficient body of information, in active use, required systematic acquisition, organization, and the guidance of a professional staff.

The status of the academic library in 1876 has been comprehensively treated by Holley, Carlton, and others.6,7 Changes in educational philosophy and methods as related to libraries have been described by Brubacher and Rudolph.8,9

The purpose of this paper is to trace the major trends in service to readers in academic libraries during the past century.

In a sense one could state that the academic librarian in the period since 1876 has consistently promoted greater access to informational materials. Consequently, it is essential to examine thinking relating to library resources and facilities in addition to direct personal assistance to readers to understand current concepts of public services. For purposes of discussion, several periods are identified which represent an approximate emphasis in chronological sequence; these are: (1) accumulation of materials, (2) organization of resources, (3) personal assistance to readers, (4) organization patterns, and (5) physical facilities.

Accumulation of Materials
As Holley and Carlton indicated, the
college in 1876 was remarkably similar to its colonial counterpart, and little change in function, curriculum, or instructional method occurred until the latter part of the nineteenth century.\textsuperscript{10, 11} Since 1876 the growth and development of academic institutions have been rapid, and the library has shared in this transformation.

In a study of a selected group of colleges and university librarians undertaken in 1924 for the Association of American Universities, Works indicated that between 1900 and 1925 student enrollments increased from 175.3 percent at Vasser to over 1,300 percent at Oregon with a 400 percent increase typical of the group. Noting that book collections had grown at approximately the same rate as the student body, Works was nonetheless concerned whether the library was equal to its new responsibilities. He cited the increased body of knowledge, new methods for creating and imparting knowledge, changes in instructional methods, and the emphasis on graduate instruction and research as contributing factors to the increased responsibility of libraries.\textsuperscript{12}

Although comprehensive statistics for academic libraries were to appear later in more consistent form, there is ample evidence to indicate that the expansion of collections began about the turn of the century and has continued almost unabated until the present time. In 1973 Baumol and Marcus described the accelerating growth pattern of the 1950s and 1960s.\textsuperscript{13}

It seems clear that an initial response of librarians to their increased responsibility was the rapid accumulation of informational resources. Some concept of the variety of materials which this entailed for a research library is revealed in the following quote from Downs:

These, then—the separately printed books, serials, government publica-

\begin{quote}

The preoccupation, perhaps even insecurity, of librarians with collection development is reflected not only in academic library growth patterns but in continued efforts to attain comprehensive coverage through intrainstitutional cooperation and national programs such as the Farmington Plan and the National Program for Acquisitions and Cataloging.

While the major universities were suffering from embarrassment of riches, conditions in many college libraries were the opposite. Randall undertook an assessment of college libraries for the Carnegie Corporation in the early 1930s and discovered that

\ldots more than one-third of the number studied (205) spend less than $5,000 per year on their libraries; and that almost another third spend between $5,000 and $10,000, leaving less than one-third (59) which spend more than $10,000 per year. The average expenditure, in round numbers,
is $9,100 per year. One hundred and thirty-one of these libraries spend less. This is roughly two-thirds of the total number. 15

Randall cautioned against drawing too literal an interpretation of the statistical data and enumerated a number of variables which would account for variations from one institution to another. Nonetheless, he was struck by the variability of the data. He concluded:

It appears to the writer that the most significant single factor in these data regarding the financial aspects of college libraries is their range. This range in expenditures for various purposes indicates, if not a lack of uniformity in purpose, at least a lack of uniformity in method. In other words, however well the theoretical function of the college library may be realized and understood in the various colleges in this group, the methods employed in carrying out the function differ widely. It appears evident, admitting that we know well what college libraries should do, that the methods of doing furnish a fruitful field for study and thought. 16

Randall's response to the problem of disparity of method was to attempt the formulation of standards for college librarians 17 and to be prescriptive in statements about college library practice. 18 It is of interest to note that this kind of response has been characteristic of librarians as the profession has emerged: first the accumulation of resources for service followed by an attempt to assess whether libraries were responding adequately to the changes occurring within the institution and finally an attempt to codify an acceptable level of practice in the form of standards.

Ruggles, reviewing the status of college libraries in 1968, noted that:

A large number of undergraduate libraries in the U.S. lack sufficient scope and depth to provide adequate support of the instructional programs of their institutions. The average number of volumes in the top 60 junior colleges in the nation was 26,620 in 1964 (the latest year for which detailed statistics are available), while the average collection of all (colleges) was 79,250, the median 54,100 and the lowest 80 collections averaged 24,625. ... In 1962/63 73% of 4-year college libraries and 91% of 2-year junior college libraries fell below ALA (American Library Association) minimum standards for size of collections. 19

The response of the library profession to this situation has been to revise the standards for two-year colleges and four-year colleges and to attempt to make a more convincing case for increased support. 20, 21

Organization of Resources

The rapid growth of library collections and their conscious use as an instructional resource in the latter part of the nineteenth century produced an immediate response from librarians. It was obvious that as collections grew in size devices were needed to provide efficient access to available resources. Readers needed to know not only whether a collection held certain titles but where they could be located. Later it became important to identify available resources by subject.

These needs were met in a variety of ways. Although there is no careful study of the causal relationship between specific events, it seems reasonable to hypothesize that as librarians attempted to resolve problems of bibliographic and physical access to growing collections, a number of responses occurred.

First, the librarian would attempt to respond to readers’ needs empirically by ad hoc techniques. (The ministration to individual requirements has been a carefully guarded prerogative of the professional librarian even in the face of standardization and mechanization.) The need to share information about
problems and hypothetical situations led to formal organization as a profession, and the founding of the American Library Association in 1876 would seem to indicate something about technical needs and the status of libraries at that time.

A second response which seemed to emerge was the codification of best practice as a professional association surveyed current practice and evaluated alternative approaches. Sometimes the "best practice" emerged almost as the product of a single person but later became a team effort through continued professional association. A further development was the emergence of training agencies to disseminate information about typical problems and current "best practices."

It seems logical that library schools began to emerge toward the close of the nineteenth century and the beginning of the twentieth century as libraries were beginning a period of rapid expansion. A further bit of evidence which lends credence to this hypothesis is the simultaneous emergence of bibliographic guides and texts on various aspects of library practice during the early part of this century.

The pressure to accumulate resources and to organize collections for use seemed so compelling that librarians became overly preoccupied with the technical aspects of librarianship and neglected direct contact with readers. Rothstein has documented thoroughly the slow emergence of reference service. Librarians seemed to feel that if bibliographic tools were provided and materials were efficiently arranged, readers could serve themselves. It is of interest that many standard reference tools emerged during the early part of the twentieth century, reflecting the reliance on indirect approaches to service to readers.

The initial preoccupation of librarians with techniques is summarized by Branscomb in these terms:

As stated above, the last several decades have been for libraries a period characterized primarily by the acquisition of materials. Libraries have doubled and quadrupled in size. This accumulation created acute problems of organization of the materials secured. How should these books be grouped on the shelves? How should they be cataloged? Inevitably, the technical problems dominated the attention of librarians. One who doubts this need only look over the program of professional library meetings or leaf through the pages of the professional journals. To be good librarians those who held that title had first of all to be efficient technicians. Circumstances made it almost inevitable that they would be concerned with books rather than with students. It is easily understandable that some of the larger problems of the college problems closely related to the task of teaching, should have been left largely to the attention of others.

**Personal Assistance to Readers**

As the previous discussion indicates, academic librarians believed that in systematically acquiring resources for instruction and research and in cataloging and classifying these resources thoroughly, they were discharging their responsibilities in serving readers. The notion of providing direct personal assistance to readers was not immediately self-evident. In fact it was stoutly resisted on many quarters as impractical and emerged only gradually. Rothstein describes the initial stages of what came to be known as reference service in this manner:

... the history of reference services could show a number of important steps already taken. The first step had been the statement of the desirability of personal assistance, reflected in practice by the willingness to offer guidance to individual readers, though this help was rather casual and intermittent. The next stage was distinguished by the recognition of a felt
need for a program of personal assistance, if only to supplement the other means of meeting the needs of readers. More and more libraries were then offering personal help as a useful adjunct to the other “aids to readers.” With the growing concern over the library’s role as an educational institution, personal assistance came to be seen, not as peripheral, but as central in the library’s responsibilities, a service which would require personnel with special training and expressly assigned to the task of interpreting the library’s resources. As personal assistance came to be recognized as an important feature of library service, it acquired a distinctive name—“reference work”—and departmental status.26

Even with the acceptance of the need for reference service, there was no consensus on what functions were appropriate for the academic library to offer. As described by Rothstein, “interpreting the catalog to the presumably befuddled reader became the most common task of the reference librarian”; and even here the service was reserved for the uninitiated.27

Poole saw a much more direct relationship between the library and the instructional program as expressed in a paper entitled “The University Library and the University Curriculum”:

I wished to show that the study of bibliography and of the scientific methods of using books should have an assured place in the university curriculum; that a wise and professional bibliographer should be a member of the faculty and have a part in training all the students; that the library should be his classroom; and that all who go forth into the world as graduates should have such an intelligent and practical knowledge of books as will aid them in their studies through life, and the use of books be to them a perpetual delight and refreshment. Books are wiser than any professor and all the faculty; and they can be made to give up much of their wisdom to the student who knows where to go for it, and how to extract it.28

Another half century or more was to pass before Poole’s ideas were to receive a serious hearing. Even under the current rubric of the library college movement, the concept is preached more than practiced.

Rothstein identifies three philosophies of reference service which emerged with the development of reference service and which are still prevalent today. These are: (1) the conservative approach, which limited the reference librarian to teaching readers to be self-sufficient in using the library; (2) the moderate position, which was characterized as “a compromise between guidance and full information service, between a laudable desire to be of maximum assistance in important investigations and realistic reservations about the ability of the library to do so”; and (3) the liberal theory, which promoted “full and direct supply of reliable information,” differentiated between levels of inquiry, and guaranteed the “authenticity and relevance of the information it supplied.”29

Most academic library policies which emerged were based on empirical data derived from the experience of practicing librarians. Service policies which gained currency were those which met a demonstrated need and which could be supported, and there was always a wide range in the quantity and quality of services rendered whether argued on economic or philosophical grounds.

In his survey of college libraries in 1930, Randall urged a more rational approach to formulation of library policies. He stated:

If the college library is to respond to the challenge of modern higher education, its reformation must be rational. It would be exceedingly unfortunate if the decisions governing changes were ever made without the aid of reliable evidence. Too many arbitrary
judgments have been made in the past, induced, no doubt, by the exigencies of critical situations. This is not an ideal procedure.30

This dictum has been followed by librarians in the area of services to readers perhaps more than in any other aspect of librarianship. In any event it was one of the first areas for attack by the new Graduate Library School at the University of Chicago, founded in 1926, which pioneered the application of scientific methods and research in the solution of library problems. The users of libraries come under careful scrutiny to find out more about their reading habits and the factors which promote reading as a guide to definition of service to readers.

A study undertaken by Branscomb in 1937 for the Association of American Colleges posited a key question concerning college libraries and proceeded to answer the question by drawing on studies of reading previously conducted at the Graduate Library School and adding other original data. After describing the rapid growth of academic libraries from 1900 to the late 1930s, Branscomb stated that:

The problem of the college libraries can be stated very simply. It is that of securing a sufficient use of these enlarged resources to justify the investment that has been and is being put into them. To this problem neither librarians nor college faculties for the most part have given a great deal of attention. In the developments of the last 25 years more emphasis has been placed on the acquisition and preservation of library materials than upon their use. The means have absorbed more attention than the ends. The libraries have expanded greatly, but the use of them by the undergraduates, on whose account primarily they were acquired, is in most institutions as will be shown later, distinctly disconcerting. This central problem has several aspects depending upon the point of view from which it is considered.31

The work of Branscomb was not only novel in the questions it raised but also in its approach to answering them. After documenting the disparity between resources available in college libraries and their limited use for instructional purposes, he advocated the development of a distinctive program for the college library based on its role in the educational program of the college. This program should be formulated by an objective appraisal of the college program and not by imitation of public or university library models.

These prescriptions ran counter to the approach described earlier where "best practices" were codified and formulated into standards for application to types of libraries. Although Branscomb's study is not a model for the solution of college library problems through the application of scientific methods, it did draw extensively upon research studies, and it did question basic assumptions about library service in provocative ways.

The work of B. Lamar Johnson at Stephens College is an interesting contrast to the survey of Branscomb.32 In a seven-year study (1932-39) Stephens College undertook a program "to make the library contribute as effectively as possible to the instructional program of the college." The study describes the empirical approach to increase library utilization by carefully integrating the library into the instructional program and by increasing physical access to books.

The Stephens College approach was to be repeated twenty years later by Patricia Knapp in a more carefully controlled and documented experiment at Monteith College.33 This work was an attempt to apply the findings of a detailed study of library use at Knox College.34

The reading of college students was analyzed from every conceivable point of view by students at the Graduate Li-
brary School, and a considerable body of information was acquired to guide librarians and faculty in making the library a more useful part of the academic program. One of the better summaries of this work was prepared by Asheim for presentation at a symposium on reading on the occasion of the dedication of the undergraduate library at the University of Michigan.\(^{35}\)

The impact of these studies on reading has been a better understanding of how library policies can promote reading. Understanding of the relationship of physical access to reading has resulted in relaxation of closed-stack policies, the establishment of collections for recreational reading or of special displays, and publicity to encourage reading. Hours of access were extended, and restrictive loan policies were modified. Librarians began to appreciate alternative forms of information as purveyors of knowledge by aggressively exploiting audiovisual materials for their instructional value. In brief, the scientific analysis of reading and the factors which promote its use revolutionized thinking about methods for serving readers.

**Organizational Patterns**

The better understanding of user behavior has also had an impact on the organization of reader services. Changes in policies cited earlier helped promote access to materials; but various organizational issues arose as collections grew in scope and in variety of resources, and as the increase in user population produced greater demands for service. Reference service was gradually accepted as a legitimate function of the academic library and accorded departmental status about 1915.\(^{36}\) The increased quantity of specialized forms of material, such as documents, periodicals, maps, rare books, manuscripts, as well as foreign-language collections, led to the creation of numerous subdivisions in the larger libraries. The general tendency was to segregate materials, which were troublesome because of form, language, or other special handling problems, into separate units.\(^ {37}\)

In addition, it was deemed desirable by the more progressive promoters of reference service to develop subject specialization within a general reference department. In some cases the geographic expansion of university campuses led to the creation of separate departmental libraries particularly in the sciences. These units often developed specialized subject reference services. But branch library development was not a logical development based on an analysis of user requirements.

The university, following the German seminar approach to instruction, and the autonomy accorded to subject fields in pursuing research tended to foster a highly decentralized organizational pattern. The problem for the university library was attempting to develop some rational pattern of service based on the balancing of user requirements with economy and efficiency of administration. The arguments for centralization and decentralization were stated in definitive form by Robert Miller,\(^ {38}\) but the issue was frequently decided on political grounds.

Substantial research was devoted to analysis of user patterns in various academic disciplines.\(^ {39}\) The concern was to determine the boundaries of most-used literature on the one hand and secondly to find a more rational basis for the physical location of library resources on a university campus. Considerable understanding was gained from these studies about the date, form, and language boundaries of the active literature and the substantial differences between disciplines. A more accurate definition was also obtained about the overlap in user patterns between disciplines.

The practical application of this research was the formal provision for
storage of little-used materials in cooperative facilities such as the Midwest Inter-library Center (later the Center for Research Libraries) and in compact storage facilities or microform. The same line of reasoning has led to current planning for a more formal structuring of access to specialized resources through a national lending library or through the center of excellence concept for non-Western materials and for other unique materials.

An attempt at a rational organization of library resources according to observed interrelationships among disciplines is demonstrated in the organization of the new Joseph Regenstein Library at the University of Chicago. In this instance normal subject arrangement by classification was abandoned for subgrouping of the subjects most commonly used by major academic disciplines.

A variety of efforts have been made to organize university library collections and services along broad subject lines. The divisional plan as this approach is called was initiated in the early 1930s by Ellsworth at the University of Colorado, Van Hoesen at Brown University, and Lundy at Nebraska. The divisional plan was incorporated in the service pattern of a number of new academic library buildings following World War II.

There were a number of variations in this approach. In some instances a general reference department was retained and a number of subject reference units added. In other cases, the general reference department was abandoned or greatly reduced in scope, and the reference burden was placed on the subject divisions.

There was also an infinite variety in the relationships of collections to service units. In some cases the most-used materials (the core) were placed in the subject division and the balance of the materials kept in a central stack. Examples of this approach in the 1950s were the University of Wisconsin Library and the Michigan State University Library.

The majority of libraries seemed to prefer, or earlier experience dictated, a loose association of service points in an integrated collection kept in straight classification order. There were also instances of more complete integration of functions, such as acquisitions, cataloging, serials control, reserve books, with subject division (e.g., Nebraska, Washington State); but this pattern tended to be more costly in staff.

Another organizational pattern which gained adherents as enrollments grew was the separation of graduate and undergraduate library services. Although separate service points for undergraduates were established by Columbia and Chicago in the 1930s, a physically separate building (the Lamont Library) was erected for undergraduates by Harvard in the late 1940s, which gave this concept more prominence.

Similar development followed on a number of campuses. This trend was documented in detail by Braden. Although there may have been sound pedagogical reasons for establishing undergraduate libraries, the motivation often seemed to be a practical approach to an acute space problem. The issues treated in a symposium on undergraduate library service in 1953 still appear to be unresolved.

An approach to organization of reference service by level of function hinted at by Rothstein in his description of the liberal reference policy, has not been systematically developed. Various classes or levels of need for service are recognized, such as directional and orientation services, formal library instruction, bibliographic assistance, quick reference search, and specialized subject guidance. The development of new approaches to bibliographic searching through on-line machine-readable data.
bases is forcing a careful assessment of the value and methods for incorporating new technology into traditional reference patterns.

The general conclusion concerning organizational patterns is that although we have learned a good deal about patterns of use by different classes of readers, we are a long way from being able to resolve issues on how to organize reference service efficiently and economically on rational grounds. Value questions relating to the relationships of the library to the instructional and research program of the university weigh heavily in the decision of how much service the library should support.

**Physical Facilities**

The provision of facilities for readers has been closely related to the organizational issues previously described. Often the library building was a major limiting factor to the adoption of a new pattern of service. Library architecture tended to be dominated by architects prior to World War II and reflected little understanding of the requirements of users or operating patterns. The Cooperative Committee on Library Building Plans instituted by academic librarians in 1947 was an effort by persons interested in or in the process of planning a new building to define requirements more systematically and to learn more about architectural considerations. These discussions have evolved into the continuing library building institutes now sponsored by the Library Administration Division of the American Library Association. The accumulated knowledge derived from these discussions is reflected in the publications of ALA and monographs by Burchard et al., Ellsworth, Fussler, Metcalf, and others.45-49

The experience which has been accumulated from these discussions has led to the design and construction of functional, flexible buildings which can be more efficiently operated and to the adoption of many features for the convenience of readers. The substantial body of research on user behavior is reflected in the facilities now afforded the user of a modern academic library building. Extreme care has been given to create a comfortable, quiet, well-lighted environment for study.

Attention has been given to the need for freedom from visual distractions by creation of smaller, more isolated reading areas. Seating and other facilities reflect the variety of activities which occur in the library and the variations in taste. Secluded study carrels are provided in quantity, standard library tables are dispersed among the stacks, and lounge furniture is provided for more informal seating. Special provision is made for typing, photocopying, group study, microform reading, and use of audiovisual devices. Care has been given to relate library resources and service points to study areas.

Provision has been made for the display of materials to familiarize readers with available resources and to promote recreational reading. Full advantage has been taken of the knowledge about how to promote ease of access to resource, how to encourage use of the library, and how to serve the reader efficiently at the lowest cost. Access to library resources has become one of the least expensive services the academic library provides, and hours have been extended to 100 hours a week or more in many instances in recognition of this capability.

**Summary**

This discussion of services to readers would not be complete without some assessment of what has been accomplished in the past century and some enumeration of current trends affecting academic library service.

Expansion of the curriculum, the steady increase in enrollments, particu-
larly at the graduate level, changes in instructional methods, and emphasis on research profoundly influenced academic library development during these hundred years. The initial response to these new responsibilities was an emphasis on collection development and the development of bibliographic tools. In the late 1930s and early 1940s the increasing information about reader behavior began to influence service policies and procedures. Academic librarians were more successful in developing congenial study environments than in discovering appropriate service patterns. So much attention was given to the "inputs," the components of a library, that the products and services needed to satisfy reader requirements were not well understood.

What appears to characterize the current stage of development is the application of more rigorous methods of analysis of problems and a more critical assessment of various alternatives. We still face the need for a better understanding of the library as an instrument of instruction and research and the definition of the most efficient and effective way to meet readers' requirements.

The area of services to readers reflects as well as any aspect of librarianship the application of research in the more reasoned approach to the definition of problems and the selection of alternative solutions. Studies of the use of library resources in an academic library, attempts to cost out library functions, the determination of the break-even point in the retention of journals, ARL studies of the cost of interlibrary loans, and alternative methods of satisfying demands are all examples of a more systematic effort to research academic library problems. A review of the annual reports of the Council on Library Resources reveals the range of issues which have received systematic attention over the twenty-year life of that organization—one of the first such organizations devoted to the support of library research.

As the academic library begins a new century of service, we may anticipate a more critical assessment of the library's role, a more coordinated effort with national leadership to provide the range of resources in a timely, efficient, and economical manner and a wider range of services to support instruction and research in the twenty-first century.

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HELEN W. TUTTLE

From Cutter to Computer: Technical Services in Academic and Research Libraries, 1876-1976

TO GAIN AN IMPRESSION of the technical services in academic libraries in 1876, one can do so no more pleasantly than by reading "A Librarian's Work," an article written by John Fiske, assistant librarian of Harvard, which appeared in the October 1876 issue of the Atlantic Monthly. It's a longish essay. It takes the reader through the complete processing of a book "from the time of its delivery by the express-man to the time when it is ready for public use," pausing to discuss the whys of procedures followed and records produced in the Harvard University Library, then, as now, the largest academic library in the country.1

Today's librarian may be struck by the intimate involvement of Fiske in the details of processing, but anyone who has worked in a very small library will recognize the pattern. Indeed, it illustrates the point that the technical services carry their histories with them, as heads of small libraries continue today to do the things which the heads of the larger ones did back in 1876. The isolation of the technical services in a separate division is a function of size more than a change in attitude toward the services—first a separate unit is established to handle cataloging, then one for acquisitions, later serials, and finally all of them together as a separate division with its specialist head. The review that follows, then, consists of a look at the vanguard of growing libraries as size forced changes in practices and in organizational structure. Academic and research libraries have tended to dominate change and codification in this area of library work, as much in 1876 as in 1976.

Library heads in 1876 were not only involved in the operations of technical services; they were shaping the tools of cataloging and guiding decisions related to the technical services at a time when decisions were being made which still guide us today. It was as well, then, that they knew so precisely the functions which they were shaping. The importance of generally accepted codes for the cataloging of books was readily apparent to the 1876 leaders who met in Philadelphia, and the importance which they attached to cataloging is repeatedly made clear. Utley, in writing of the 1853 conference of librarians, states that there is little doubt that Jewett's explanation of his proposal to make a general catalog through the use of stereotype plates, a catalog which could be adapted for the use of other libraries,
was of first importance for those attending.2

When, during the 1876 conference, Lloyd Smith insisted that Melvil Dewey explain the system of cataloging and classification which he had developed at Amherst, Smith noted that the one idea of special value which he had carried away from the 1853 convention had been that of Mr. Folsom's card catalog and that he felt the most valuable idea which he might carry away from the present conference would be that of the Dewey system.3 A library committee, reporting in the mid 1940s, justifies the concern of the 1876 library leaders with the details of processing, as follows:

The organizing of books for use through cataloging and classification has perhaps received more thought and attention from librarians throughout the years since 1876 than any other phase of library work. This is as it should be because good cataloging and classification are at the root of all efficient librarianship. It is here, too, more than in any other portion of library work, that we are restrained and in varying degree held to conformance with decisions, policies and routines long since made and sometimes seriously outmoded.4

Two new publications of prime and lasting importance were available in 1876 and were discussed by those attending. They were Dewey's A Classification and Subject Index for Cataloguing and Arranging the Books and Pamphlets of a Library,5 which was the foundation of the Dewey Decimal Classification, and the "Rules for a Printed Dictionary Catalogue," by Charles Cutter, librarian of the Boston Athenaeum.6

Of the latter, Paul Dunkin has written that "A wide-ranging, creative, open mind is at work on every page of Cutter's Rules. Above all, a modern mind. Cutter did not anticipate our jargon, but he did anticipate many of the problems we describe with that jargon. Prob-

ably his is the only book of rules for cataloging which is fascinating reading." The "Rules" were not invented by Cutter; they were, rather, a drawing together of his study and observations of the experiences of other libraries and of his own in producing the Boston Athenaeum catalog, a monumental compilation of catalog records made according to the high standards acceptable to Cutter.

Cutter's name appears frequently in the records of library activities during the quarter of a century before his death in 1903, as a voice from the conference floor, as a productive committee member, and as a writer on library concerns. His counsels were sensible and showed careful analysis of library problems. In contrast to the aggressive Dewey, Cutter seems a quieter, but equally productive, librarian, the respected colleague who worked unselfishly for the good of the profession. The name of Cutter, like that of Dewey, must appear frequently in a history of library technical services, for they are its first significant codifiers and among its liveliest intelligences.

Cataloging, which required so large a portion of the librarian's time, was the first function to draw away from the chief librarian's direct participation. Fiske mentions that of twenty assistants, seventeen were occupied chiefly with cataloging,5 but that was Harvard, of course. Other academic libraries were growing more slowly. George Little's paper prepared for the international library conference held in Chicago in 1893 (generally referred to as the World's Library Congress) included the information that:

Of 450 institutions of higher learning in the United States only 200 have collections of books large enough to be ranked as college libraries. Of these 200 only a third have professional librarians. Of this third a smaller fraction are well endowed and organized.5
ALA’s survey of libraries in the U.S. during the mid-1920s revealed that among thirty-three college and university libraries of more than 100,000 volumes, thirty-one had a cataloging department, and six had a classification department in addition.\(^{10}\)

In their 1936 *Principles of College Library Administration*, Randall and Goodrich assumed order and catalog departments in a large library and in smaller libraries at least one librarian beyond the head to be primarily concerned with book acquisition and preparations.\(^{11}\) In the university libraries by this date, order and catalog departments were taken for granted.

**Emergence of the Technical Services Unit**

The technical services are as old as libraries; the technical service unit is a development of the past forty years. Donald Coney, presenting a paper to the University of Chicago library institute in 1938, is credited with the first published examination of the unit organization of the technical processes, as he labeled them.\(^{12}\) And, indeed, his references to other works do not reveal any prior discussion, as he leans on business and government for his authorities. Coney discussed briefly the alternatives of divisional versus departmental administration for the acquisition and processing functions, the decision whether to interpose a divisional head between the chief librarian and the department heads and singled out size of the operation as the most important consideration, a judgment which has not been revised.\(^{13}\)

By 1947 the technical service division was sufficiently accepted to be attacked by Raynard Swank in a presentation before the Cataloging and Classification Division during the ALA San Francisco Conference.\(^{14}\) For the 1948 Atlantic City Conference, the division sponsored a symposium on “The Technical Services Division in Libraries.”\(^{15}\) Cohen’s introduction to the symposium cited some incomplete evidence to show a trend toward such a division,\(^{16}\) but each of the five speakers tended to report experience in a single library, speaking mostly of recent developments. That librarians understood the difficulty of realizing the full value of the change is evidenced by Margaret Brown’s observation, “The success of the reorganization plan . . . depends, to a considerable extent, on the cooperation and understanding of every member of the staff. It is the habits and thinking of the staff that require reorganization as much as any procedural details. It is our habits and thinking, of course, that are the more difficult to reorganize.”\(^{17}\) Logsdon’s summary of the presentations noted that the new units ranged from “mere holding companies bringing related departments under a single administrator primarily for the purpose of reducing the span of control of the chief librarian” to “organizational units striving toward completely integrated divisions.” He favored the latter one.\(^{18}\)

Edwin Colburn argued “The Value to the Modern Library of a Technical Services Department” in the January 1950 issue of *College & Research Libraries*, and in 1952 Arthur McAnally reported the wide acceptance of the technical services divisional plan in large academic libraries.\(^{19}\) In 1954 Tauber brought out the first textbook devoted exclusively to the technical services, and in 1956, in an admirable exhibition of wisdom, the acquisition and catalog librarians voted to join in a single Resources and Technical Services Division to represent their interests in the reorganized ALA. The new division promptly replaced the earlier Serial Slants and the *Journal of Cataloging and Classification* with *Library Resources & Technical Services*, its first issue dated winter 1957.\(^{21}\) The voters seem to have convinced even *Library Litera-
ture, which had continued to use “Technical processes” as its heading until the 1958–60 cumulation when it accepted the inevitable with “Technical processes, See Technical services.”

How different the symposium presented during the 1961 Cleveland Conference was from that in 1949! A short dozen years later the topics were “A Brief History of the Technical Services in Libraries” and “The Present State and Future Development of Technical Services,” followed by two papers on the teaching of the technical services.22

For approximately the first two decades of the divisional structure of technical services, the only serious suggestion for a different alignment of functions was made, as noted above, by Swank. His 1944 article, “Subject Catalogs, Classifications, or Bibliographies?” showed his serious consideration of an old controversy.23 His paper recounted “the important critical discussions from 1876 to 1942 in which subject cataloging and classification, as contrasted with bibliography, were challenged and defended,” and it summarized the principal arguments on both sides of the question.24 Swank’s presentation during the San Francisco Conference25 separated the professional and clerical aspects of acquisitions and cataloging and laid the basis for recommending that cataloging and bibliography would be the natural partners in a unit. While agreeing strongly with the weaknesses of subject analysis as provided in libraries and its crippling cost, librarians did not take up the suggestion. But Swank’s thesis was not dead. It was to reappear under very different auspices.

Academic libraries began to use surveys in the late 1930s, seeking to improve their operations and services. Erickson identifies the 1938 survey at the University of Georgia Library as the first one cited in Library Literature which was made by outside experts.26 Shaw, in his editor’s introduction to the January 1954 Library Trends issue on “Scientific Management in Libraries,” reported “a trend toward the application of scientific management to libraries—and indeed a rapid one. Such an issue [i.e., of Library Trends] would have been quite impossible twenty years ago.”27 These trends influenced the technical services. In 1952 the Committee on Administration of the ALA Division of Cataloging and Classification began a study of technical services practices in large American libraries, resulting in the Shachtman report.28 A follow-up study was instituted by the ALA Resources and Technical Services Division in 1964, resulting in the 1967 Dougherty report.29

The Association of Research Libraries has been responsible for underlining and strengthening the interest of academic librarians in management consciousness. Its Office of University Library Management Studies, established in 1970, joined with Booz, Allen & Hamilton in a detailed investigation of the organization and staffing of the libraries of Columbia University during 1970–71.30 (Are you listening, Professor Swank?) The result was a study which analyzed the basic elements of university library service. Among the five major organizational units which it recommended were a resources group (responsible for collection development, in-depth reference service, and original cataloging) and a support group (responsible for acquisitions, all cataloging activities except original cataloging, photographic services, and fiscal and security control).31 The Columbia Libraries published a detailed description of its new organization growing out of the report, including a resources group and a technical support group.32 To other academic libraries it represents a significant experiment in progress.

John Dawson, the historian of the technical services for the 1961 symposium, reported that the announcement of
the program had brought an inquiry to
the program chairperson as to what were
to be considered the technical services
in libraries.33 The answer to that ques­tion was and still is that the specific li­
brary or situation dictates the answer,
and that’s a convenient way to leave it.
Randall tried for an answer based on
analysis and logic by considering “the
things which are done in libraries in the
attempt to give service to patrons by
means of books.”34 His efforts did not
have too much influence on the prac­
tical situation within the library. Acqui­
sitions and cataloging certainly belong,
and serials when it is created as a sepa­
rate unit. Binding tends to join, since
one of its largest responsibilities is to
bind the periodical volumes which the
serials unit has acquired, and catalog
records are involved. Tauber’s inclusion
of circulation in Technical Services in
Libraries did not result in drawing the
function under the technical services
umbrella. Other activities which are
sometimes placed in the division—pho­
tographic services, internal mail deliv­
eries, control of book funds, circulation
of current periodical issues, and auto­
mation—seem to be there only because
they lack a place elsewhere and, in a
larger library, would more properly be
gathered together in an administrative
services unit. Collection development,
once it ceased to be selection, has floated
cheerfully between the technical and
reader services, sometimes attaining the
dignity of an independent unit of its
own. For the purposes of this paper, we
shall discuss acquisitions, cataloging,
serials, and binding.

ACQUISITIONS

The acquisition operation has always
been less tied to the past than catalog­
ing. Once the title is acquired, how it
was acquired is of minimal significance.
Tracing the acquisition function through
the records of the past hundred years
shows a gradual withdrawal of the head
librarian from the acquisition operation,
a simplification of records kept to control
the procedures, and a broadening of the
kinds of materials acquired and their
sources.

Book ordering is thoroughly treated
in Fiske’s “A Librarian’s Work,” in the
early volumes of the Library Journal,
and in the U.S. Bureau of Education’s
1876 special report, Public Libraries in
the United States of America, hereafter
referred to as the 1876 Report. Changes
made by the turn of the century and
shortly thereafter were recorded in the
1896 World’s Library Congress papers;
C. W. Andrews’ 1903 article, “The Ac­
quision of Books”; a 1906 symposium
on “Methods of Book Buying”; “Some
Notes on the Principles and Practice of
Bookbuying for Libraries,” a lecture
delivered by Isabel Ely Lord before the
New York State Library School in 1906;
and in the various reports of the ALA
Committee on Bookbuying and on Re­
lations with the Book Trade, which
were faithfully reported in the Library
Journal.35-38 In 1930 the first textbook
on acquisitions appeared, Drury’s Order
Work for Libraries, followed at a great
distance by Wulfekoetter’s Acquisition
Work in 1961, and Stephen Ford’s The
Acquisition of Library Materials in
1973. These texts, supplemented by
chapters in Tauber’s Technical Services
in Libraries (1954) and such general
texts on college and university libraries
as Randall and Goodrich’s Principles of
College Library Administration (1936),
Wilson and Tauber’s The University Li­
brary (1945), the several editions of
Lyle’s The Administration of the Col­
lege Library (latest, 1974), and Rogers
and Weber’s University Library Admin­
istration (1971), permit the reader to
follow changes in the accepted acqui­sition practices of the past century.

The early writings show the head li­
brarian very much in the midst of the
order operations. Reporting to the
World’s Library Congress in 1893, Jones
expressed the opinion that “buying should be in the hands of one person, preferably the librarian.” Lord (1907) underlined the importance of the head librarian’s knowledge of the sources of books, since “a certain amount of his time and energy must be devoted to this question.” In a small library, Drury (1930) assigned the searching of orders to the librarian. Randall and Goodrich (1936) retained only the bill handling in the college librarian’s hands, leaving the rest of the order work to assistants. Lyle (1974) summed up practice for the college library today as follows:

In the small college library the librarian will handle acquisitions work in addition to his administrative and book selection duties. In the medium-sized college library he may have an acquisitions librarian or at least a clerical assistant to help him. In the large college library there will probably be an acquisitions department, headed by a librarian, and several clerical assistants in addition to part-time student help.

In the generally larger university libraries, this work had already been delegated. Peterson reported of the University of California Library at Berkeley that: “Before 1900, when the library staff numbered only a few persons and there was no formal organization into departments, the work of acquisition was carried on mainly by Librarian Rowell himself. An Order Department was established . . . in November 1902.”

Obviously, the librarian’s commitment to acquisitions is a function of size. Before 1900, the generally small collections and smaller annual book budgets made a part-time commitment to acquisitions a reasonable assignment. The involvement no doubt had some benefits for the library and its users, providing a closely coordinated total service.

This early involvement seems to have been more concerned with tight control than with saving staff time. In an appendix to his 1876 Rules, Cutter listed eight catalogs, in card, sheet, or book form, which were needed for acquisition and control of the library’s collection in addition to the public catalog. These included catalogs of accessions, books missing, duplicates to be sold, and duplicates sold or exchanged. He judged his system to be economical, pointing out that it could answer such questions as:

Has this book been proposed to the Book Committee? Has it been approved? Ordered? When? From whom? Who is responsible for the error if it turns out a duplicate? When was it received? Where is it entered in the Accessions-catalogue (that we may ascertain its price and condition)? Where was it first located?

During the 1906 symposium on “Methods of Book Buying,” one participant questioned the use of the head librarian’s time in “studying bargain lists and hunting auction sales,” when that time has so many service demands on it. However, Lord (1907) suggested keeping files for five categories of desiderata and described “the most perfect system” for keeping a record of books on order, one which involved filing in the official catalog records of books wanted, whether they were to be actively sought or only accepted as gifts.

College and University Library Problems (1927), the report of a study made by George Works for the Association of American Universities, discussed the touchy matter of speed versus economy in book acquisition. In 1946, the ALA/ACRL College and University Postwar Planning Committee recorded its suspicion that the procedures and routines of bookbuying could be simplified and recommended that every library reexamine its order routines. The age of recognition that good management is
essential had arrived. Today's acquisition librarian takes the risk that Cutter's questions cannot be answered.

Ordering Procedures

Sheet orders were the rule of the day in 1876. Poole, writing for the 1876 Report, stated as a matter of course, “Separate lists must be prepared of the American and foreign orders; and each, for convenience of consultation, should be arranged in alphabetical order under the names of authors.” Lord’s advice in 1907 on this matter sounds a bit quaint to today’s ears:

It may not be amiss to say that it is courteous and wise to consult the dealer as to the form in which he prefers orders. Not all dealers have the same methods, and if the library conforms to that of a particular dealer, the result is better service, as well as a pleasant relation.

Drury (1930) assumed an order sheet as did Randall and Goodrich (1936), and Wilson and Tauber (1945) prescribed the order letter for university libraries.

Multiple order forms are first mentioned as library forms in a 1933 article by Nelson McCombs, who reports a continuous strip of intercarboned forms developed by the New York University Library and adopted by Yale and the University of Rochester. Their spread was slow, but with the growing interest in scientific management following World War II they became more common. Library supply houses began to offer them as standard forms useful in the small operation, and large libraries found it cost effective to design multifunction fanfolds. The next and ongoing revolution in order forms began with the application of computers to the repetitive tasks of the order unit. Interestingly, it can combine multiple and list forms in its swift sophistication.

The complexity and consequent cost of the preorder search of titles recommended for acquisition is in direct ratio to the size of the library collection. For that reason it was little dealt with in the early days. Cutter (1876) described searching but made no mention of verification—the completing of the bibliographic information—and probably took it for granted. Twenty years later, Jones specified that in the Harvard procedures, “an assistant verifies and completes details of title, edition, publishers, etc., and sees if the book is already in the library or ordered.” By 1930 Drury’s textbook devoted three pages to preorder searching and two to verification, noting that the work is usually done in a large library by an assistant, in a small library by the librarian. Randall and Goodrich agree with Drury, emphasizing that “even with a fair-sized staff, the librarian will have to do much of the important work of checking book orders with the library’s catalog to avoid duplication.”

Wulfekoetter (1961) expanded the directions for bibliographic searching by discussing various categories of titles to be acquired and introduced a new element by suggesting that the searching be used as preliminary cataloging. Ford (1973) emphasized the importance of coordinating work among the technical service units so that it is not repeated, but it is clear from his discussion of precataloging that this reasonable dictum is by no means universally accepted.

Auctions

Perhaps the most startling aspect of early sources for acquiring books was the regular reliance on auctions. Poole, writing in the 1876 Report of the acquisition of out-of-print books, warned of high prices charged by secondhand dealers and recommends the use of the book auction with suitable detail:

These books are constantly appearing in the auction sales in New York and other cities. The auctioneers will send
their sale catalogues to any library which makes the request for them in season to send orders. There are responsible men who make it a business in the large cities to attend these sales and buy books, charging a commission of five per cent on the amount of the purchases, and giving the library the benefit of their experience as to prices, editions, condition of copies, etc. The books bought will be billed and shipped by the auctioneer direct to the library. As auction sales are for cash, it is necessary that prompt remittance should be made. There are a few auctioneers of such established reputation for integrity that it is safe to send orders direct to them, and they will bid honestly and charge no commissions; but as a rule, it is better to employ an agent, limiting the bids in some instances, and in others authorizing him to use his discretion. An application to any experienced librarian will give the needful information as to responsible agents in New York and elsewhere.64

Poole’s distrust of secondhand dealers of the day was shared. Jones, writing in 1896, stated, “A leading New York secondhand bookseller used to say that the secret of cataloging is to enter the same book in half a dozen different places in the same catalog in such a manner that the reader shall never discover it.”65 Jones put auction buying into perspective in terms of use. He reported a survey of 155 libraries, in which it was found that only a third used auctions, while two-thirds ordered from the offerings of secondhand dealers.66

References to auction buying as an accepted source persisted in the literature. Lord (1907) recommended auctions as a source for expensive illustrated and art books, advising that “it is not worth while to spend much time on auction catalogs for books published at a low price.”67 Drury (1930) described auction buying in his textbook, but explained that “catalogs from auction houses no longer offer the bargains of years gone by, for it does not pay the seller to list the cheaper books.”68 Wulfekoetter and Ford treated auction buying as a minor part of acquisitions, and their explanations show the situation has not changed much since 1930.69, 70

Use of Booksellers

Libraries generally bought domestic books through booksellers rather than from publishers in 1876, and this practice has persisted. The ALA Co-operation Committee referred in its 1877 report to frequent inquiries as to whether the committee would be willing to obtain books for libraries as part of its duties. The committee’s response was a firm referral to the bookseller.71 Whitmore (1906) recommended the use of a single firm, explaining that there would be little variation in prices among booksellers, the possibility of confusion in orders was reduced, there was a saving in carriage charges, and the dealer would develop a useful knowledge of the library’s needs.72 Lord (1907) affirmed the judgment, pointing out that:

There is no advantage whatever in ordering direct from the publisher, unless one needs a special book at once that one is sure of getting quicker that way. For net books, the same discount is given by a local dealer, and perhaps in ordering from the publisher the cost of transportation must be added. The scattering of bills is also a great waste of time and temper. It may be safely said that nobody orders direct from the different publishers in these days.73

Drury (1930) confirmed the practice of using publishers only under special circumstances and pointed out the pros and cons of using the local dealer versus the metropolitan jobber, strongly recommending the latter as able to give the best service and discounts.74 As befits the first textbook on order work, Drury em-
phasized formal agreements with agents relating to all aspects of the transactions. Wulfekotte's much longer treatment of agent selection confirmed the greater range of materials and sources which had gradually become available to librarians since Drury wrote, a range confirmed by Ford.

The amount of the American booksellers' discount to library customers was the burning issue of the early years, the copyright issue of the day, driving apart librarians and booksellers, natural allies in the provision of books to people. During a summer convention at Put-in-Bay in 1874, the booksellers entered into an agreement by which the discount to libraries was cut back to 20 percent. Lord brought together the history of the next three decades, beginning with the 1876 conference, which passed Poole's resolution:

Resolved. That the discrimination against libraries in the rules of the American Booksellers' Association, which forbids the trade from supplying libraries with books at a greater discount than twenty per cent, is unjust and impolitic, and is a rule which no librarian is bound to respect.

A committee appointed to deal with the publishers reported the following year that the 20 percent agreement had broken down, and free enterprise reigned until 1901. In 1901 the newly organized American Publishers' Association and American Booksellers' Association adopted the "net price rule," which fixed discounts to libraries at 10 percent for each book during the first year after publication, after which discounts could be negotiated. The ALA Committee on Relations of Libraries to the Booktrade was established in 1901, its name changed to Committee on Bookbuying in 1904. This first ALA committee on relations with the booktrade was unable to change the net price rule, but it did publish a series of bulletins helpful to librarians on the practical aspects of bookbuying. The net price rule was finally settled in 1907, when the American Publishers' Association repealed all existing rules on book prices as the result of judicial decisions against combinations in restraint of trade.

For the next several years the ALA committee worked to better relations with the booktrade, duly reporting its lack of spectacular results at the annual conferences. Today's RTSD Bookdealer-Library Relations Committee, established in its present form in 1961, and the Association of American Publishers/RTSD Joint Committee, approved by the ALA Council in 1966, have the same amiable purpose.

Acquisitions from Abroad

Advice throughout the century has referred the small library to import bookstores for the acquisition of foreign imprints, but even in 1876 the large libraries found it useful to establish relations with agencies in foreign countries. Poole (1876) advised:

As a rule, it is best to make all purchases of English books in London, and of French and German books in those countries, because better editions can there be procured, and at cheaper rates, than in this country. The binding, also, can be done in a better and more durable style abroad than in this country, and at half the cost. By the revenue laws of the United States, books for public libraries can be imported duty free.

A short history of this country's progress toward duty-free books for libraries is included in the 1876 Report and indicates the complications which clearance through customs can offer. Poole's precise reasons for shopping in Europe no longer hold, but large libraries have continued to find direct buying from the country of publication both faster and less expensive.
Collating and Accessioning

Receipt procedures have changed remarkably during the past century in relation to collating and accessioning. Both were generally accepted parts of the receipt procedure in 1876. Poole notes that new books must be collated to ascertain if they be complete copies and that no signatures be missing or transposed.

The books must then be entered in the “accession catalogue,” which is usually a folio volume with printed headings and ruled especially for the purpose. This record furnishes a perpetual history of every book that comes into the library, and gives the date, accession number, author, title, place where published, date when published, number of volumes, size, number of pages, binding, of whom procured, and cost.

Fiske, speaking to the layman in his Atlantic Monthly article, explains the library sense of “collate,” describing a pretty thorough examination:

To collate a book is simply to examine it carefully from beginning to end, to see whether every page is in its proper place and properly numbered, whether any maps or plates are missing or misplaced, whether the book is correctly lettered, or whether any leaves are so badly torn or defaced as to need replacing.

He volunteered the information that English books rarely have serious defects, while in French and German books “the grossest blunders are only too common.” Collation was discussed during the sixth session of the 1876 conference, and those who spoke to the matter showed that some daring exceptions were being made to the full collation advised. Some were already following the practice common later, that of collating only expensive books, the definition of “expensive” increasing with the years.

The accession book gave way slowly. In 1878 Harvard librarian Justin Winsor, representing the large library, advocated the shelflist for use as the accession record. A 1908 survey by the ALA Committee on Library Administration showed that the accession book was not used by the leading libraries, but that of 183 libraries of varying sizes, 162 kept an accession book, while twenty-one used other methods of accessioning. ALA’s Survey of Libraries in the United States (1927) discovered a trend away from the accession book to a less expensive substitute, with more use in smaller libraries than in larger. The Library Journal made a survey of accession and inventory practices in 1959, sending a questionnaire to 1,102 libraries of various kinds. The survey showed that most academic libraries had abandoned the accession book and kept such information only on the shelflist card or some other readily available record maintained for other purposes. At the present time probably no fair-sized academic library still maintains the accession book.

Gifts

Today’s demanding user of academic libraries is struck by the smallness of the library collections in 1876 and, perhaps worse, the fact that the great majority of the titles in the collections were obtained as gifts. Said the editors of the 1876 Report, “Few colleges have possessed funds to build up libraries on a scientific plan. Their collections consist largely of the voluntary gifts of many individuals, and hence are usually of a miscellaneous character.”

Jones (1896) reported that some libraries included want lists in their annual reports and thus attracted needed gifts. He pointed out that:

It is not necessary that all gifts be added to the library, and they should be received with the understanding that
they may be sold or exchanged if duplicates or unsuitable. It costs money to catalog and store books, and those outside the library's field should be rigidly excluded. . . . It is undesirable that gifts of miscellaneous books should be shelved by themselves. They should be distributed through the library with their respective subjects. Andrews (1903) specified the keeping of a list of books which would not be bought, but would be accepted as gifts, but expressed concern about accepting gift collections with restrictions which would seriously affect their value to the users. It was his suggestion that the librarian requesting a gift never use a printed form or send a typewritten letter, but always send an autograph letter.

Wyer's manual (1929) on The College and University Library sounded a contemporary note in this area. He urged that only those gift items be kept which "accord with a carefully worked out plan of the library's scope," and applauded those libraries with enough fortitude to decline gifts offered with "conditions attached which involve inordinate labor and cost for maintenance or administration. . . . There is a considerable class of material," he concluded, "that can be bought for less than it would cost in time, trouble, postage and follow-ups to get it free." Drury (1930) and the later writers on gifts agreed with Wyer, with a strengthening of the more independent attitude toward gifts.

Exchanges

Predictably, the exchange of duplicates among libraries, an effort to invest staff time to acquire books without financial outlay, was a topic of interest in 1876, and concern about practical ways of exchanging duplicates appeared frequently in the literature thereafter. The best use of duplicates was a topic discussed on the floor during the Philadelphia Conference. Ever the innovator, Dewey suggested then that "the best method, if it were practicable, would be to turn all duplicates into a common depository, and then contributors could draw from that source, the manager of the depository giving credit for all books sent in, and charging all drawn out." In 1896, Adolf Hepner, editor of the St. Louis Tageblatt, sent an open letter to ALA advocating the establishment of an American libraries' clearinghouse to be administered by the U.S. Commissioner of Education and to be the center for distribution to American libraries of "such books and pamphlets as are put free of charge at its disposal." Hepner envisioned the stock of the clearinghouse as coming from items published by their authors and left on their hands. Jones discussed the problem and the clearinghouse proposal but came to the conclusion that it could not be self-supporting and that "the State or National Government has hardly reached the point of undertaking this work at the expense of the taxpayers."

In 1937 the H. W. Wilson Company offered to serve as a clearinghouse designed to aid libraries in completing their fragmentary serial sets. The service operated at a loss and was withdrawn after a few months. More successful, perhaps because it was and is operated by those concerned, has been the Duplicates Exchange Union. It was formed in 1940 as a periodicals duplicate exchange, broadening its scope in 1944 to include other duplicates. The union is still active under the sponsorship of the ALA Serials Section, its membership composed of small libraries.

The old wish for a common depository to facilitate exchanges among libraries has come closest to realization with the United States Book Exchange, recently renamed the Universal Serials.
and Book Exchange. It succeeded the American Book Center for War-Devastated Libraries, organized to send publications to Europe at the end of World War II. The exchange was organized in 1948, supported by a Rockefeller Foundation grant, fees paid by participating libraries for materials obtained, and contracts with the State Department for services performed for foreign libraries. As it has had to raise fees for handling materials and as federal support for foreign libraries has ceased, the exchange has reviewed its services and sought other functions which it could fulfill.

The exchange of an institution's own publications for those of another was a well-established activity at the time of the 1876 conference. The 1876 Report includes an article by Theodore Gill on "The Smithsonian System of Exchanges," explaining its services as a medium of exchange between institutions here and in Europe. The first packages had been sent abroad in 1851, and by 1876 the institution was maintaining an impressive operation and has continued to handle shipments from government agencies and private institutions which go to exchange bureaus in other countries for distribution. New support for international exchanges came with the establishment of Unesco and the decision taken by its first general conference in 1947 to be the main center for promoting direct exchanges between institutions throughout the world. It has done just this, for academic libraries as well as others, by means of its Handbook on the International Exchange of Publications, first published in 1950, and through information appearing in its monthly Unesco Bulletin for Libraries.

Direct exchanges among libraries in this country have prospered as libraries and their institutions have published series suitable for exchange. Methods of establishing them and records which should be kept to control them have been regular parts of textbooks on acquisitions, and Erickson's study of college and university library surveys made during 1938–52 reported as the "most frequently mentioned among these recommendations [for the development of gift and exchange programs] was the need for maximum utilization of the University's publications in the development of such a program." Not many years after this study these programs began to suffer with the reduction in number of titles published by universities and the number made freely available for exchange purposes.

**Cataloging**

In the years before 1876, individuality in cataloging had been a regrettable necessity. As Holley points out in his essay on the events leading up to the 1876 conference, the librarians attending it "wanted many topics discussed, but they especially wanted to know what to do about cataloging and classification... Classification was far from narrowing down to two basic schemes nor was there anything like agreement on cataloging rules." That general agreement was needed was clearly recognized. As James G. Barnwell of the Philadelphia Mercantile Library put it to the conference on the opening day, "I think it is of the first importance... that a code of rules be formed by a conference of bibliographers, and then adhered to with the most servility; for entire uniformity, next to accuracy of description, is the most essential element of a useful catalogue."

The 1876 Report formed a solid background to the proceedings. During the morning session on October 5, Secretary Dewey announced that Warren, one of the two editors of the Report, had arrived from Washington, after travelling all night, in order to supply copies of the Government Report on libraries for the use of the Conference. Copies were at the table and could be
used in the room. The enthusiasm with which this announcement was received showed how well the Conference appreciated the great service done the libraries of the country by this publication of the Bureau of Education, and for a short time prevented the transaction of further business.¹⁰⁵

Many of the contributors to the Report were in attendance at the conference, including Otis H. Robinson, author of “College Library Administration.” Writing of classification, he stated bluntly, “There are objections to all plans,” and warned against changing plans too lightly. “A slightly imperfect plan strictly followed is far better than two plans at once.”¹⁰⁶ There were two chapters of the Report dealing solely with cataloging, “Library Catalogues,” by Charles Cutter, and a four-part “Catalogues and Cataloguing.”¹⁰⁷, ¹⁰⁸ Part I of the latter presented “A Decimal Classification and Subject Index,” Melvil Dewey’s twenty-six-page explanation of the plan which he had developed in the Amherst College library during the previous three years, conceived by him in 1873 while he was yet an undergraduate library assistant of twenty-one.¹⁰⁹

Cutter’s thorough report on “Library Catalogues,” covering nearly a hundred pages, drew the following appraisal from one of his contemporaries:

Mr. Cutter has an elaborate and exhaustive article that would seem to cover every point that could arise. . . . He defines the conflicting systems, shows their merits and demerits, and points out the circumstances under which one is preferable to another. The tables are a monument of painstaking elaboration, furnishing not only a complete classification of the different catalogue systems, but also their comparative usefulness and general adoption, the cost of printing, the necessity of printing (rather than their use in MS.), with an additional tabulation of the printed catalogues of public libraries in the United States (and their data), to the number of one thousand and ten. Of these twelve tables four are the compiled answers to circulars sent out by Mr. Cutter in 1875 to seventy-five libraries that had lately printed catalogues. The minuteness and thoroughness distinguishing all of Mr. Cutter’s work has never had better illustration.¹¹⁰

Cutter’s article showed his commitment to the problem of the catalog and illustrated the solid foundation on which he based his writing of the “Rules for a Printed Dictionary Catalogue.” Dunkin said of the latter, “Cataloging in the United States derives from Cutter. A study of the theory and principles of American cataloging is largely a study of the theory and principles of Cutter and what we have done with them.”¹¹¹

In the years following the notable contributions of Dewey and Cutter to cataloging, as tools and standards were developed, it was largely the academic and research librarians who furnished the interest, suggestions, and experimentation; and thus it was that academic and research libraries largely took over
control of cataloging in this country and have held it since.

The nature of cataloging is such that once done, it is expensive to change. So decisions made during the past century have been important to libraries, as they have been lasting constraints to change. The distribution of LC catalog cards, begun in 1901, was itself an influence in turning codes and practice toward the large research libraries and in fixing catalog arrangement in the dictionary card form, since the LC cards were designed for such an arrangement and were tailored for the largest research library in the country.

Codes

The cataloging code, a set of rules for the guidance of catalogers in selecting and preparing entries for catalog records, is necessary to provide consistent records in a single catalog and to make cooperation in cataloging possible. For a pleasant journey through code development during the century following Cutter, the reader should see Dunkin's interpretative Cataloging U.S.A. For a broader sweep through cataloging history, Hanson and Daily's sixty-four-page, encyclopedic "Catalogs and Cataloging" provides a grid upon which to place the specialized histories.

As has been pointed out, Dunkin emphasized the importance of Cutter, and anyone reading contemporary accounts and later references back to Cutter's work comes to agree. His Rules covered all aspects of the dictionary catalog except classification. Its clear and concise statement (in fifty-nine words) of the objectives sought in providing a dictionary catalog, and the means for obtaining them, its author's stated intention to "set forth the rules in a systematic way" and "to investigate what might be called the first principles of cataloguing" bring an illumination to the subject which could not fail to have immense influence. Indeed, Hanson and Daily point out that Cutter's objectives of the catalog were restated in the so-called Paris Principles by the 1961 International Conference on Cataloguing Principles, which laid the foundation for an international catalog code.

Following the 1876 conference, ALA provided a continuing forum for the discussion of cataloging, and with the Library Journal serving as its official journal, a wide audience of librarians could be reached. In 1896 William Lane reported a survey of the state of cataloging to the World's Library Congress. He noted that of the several available codes Cutter's Rules was the one most generally followed, but his summary of points of agreement and disagreement among fifty-eight leading libraries showed continuing wide differences in cataloging practices.

The 1901 agreement between ALA and the Library of Congress that LC would begin to supply printed cards to libraries for current books focused attention on LC's rules for cataloging. This step and a 1904 invitation from the Library Association to issue a joint code resulted in the 1908 Anglo-American code, Catalog Rules; Author and Title Entries, published in both English and American editions with the few points of difference explained. This was the first international code, and it was narrower than Cutter, dropping the rules for subject headings.

The following decades of code production, mingling ALA, LC, and Library Association efforts, and including the Vatican Code, have a fascinating history but one too detailed for this survey. The period was enriched by Andrew D. Osborn's "The Crisis in Cataloging," with its appreciated cry for a return to basic principles. The next twin peaks in the process were the 1949 publication of the complementary Rules for Descriptive Cataloging in the Library of Congress; Adopted by the American Library Association, pub-
lished by LC, and the A.L.A. Catalog Rules; Author and Title Entries, second edition, published by ALA. The LC descriptive rules were greatly simplified and led to the hope that those for entry and heading might also be improved.

The steps which followed have been recently reported by Wyllis Wright, who participated prominently in them. American and English cooperation in developing a common code, which had been interrupted by World War II, was begun again. Seymour Lubetzky's Cataloging Rules and Principles, published by LC in 1953, pressed again for logic and simplicity in establishing author and title entries. He was strongly influential in the deliberations of the IFLA International Conference on Cataloguing Principles, Paris, 1961, which resulted in the Paris Principles mentioned above.

The Anglo-American Cataloging Rules, developed under the aegis of American, Canadian, and British librarians, and published in separate American and British editions in 1967, include rules governing entry and heading, descriptive cataloging of monographs and serials, and cover some non-book materials. The Rules represent compromises with the Paris Principles, compromises urged by the realities of cost and the cataloging product of the past. One hundred years after Cutter, catalogers of the three nations are working on a second edition of the Anglo-American Cataloging Rules. Whether they can make progress toward simplicity and internationalization remains to be seen.

Subject Analysis—Subject Headings

The provision of the subject approach to a library's holdings, whether made up of the subject entries in the dictionary catalog or a separate catalog, was still a subject of some disagreement during the early years of ALA's first century. By 1876 card catalogs had already been opened to the public for use, and subject entries had been based on the content of the publication rather than the earlier practice of basing them on the wording of the title. As the Librarian of Bowdoin College put it in 1893, "The subject catalog, in its development and almost universal use, is peculiarly American." During the proceedings of the English conference of 1877, with its large delegation of American librarians, Cutter took the floor to speak of the matter:

My English friends seem to consider a subject-catalogue as something very excellent, to be sure, but utopian—impracticable. With us, on the contrary, a library that has no subject-catalogue is regarded as little better than one which has none at all. As to the difficulties of classification and the liability to mistakes in dealing with subjects with which one is unacquainted (which has been rather despairingly insisted upon), in all the works upon library economy you will find that the first qualification of the librarian is universal knowledge. Of course if this requirement is fulfilled, the objection is removed, and if it is not, Carlyle's dictum may profitably be applied here: "After all, the worst catalogue is none at all," or, it is expressed in an old proverb, very worthy to be taken to heart by librarians, "Half a loaf is better than no bread."

Cutter had been involved in a discussion on the same subject outside library circles earlier in the year. Fiske's Atlantic Monthly article provoked a letter from Harvard Professor H. A. Hagen to the Nation, published in the January 18, 1877, issue. Dr. Hagen, no doubt speaking from the background of his German education, argued for the manuscript book catalog, providing only an alphabetical listing of library holdings. His main point was the great cost of the subject listing, for which he felt published bibliographies to be perfectly good substitutes. Cutter came to Fiske's
defense with a letter published in the Nation of February 8, answering Hagen on every point. In the matter of the subject catalog, he swept Hagen’s suggestion from the field:

The objections to giving up subject-catalogues in libraries and substituting bibliographies are, first, the non-existence of the bibliographies; second, the incompleteness of such bibliographies as there are; third, the fact that bibliographies “begin to be imperfect even before they are published;” and fourth, the inconveniences of using them even if complete and brought down to date.

Other librarians joined the contention, and the subject approach continued to be considered necessary, in spite of its cost, in American libraries.

Cutter provided the only American code for subject headings. In the first edition of his Rules, he stated the two objectives for the subject catalog, namely, to enable a person to find a book of which the subject is known, and to show what the library has on a given subject and in a given kind of literature.

It is interesting that so major a tool as the subject catalog has not evoked a later code. Following Cutter, there have been only lists of subject headings and attempts to “arrange inherited practice into some sort of system.” Lyle’s advice to the college library is to have both class numbers and subject headings provided by the same person and to provide as essential tools for that person the official record of the subjects used in the library and the standard published lists. The two basic published lists used in this country are the Library of Congress list, meeting the needs of research libraries, and the Sears list for smaller libraries.

The strongest ally of the catalogers in their loyalty to the subject catalog has been the reference librarian. During the fifty-sixth ALA Annual Conference, Columbia’s respected reference librarian, Isadore Mudge, rose to its defense. She characterized the catalog as the most important reference tool in the library and pointed out that “it contains almost the only reference work done in that library which is at all permanent in character.” She made clear the disadvantage of realizing savings in the cataloger’s time by reducing subject analysis and thus increasing the cost in the time of reference librarians and users.

Subject Analysis—Classification

The written evidence which we have about libraries shows that classification as we know it today had not been thought of in 1876. The use of the call number both to assign a work to its primary and fairly specific subject area and to place it on the shelves in a position relative to other titles of its class had not been conceived. Libraries with sizable collections placed them on shelves in areas assigned by broad subjects, if at all, and controlled them by fixed location. Fiske’s description of processing at Harvard suggests that not even broad subjects were assigned. Instead, the assignment of an alcove number and a shelf number within the alcove followed after collation and the recording of source information in the volume during the receipt process. Each alcove had a “shelf-catalogue.” As Fiske put it, “When the book is duly entered on this shelf-catalogue, and has its cornerpiece [i.e., label inside the front cover] marked, it is at last ready to be catalogued.”

Robinson, librarian of the University of Rochester, reported that his principle of classification for college libraries was that “the division of books should correspond on the whole to that division of the instruction which is best suited to the aims and purposes of the institution.” Certainly, this was a user-orientated plan, encouraging the teacher to examine his class of books,
watch its growth, and “add its full force to the means of instruction in his department,” while helping the student to “enter upon the use of it with very little difficulty.” To the librarian “perplexed with books which belong in no class in particular,” Robinson’s advice was “to ignore the title, examine the book in detail, and put it into that department in which it is likely to be most extensively used.” In his discussion of the arrangement of books within the library (general and reference works together, followed by the various classes), Robinson makes it clear that each subject class is assigned a specific area of shelving and that volumes are shelved and found through the assignment of class mark and shelf number.

Dewey’s *A Classification and Subject Index*, heard of before the 1876 conference, described there by Dewey on demand, and explained in the 1876 *Report*, obviously filled a need. In the 1876 *Report*, Dewey wrote with what seemed to be pleased surprise: “Though the system was devised for cataloguing and indexing purposes, it was found on trial to be very valuable for numbering and arranging books and pamphlets on the shelves.”

The Dewey/Amherst scheme was indeed a giant step forward, and the Dewey Decimal Classification went on to sweep the country, first being used for the classified catalog and later primarily as a shelf arrangement for the dictionary catalog. In spite of many other interests and activities, Dewey continued to control the development of the Decimal Classification until the end of his life, the thirteenth edition being published as a memorial edition in 1932, the year after his death. Thereafter, the Lake Placid Club Education Foundation continued to keep it up to date and to promote its use. Since 1930 an office at LC has added DDC numbers to some of the LC cards, and later the DDC editorial office was moved to LC. Today more libraries in the country use the Decimal Classification than any other scheme, as well as libraries in many countries around the world.

Although classification was the aspect of cataloging which Cutter omitted from his *Rules*, he was to make two lasting contributions to it. Cutter had been working on the problem of classification since 1873 without finding a solution which he wanted. He was attracted to the Amherst decimal plan but found that it did not give the close classification which he was seeking. Eventually, his efforts led to his Expansive Classification, a scheme in a series of schedules of increasing (i.e., expanded) fullness. The first was elementary and intended for small collections; the seventh, not yet completed when he died in 1903, was designed to be adequate for a library of ten million volumes. Just as he had provided for short-title, medium-title, and full-title dictionary catalogs to suit the needs of different libraries, so he offered classification schedules of varying degrees of fullness to fill different needs. A survey made re-
John Dewey recently showed that nine libraries in this country and three in Canada were continuing to classify the majority of their new acquisitions in the Cutter classification scheme. In connection with his Expansive Classification, Cutter devised a system of arranging individual books alphabetically by author within classes, these so-called book numbers consisting of the initial of the author’s surname followed by decimal numbers. Cutter developed tables of numbers using two figures to arrange the authors alphabetically on the shelves; Kate Sanborn later developed the Cutter-Sanborn three-figure table.

Cutter’s lasting contributions appear in the two principal classifications of today. His Cutter numbers regularly form the second element of call numbers derived from the Decimal Classification; both his Expansive Classification and his book numbers had a strong influence on the LC Classification.

The development of the Library of Congress Classification, appropriately for a national library and one which was to provide cataloging copy for many libraries throughout the country, was a team effort. Not only did several staff members work on it, but as plans emerged, they were taken to leading librarians of the country for opinions. The final decision on the general plan was made late in 1900. Development was begun immediately and is still not complete. The story of its genesis is an interesting one and can be found in LaMontagne’s American Library Classification.

During the development of the two classification systems which came to dominate the American scene, librarians were still making independent judgments about classification and developing individual systems. In spite of the first appearance nationally of the Decimal Classification in 1876, George Little reported to the World’s Library Congress in 1893 general agreement among college librarians that books should be arranged by subject but a wide difference of opinion as to the system of classification to be adopted. Horace Kephart, librarian of the St. Louis Mercantile Library, reported to the same Congress (with an admirable bibliography on classification) the results of a survey he had made on the subject, which confirmed Little’s generalizations. Kephart had sent a “circular of inquiry” to every U.S. library of 25,000 volumes or more, a mailing of 183 circulars. Of the 127 usable replies returned, it was shown that half of the libraries were using classification systems of their own and one-third were using Dewey in whole or in part. Mr. Cutter’s system (so he said!) was rapidly growing in favor.

McMullen reports that when J. C. M. Hanson left LC and joined the University of Chicago Libraries in 1910, he found half of the books not classified and the rest classified according to about fifteen different systems, the dominant system being Dewey’s. During the ALA 1911 Pasadena Conference, a symposium on classification gave equal time to the Expansive Classification (in a paper written by William Parker Cutter, a nephew of C. A. Cutter), the Decimal Classification, and the Library of Congress Classification. In 1927, Works reported that “classification presents a difficulty that is almost if not actually insuperable.” His recommendation was that each library staff study the needs of the library users and adjust the classification as far as possible to meet such needs, and he pointed out that classification needs a high quality of personnel.

In a 1975 survey of Dewey Decimal Classification use in the U.S. and Canada, Comaromi, Michael, and Bloom found that about two-thirds of the sampling of college and university libraries counted were using the LC Classification.
tion, but there was a striking difference between college and university use. Of the college libraries, forty-four employed LC and thirty-eight used Dewey. Of the university libraries, thirty-six used LC and one used Dewey. Considering only libraries holding 500,000 or more volumes, 107 reported the use of LC and only fourteen of Dewey. Seeking to assay the “Trend to LC” in college and university libraries, Robert Mowery studied 1,160 accredited four-year colleges and universities and found that more than half were using the LC system. However, counts made in 1968 and 1971 showed that the move to LC had lost momentum.

Given the past history of classification and the present lack of consensus among academic libraries, it is not surprising that today’s textbooks maintain a careful neutrality between the two prevailing systems.

Catalog Format

How did today’s traditional dictionary (as opposed to classed) card (as opposed to book) catalog become the dominant format in American libraries? Card catalogs were used in libraries for some time before they were opened to the public in 1857, when Lloyd P. Smith introduced such a tool in the Philadelphia Library Company. Four years later Ezra Abbot, assisted by Cutter, provided one for Harvard, which became a model for other libraries.

According to Ranz, the final quarter of the nineteenth century witnessed the decline of the printed book catalog in American libraries. His excellent The Printed Book Catalogue in American Libraries: 1723–1900, covering the years of the printed book catalog’s predominance, sets the stage for 1876. An example of the attitude of that time is offered by Robinson, who initiated the University of Rochester’s first card catalog, a manuscript dictionary catalog, in 1870 at a cost of $329 in labor and materials for holdings of 9,560 volumes. He did so over many objections: “It presents to the eye only one title at a time; time and patience are lost in turning over the cards; it cannot be carried about, but must be used at the library, and only one person can consult a given part of it at a time.”

In spite of objections, Robinson could report in 1876 that:

in some of the largest libraries of the country the card system has been exclusively adopted. Several of them have no intention of printing any more catalogues in book form. In others, cards are adopted for current accessions, with the expectation of printing supplements from them, from time to time. I think the tendency of the smaller libraries is to adopt the former plan, keeping a manuscript card catalogue of books as they are added, without a thought of printing.

Classed catalogs were never highly favored in the U.S. Early prevailing opinion of classed catalogs is summarized in an 1880 discussion of College Libraries as Aids of Instruction. Justin Winsor states: “For the skilled and habitual user, classed catalogues, especially those in which related subjects stand in close propinquity, may be more satisfactory; but such users are always rare.” Robinson agrees, “Classed catalogues are good for experienced readers, but for the student with little or no experience we believe every obstacle should be removed.”

The single decision which locked in the dictionary card catalog as the predominant standard was the decision by the Library of Congress to sell its printed cards. The LC printed unit cards were designed for the dictionary rather than the classed catalog, and their availability was too great an advantage to be ignored.

These and other decisions which resulted in the predominance of the dictionary card catalog were based on li-
brarians’ opinions for the most part, opinions growing out of experience and theorizing. Formal efforts to ascertain the users’ points of view and to base conclusions on facts rather than general impressions came long after the basic decisions had been made.

Krikelas’ survey of catalog use studies in 1972 lists fifty-four studies, the earliest made in 1931. Krikelas finds an increasing effectiveness of the later studies over the earlier ones but still notes difficulties in producing useful studies. He suggests that maybe the general finding that between 70 and 80 percent of all catalog searches are successful to the extent that the user is able to identify some relevant document should be interpreted to mean that librarians have been able to develop a rather sophisticated tool.159

Cooperative and Centralized Cataloging

The twin dreams of cooperative and centralized cataloging very much concerned the librarians who met in 1876. Included in the first ALA constitution was a provision for the establishment of a Co-operation Committee.160 An editorial appearing in the same issue of the American Library Journal which printed the constitution offered the opinion: “Of the standing committees, that on Co-operation will probably prove the most important organ of the Association, as most of the practical work will fall to its share or to that of its sub-committees. The Poole’s Index, Size, and Co-operative Cataloging matters, now in special hands, are only a portion of the work to be done.”161 Several months later, in the August 31 issue, Dewey wrote:

Co-operation has become among librarians a household word during the past year. . . . While we have so much with which to be satisfied, there has been less progress in what seemed the main question—co-operative cataloguing. Here the greatest need was felt, and to this most of the profession look for the greatest benefit. The September meeting [the New York Conference of 1877] will probably remove the first difficulties, by agreeing upon a code of rules by which the titles in any system shall be made. This decided, we are ready for the question, Who shall prepare the titles of new books as published? The Library of Congress or its copyright department? The publishers themselves? A cataloguing bureau, established and maintained by the libraries of the country? An individual or firm, as a commercial venture? There are arguments for and against each one of them.162

Progress was not as fast as the impetuous Dewey predicted. There were to be many steps between the dream and today’s MARC tapes. Of basic importance was the standardization of descriptive cataloging and subject analysis, if the centralized product was to be of maximum use. Once there were common cataloging practices and a central producer, distribution was the next problem, solved by LC’s card distribution service and by the printing of its catalogs and, later, the National Union Catalog. Much of the history of these efforts can be found in the early volumes of the Library Journal, and it has been summarized by Dawson and given in more detail in two master’s theses by Vivian D. Palmer and Velva J. Osborn.163–65

The product that has evolved over the past hundred years, namely, LC catalog copy, has laid more stress on centralized cataloging. However, it has included cooperative cataloging in varying degrees through the use of cataloging done by selected libraries, especially those receiving books under the Cooperative Acquisitions Program and later those participating in the Farmington Plan for the acquisition of foreign titles.166 The whole effort received a tremendous boost with the inclusion of Title IIC in the Higher Education Act of 1965. LC responded handsomely to this mandate to
acquire and catalog all currently published titles of scholarly value, as John Cronin's report to the New York ALA Conference in 1966 promised and as LC has since expanded the resulting National Program for Acquisitions and Cataloging and its Shared Cataloging Program.

Another dream of the early ALA years was that of providing cataloging copy with each new book published in this country. The editors of the 1876 Report noted a suggestion from Winsor that publishers might send with each book a card providing a bibliographical description which would be suitable to be inserted in the library catalog. During the past thirty years, the Library of Congress has taken a number of steps to make cataloging copy for domestic books more easily available, as follows:

1. In 1947, LC and the Publishers' Weekly arranged to include LC card numbers with the listings of new books in the "Weekly Record" section.
2. In 1951, publishers began to cooperate in a program to print LC card numbers in their books.
3. In 1953, the LC "All-the-Books" program was begun, a program to secure early copies of new books for early cataloging.
4. In 1958, LC undertook the Cataloging-in-Source experiment. While it failed, much to the disappointment of librarians, it provided information useful for a later try.
5. In 1961, LC began through its Cards-with-Books-Program to encourage publishers and book wholesalers to supply printed cards with the books they sold.
6. In 1971, LC started the successful and continuing Cataloging in Publication program.

In the first volume of the American Library Journal, Dewey asked: "Is it practicable for the Library of Congress to catalogue for the whole country?" A hundred years later, the answer is still not, "Yes!" but is has become "Maybe!"

SERIALS

Historically, serials have been rather on the edge of things in technical services. The librarians who gathered in Philadelphia talked a great deal about indexing periodicals, suggesting cooperative measures for updating Poole's 1853 Index to Periodical Literature, but they did not discuss the cataloging of periodicals as offering different problems from monographs. There was healthy respect for periodical literature, as they called the whole range of serials, and Spofford, who wrote in the 1876 Report on "Periodical Literature and Society Publications," dwelt on the importance of collecting and preserving complete files of such titles.

Cutter's Rules covered periodicals. He used the term without defining it in the first edition of his Rules; by 1904, in the last edition, he defined both periodical and serial. The latter, he wrote, was "a publication issued in successive parts, usually at regular intervals, and continued indefinitely," not so very different from the definition provided in the Anglo-American Cataloging Rules of 1967.

Cutter's entry rule for periodicals scarcely changed throughout his four editions. Rule number 54 in the first edition is "Periodicals are to be treated as anonymous and entered under the first word." The fourth edition adds to this the phrase "not an article or serial number." He listed four characteristics of a periodical and by means of them decreed that society memoirs, proceedings, and transactions were not periodicals. Thus, they could be entered under the name of the society, since they were the work of the society acting through its members. This issue of corporate entry versus title entry continues as a problem for serials catalogers and has been the subject of discussion with-

From Cutter to Computer / 441
out full agreement in the current project to revise the 1967 Anglo-American Cataloging Rules.

The Works study of College and University Library Problems in 1927 noted eight definitions of the term *periodical* used by academic libraries. The meaningful differences were in the categories of publications included under the various definitions and the resulting differences in treatment among libraries.\(^1\) Drury (1930), with his businesslike approach to library ordering, gave firm definitions of *serials* as the overall term for publications issued indefinitely in successive parts, *periodicals* as publications issued at regular intervals of less than a year, and *continuations* as all other serials. These differentiations provide a generally firm basis on which to set up the appropriate records for ordering and receiving titles, but are too simplistic for the requirements of cataloging.\(^1\)

Reading through the literature of the last hundred years makes it clear that, in addition to the problems of cataloging, serials offer much the same problems to the technical services which they always have—missing issues; the need to make new issues available as quickly as possible, frequent changes in title, format, and content; the increasing number of serials available for acquisition; increasing costs, and how to fit this function into the traditional acquisition/cataloging format.

Within the past quarter century, the serials identity within the technical services has become stronger with size. Andrew Osborn’s *Serial Publications*, published by ALA in 1955, gave serials librarians their first general text and an excellent one. They had already achieved their own periodical, *Serial Slants*, beginning in 1950, submerging its identity in *Library Resources & Technical Services* in 1957, when the ALA reorganization created the Resources and Technical Services Division. There has been a separate serials unit within ALA since the formation of the Round Table on Periodicals in 1926. In 1974, because of the interest of serials librarians, RTSD set up the Organization Study Committee to explore the possibility of organizing the division according to form rather than function. The committee recommended a continuation of the present sectional organization, which combines form and function.

**BINDING**

Binding was a concern of the librarians gathered in Philadelphia and was discussed on the conference floor. Winsor’s advice was sought on the advisability of maintaining a bindery in the library, and opinions were expressed about the cause of binding deterioration—was it gas lights, heat, or impure air?\(^2\) The Co-operation Committee, with Cutter as its first chairperson, reported the willingness of some publishers to furnish bindings specifically for libraries, and the committee listed the specifications it had drawn up for such a program.\(^1\)

During the 1877 conference, binding and preservation were again discussed, including treatment for water damage following a fire, the replacing of leaves by heliotyping, and the restoration of rare books. Later in the proceedings, President Justin Winsor mentioned a new material for binding books, which he had noticed in an English newspaper. He had obtained some sheets from Mr. Nicholson of the London Library and had tried them with good results. The new material? Buckram! Mr. Dewey rose to state that “it was the impression of the committee that buckram was to be the coming binding, but that a little more experience was needed before recommending it; that for the present goat instead of this buckram would have to be recommended for binding.”\(^3\) Well, it wasn’t *his* discovery.

During the English Conference in
1877, a number of papers were given on binding and labeling books, including one by the same Edward Nicholson, "On Buckram as a Binding-Material." Nicholson strongly recommended the use of buckram, finding it durable and not too expensive, and predicted that it would largely diminish binding costs.

Binding, as a separate topic, was treated by Librarian of Congress Spofford in the 1876 Report. He provided six pages of well-informed, practical advice on all aspects of the subject, emphasizing the librarian's duty to go carefully and frequently through the collection to select those volumes requiring repairs or rebinding and to arrange for all books returned to receive the same scrutiny. In Spofford's opinion, "Next to the selection and utilization of books, there is no subject more important in the administration of a public library than the binding and preservation of the volumes." Both Spofford and Winsor, as well as Poole, emphasized the importance of good workmanship and materials in binding, and the reason for maintaining a bindery in the library was the poor binding which might be expected under commercial contract. Another common opinion of the time was the better binding value to be obtained by ordering books abroad to be bound before they were supplied.

The citations of literature on the care and preservation of books in Cannons' Bibliography of Library Economy, covering 1876 through 1920, give an idea of the details discussed. In addition to the topics above, there are such subjects as: how to open a book, methods of inducing care of books, book dusting, methods of keeping books clean, and directions for mending. The World's Library Congress volume included a ten-page paper on the "Elements of Library Binding" by D. V. R. Johnston, the New York State reference librarian. He cautioned against the false economy of cheap binding, recommended binding abroad for cost and durability, warned that only larger libraries could save money by maintaining their own binderies, and, surprisingly, gave a rather negative report on buckram.

ALA set up a Bookbinding Committee in 1905, which answered the members' questions, maintained relations with publishers, worked for library binding of books commonly bought by libraries, and reported annually to the membership through the ALA Bulletin and conference proceedings. The ALA survey report in the mid-1920s included a chapter on "Binding and Repair," reporting library practice relating to what were evidently of current interest, namely, treatment of new books, dusting, inspection after circulation, washing and shellacking volumes, marking, care of leather bindings, duplication of missing pages (the usual method was to type them), collation before binding, costs, binding contracts, staffing of library binderies, sewing methods, strengthening devices, and handling of music. Buckram was definitely in as the best-wearing and best-bargain material for binding.

Works (1929) mentioned binding only as a problem of minor importance and singled out complaints of faculty relating to the inaccessibility of periodicals during the binding process. The placing of service above cost was definitely in! When the College and University Postwar Planning Committee of ALA and ACRL dealt with the "Poor Quality of Many Books," it referred to the low esteem in which the writing itself was held, particularly in the academic field. However, one paragraph was given to the problem of the future, namely, the need for preservation and duplication of fragile materials.

The early concern about shoddy commercial binding was resolved by a series of binding standards developed jointly by the Library Binding Institute, a trade association organized in 1935, and its
predecessors with the American Library Association. Even before that time, the binders were working with librarians to provide specifications for acceptable library bindings. The results are today’s binding standards, which are periodically revised.\textsuperscript{188}

In the 1960s the ALA Library Technology Project reported the results of its program on the Development of Performance Standards for Library Binding.\textsuperscript{189} The project developed standards based on performance rather than the materials and methods on which the institute’s standards are based. The difficulty of monitoring the newer standards has kept them from becoming a force.

Under the protection of standards, librarians have transferred their major concern from the quality of binding to the preservation of library materials. Programs to meet this concern are not yet history.

**THE COMPUTER**

And so we come from Cutter to the computer, from Cutter’s clear statement of what cataloging should be as a basis for uniformity of practice to the computer as a tool for implementing cooperative and centralized cataloging with all that implies for library service. The academic library director has stepped out of the workroom into the office; the technical services have been accepted as a major division of the library’s organization; acquisition records have been simplified and designed to furnish the first step in cataloging; descriptive cataloging has been codified, and classification has been reduced to two generally accepted systems; the catalog itself is a dictionary catalog, usually in card form, except for some pioneering computer-produced book catalogs; the Library of Congress is providing leadership for centralized and cooperative cataloging; serial users have accepted indexing for control of periodical literature, thus easing demands on the catalogers, which the latter could not hope to meet; and commercial binding has been standardized so that libraries can get what they pay for and can concentrate on the problems of preservation.

In the late 1930s Fremont Rider plotted the growth rate of American research libraries and found that their collections doubled every sixteen years. Taking Yale University Library as an example, he calculated that by the year 2040, Yale would have an alarming total of 200 million volumes with a card catalog occupying nearly three-quarters of a million catalog drawers spread out over not less than eight acres of floor space.\textsuperscript{190} But the computer is not easily alarmed, and by 2040, it will be able to handle such magnitude with ease. It may even store many of the texts in order to reduce the 6,000 miles of shelving which Rider calculated as needed.\textsuperscript{191}

The potential of the computer for recording catalog records, making them readily available to many libraries, and providing a record of libraries’ resources is assumed but not yet fully realized. Baumol and Marcus in 1973 saw computers moving toward greater use in academic libraries as a practical development of the future:

To date, the majority of successful data processing applications in libraries have involved mechanization of nonprofessional tasks such as circulation control and typing of bibliographic aids. At the same time, there are trends in process which may in the next two decades change the range of innovation that is economically feasible. These are: (1) the achievement of a standard format for bibliographic records in machine-readable form and the associated production at the Library of Congress and elsewhere of a sizable data base of such records; (2) a continuing sharp decrease in the cost of certain components of electronic data processing systems; (3) continuing increases in the capacity and reliability of electric communications
channels with concomitant decreases in the unit costs of the channels; and
(4) the creation of evolving modular, computer-based library systems, which take advantage of the three other changes just mentioned.\textsuperscript{192}

Based on D. R. Swanson's predictions, Hanson and Daily describe the most advanced form of the catalog of the future as a computerized catalog with eleven performance goals:

User dialogues (programmed interrogation), aids to browsing, user-indexed library, access to in-depth information, wheat and chaff identification, national "network" of libraries, national network of bibliographic tools, instant information, remote interrogation and delivery, active dissemination, and quality control over library services (improved feedback).\textsuperscript{193}

The Library of Congress leadership in developing machine-readable cataloging (MARC) with its potential for providing instant availability of standardized cataloging coupled with the location of specific copies of texts makes networking possible. And networking is today's dream and tomorrow's reality.

During the 1876 conference, Barnwell spoke urgently on "A Universal Catalogue: Its Necessity and Practicability." Such a catalog "to include the literary stores of every existing or possible library" could be used in place of the single library's catalog. "A marginal mark could be made opposite the titles of such books as the library contained, and thus the deficiencies would also be ascertainable at a glance."\textsuperscript{194} Is Barnwell describing the computerized system called OCLC (which stands for Ohio College Library Center, a name long since outgrown by this bibliographic data exchange system)? Isn't OCLC, in its present form, an incipient universal (main-entry, on-line) catalog for those library members which enter their full holdings in its immense data bank? And, of course, when it adds serials control, order records, and whatever other ideas Fred Kilgour pulls from his far-ranging imagination, it will be much, much more.\textsuperscript{195}

There is still a long, fascinating trail to travel. Full exploitation of computers has been handicapped by our thinking in traditional terms. Networking tends to be thought of as an extension of present services rather than rethought as a new concept with new potential. The fact that the new machines impose new conditions on their users is another reason why the traditional conceptions must be rethought.

It has been said that as the specialists took over the technical services, the user was lost to view. The chief librarian in 1876, checking over an incoming shipment of books to assign them to subject alcoves, might be interrupted to answer a query from a student. Thus, the user was securely embedded in the librarian's decisions without conscious effort and without the need to communicate with other staff to discover the users' concerns. Harassed by floods of materials and pressures to reduce processing costs and arrearages simultaneously, the technical services staff may indeed lose track of the ultimate customer, an oversight which must receive more attention in the future.

The large academic libraries, which provide much of the cataloging leadership, tend to ignore multimedia. In 1976, we stand in relation to nonprint materials in much the same relationship as librarians of 1876 did to the book, although the latter at least had a deep respect for the educational importance of the book. These materials should be fully accepted as resources and given appropriate controls.

Uniformity of practice should be the lesson which cataloging teaches to the other library functions. "Uniformity of practice" is one way of describing standardization, the foundation on which networking can be built. Indeed,
standardization may be more important than logic in drawing up the rules to which, as Barnwell said on the opening day of the 1876 conference, we are to adhere "with the most slavish servility." A hundred years after librarians organized for cooperative action, the technical services still have not agreed upon terminology to provide a means of gathering comparable statistics for sound comparison.

The role of the library heads is crucial to the technical services. As libraries became larger and the heads could no longer be so intimately involved in acquisition and cataloging operations, their concern did not become less. As ALA became involved in much larger issues—research, management, personnel, social issues, library school accreditation, and simply the difficulties of communication among an enlarged membership—the attention of the leaders was necessarily distracted from the technical services, which were left to the specialists. The difficulties in providing the technical services remained, but the chief librarian’s interest turned from the details to the costs.

Turning from the greatly enlarged ALA, the chiefs found a way to continue their important dialogues within the restricted membership of the Association of Research Libraries. There, backed by the authority to provide supportive activity within their own libraries, they continued their cooperative exploration of common concerns, and they were able to do so on a much grander scale than was possible for their predecessors.

According to McGowan, the principal interests of ARL after its formation in 1932 were to develop and increase by cooperative effort the resources and usefulness of the research collections in American libraries. These, of course, are basically the technical service concerns of acquisitions and cataloging. The programs and projects for which ARL has been responsible in these areas culminated in the addition to the Higher Education Act of 1965 of the provision which developed as the National Program for Acquisitions and Cataloging.

It could be argued that this activity without the early intimate knowledge of the technical service operations has resulted in some miscalculations. For example, the cooperative cataloging aspect of the Farmington Plan simply broke down as the cataloging demands of the participating libraries overrode the directors’ commitment to providing early cataloging for receipts. But, on balance, the value of the ARL aid to technical services has been of decisive importance to whatever progress has been made, and will doubtless continue to be so.

In reviewing 1876, one senses an excited gathering of librarians’ concerns and an exciting move toward cooperation in dealing with them. The need for cooperation today is at once grimmer than in 1876 and easier because of new technological support. In 1976, one feels a similar shimmer of excitement on the edge of new areas of cooperation and, again, librarians approaching them willing to face the hazards to each library’s autonomy which the changes will bring.

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OLIVIA OPELLO and LINDSAY MURDOCK

Acquisitions Overkill in Science Collections —and an Alternative

Science libraries buy many unneeded books in the effort to provide all needed books. Since books are the least-used source of information for physicists and other scientists, highly selective, objective criteria need to be developed and applied to book selection so as to limit acquisitions to items really needed. At the same time science libraries should increase their provision of the awareness services that researchers need.

Librarians have long recognized that the volume of acquisitions is outgrowing available library space. Incredibly, their proposed solutions to the space problem have centered around weeding and storage techniques rather than analysis of selection criteria. Librarians are treating the symptoms instead of the cause of the problem while they continue to indulge in acquisitions overkill. Even in today's tight economy, while austerity measures are being applied in the "management of decline," librarians have not been motivated to examine their library goals and their acquisitions policies as part of the problem. Their solution is now one of handwringing about the lack of funds to buy still more materials. They might better consider Buckland's comment that "as with cooking, expenditure on ingredients does not guarantee the quality of the product." It is true that during the last two decades of affluence and growth, libraries have been awarded prestige and recognition for quantity, but only because, as De Gennaro notes, there are no established measures of quality for libraries. Selection policies that try to keep up with Books in Print have resulted in collections of which only a small percentage are essential to support users' needs. When space and funds are limited, and quantity does not insure quality, is the addition of the one-millionth volume to the collection today cause for celebration, relief, or embarrassment?

Most science library patrons would agree that the librarian's role is one of service. Chen reports that academic physicists in the greater Boston area "view the librarian . . . mainly as housekeeper, organizer, and manager of library materials." This perception of the librarian is probably as commonly held by librarians as by patrons. Trying to maintain such a service image, librarians set themselves the goal of satisfying the readers who want their books "now." That is, the book has been purchased, cataloged, and is already sitting

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on the shelf when the patron requests it.

To achieve this goal, as long as the money lasts, librarians sift through thousands of advertisements and write out hundreds of order slips, following an acquisitions program whose purpose, in part, is to get as much material as possible into the library and onto the shelf. Most succeed in getting the wanted books bought, so that the patron will find the title in the card catalog even if the book is not on the shelf. The librarian is satisfied when a wanted book is thus "available." However, to achieve this goal, libraries buy, process, and use up shelf space with a multitude of other books that are not wanted.

USE OF COLLECTIONS

Trueswell found some years ago that a library's holdings might be reduced by as much as 60 to 80 percent and still satisfy at least 90 percent of user requirements. His research and that of Fussler and Simon have provided foundations for weeding and storage theories. Regardless of the kind of library, the criteria for weeding and storage are developed from the following: expert opinion regarding the importance of book to subject area; subject content of book (interdisciplinary approach or highly specialized topic that may be covered or duplicated in more extensive studies); professional reputation of author; language of book; publication date; circulation record.

The circulation record is relied on most heavily for deciding, first, which books should be placed in storage and then, later, for testing the decision on the basis of how many times a stored book has been retrieved. Most studies show that after an initial burst of circulation, usually during the first year after a book is acquired, circulation drops dramatically. This has been especially true for books in scientific subjects, although it has been less so for humanities and social science subjects. Buckland reports that "it has been found consistently that the annual usage of books declines with age in a negative exponential pattern." Fussler and Simon found that objective tests of usefulness, such as circulation and publication date, agreed with subjective opinions about economics and chemistry materials. There was less agreement, however, for language and literature publications.

During a weeding project at the library of the National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Boulder, Colorado, a library whose holdings are primarily in mathematics and physics, it was found that there was almost total agreement between scientists' opinions and objective criteria (set by librarians) recommending books to be withdrawn from the collection. A study of circulation records of books purchased between July 1971 and June 1973 also supports other findings that after initial interest the circulation of the majority of new books drops close to zero. At the same time, a few long-held titles continued to circulate at a steady rate.

It is recognized that circulation cannot give a complete record of a book's use. However, there does appear to be a consistent relationship between book circulation and total book use. Recent studies have estimated ratios between numbers of books circulated and books consulted in the library. The data indicate that out-of-library use generally exceeds in-library use.

THE COSTS

How much does a science book cost? According to the Bowker Annual of Library and Book Trade Information, 1975, the average price of a science book in 1974 was $20.83, an increase of 73 percent from the $12.67 figure listed for the 1967-69 period. It should be evident to any administrator providing
funds for libraries that more money, and lots of it, is immediately needed. But how would that same administrator respond if he realized that $20.83 is only the cost of the actual volume and that the real cost to the library is closer to three to four times the cost of the book after the library adds the cost of selection, ordering, cataloging, new item preparation, collection storage (shelf-space), and maintenance (card-filing). It might be wise to wait until next year before asking that administrator for special funds to weed the collection and place that $60.00-$80.00 book in storage!

**INFORMATION NEEDS**

What do scientists need from a library, and what do they get? Are they the same thing?

The National Research Council has analyzed the needs of physicists and described their information requirements for the future in *Physics in Perspective.* This study indicates that physicists spend approximately fifteen hours a week receiving scientific information or discussing it. Most of their information comes from browsing the journal literature. This finding is corroborated by Chen and Hagstrom. Physicists' other important information source is oral and/or written communication with colleagues. Surprisingly (to a librarian), books and reviews provide only a small fraction of scientists' leads. Discussion of book materials in *Physics in Perspective* reflects this, being limited to a few paragraphs, with note of the need for "Progress . . ." titles and a hope that conference proceedings will be published more extensively in the journal literature rather than in isolated books. While such a brief concern indicates a limited need for books, as opposed to journals, the focus of the concern is a good clue to what few books will prove useful.

Physicists emphasize their need for interdisciplinary works and review literature. The point is made that awareness of relevant literature in areas neighboring the specialty of a typical physicist is inadequate mostly because of the rapid rate of production of new information. In addition, advancing knowledge is continually establishing relations between fields that were previously unrelated.

Getting a copy of a needed item is not the scientist's real communications problem; rather, it is being aware of what exists.

**IMPLICATIONS FOR SELECTION POLICIES**

If a constant concern of librarians is to establish criteria for weeding books and if physicists and other scientists are less likely to use books than any other mode of information transmission, the implication is that libraries are buying books no one needs. When we ask ourselves if we need to keep that book, we are revealing that we should have asked earlier if we needed to buy that book. (In weeding programs, one circulation in thirty-six months may save a book from storage but the real question is: Should the book have been bought originally?)

The challenge to science librarians is to develop objective selection criteria, applicable to most standard advertisements, that will predict usefulness of a book quickly, easily, and accurately. With such selection criteria, book purchases would be limited by true and effective selectivity. For example, book purchases might be limited to reviews and collections; a few publishers' series; conference proceedings; "new" subjects; treatments of "new" relationships; and works by noted authors in relevant subject areas.

That's not too different from what is done now, is it? Except for the "introduction to . . ." and a few "How to's," and some other really interesting titles like *Future Shock.* They loved *Future Shock,* you say? So did we, in the...
public library. But, you say, there are some books with really good scientific titles; lots of them are purchased every year. We think we understand. Are those now in the 80 percent you could put in storage? A lot of them are, according to research findings; and they are the ones that are unnecessarily ruining your budget and your supply of shelf space.

Physics in Perspective suggests that "an innovation that would reduce by X percent the total time physicists need to spend in all types of communications to get a given yield of useful information would be equivalent to augmenting the man-years employed by an amount two or three times now spent in communications."15 Such an innovation would represent a savings of millions of dollars.

Can that innovation be a change in the kind of service libraries now provide? If the scientists' real difficulty is not getting a copy of the journal or report they need but, rather, keeping aware of what is currently available, cannot the librarian do more to keep them aware of the new literature?

Both current awareness services using the data bases available through on-line information retrieval and the more traditional abstracting and indexing tools can keep the scientist up to date in journal and technical report literature. The library can supplement these services by obtaining a copy of what the researcher wishes to see. Librarians functioning as information transfer specialists can maximize use of the library's resources and services by more direct interaction with departments, classes, laboratories, etc.16 Librarians need to get out from behind the reference desk if they hope to make the library's resources a more integral and viable part of research and education. Such an approach will call for a shift in library priorities. The first priority will now be keeping the scientist aware; provision of material will follow. Those librarians who fear that extensive information retrieval service will erode the traditional demands made on libraries will be pleased at reports indicating information retrieval services have brought new users to the library and produced an enhanced awareness of the total range of library services.17

The cost of on-line information retrieval systems is prohibitively expensive for individuals but not for libraries. Most libraries could support, individually or jointly, on-line information retrieval with their savings from sensible acquisitions policies. Like any basic reference service it could and should be done at no extra cost to the patron. (If someone asks you the chairman's name of an academic department, do you tell him it's a 25-cent question and when he deposits his quarter you'll give him the answer?)

Library patterns can change. We have seen services such as the Ohio College Library Center make obsolete the concept of extensive local original cataloging. We must consider the possibility that library service which only provides a book "now" is also obsolete. Librarians can continue to be housekeepers, or they can support their organizations by contributing to the real needs of research.

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Open Shelves/Closed Shelves in Research Libraries

This article traces the traditional method of making books accessible through their topical arrangement on library shelves, outlines the reasons for the abandonment of this method in European research libraries, explores its modified reappearance in postwar academic libraries, and cites modern arguments against the practice of making an entire research collection available on open shelves.

American libraries of all kinds endeavor to make books easily accessible, and as a result most libraries open their shelves to their readers. This practice does not prevail, however, in all libraries throughout the world. Large academic research libraries abroad usually have closed stacks, and scholars gain access to these collections through catalogs, bibliographies, and indexes.

The maintenance of open stacks with materials accessible through a classified arrangement is very costly. In view of modern research needs and budget pressures experienced by libraries, the high costs involved in this practice become more and more questionable and require justification. To explore this issue, this paper will trace the tradition of open access; outline reasons for its abandonment in European research libraries; demonstrate its reappearance in modified form since World War II, particularly in German libraries; and cite modern arguments which challenge the validity of classifying the holdings of a research library on the shelves for the benefit of those who wish to browse.

If one defines a library as a collection organized for use, access to it is essential. The question then becomes whether this access is more successfully accomplished through the use of traditional bibliographical sources or through the bibliothecal approach which allows browsing in the shelves. Most foreign academic and research libraries arrange their collections in a chronological sequence according to the order of acquisition by the library. Browsing in such a situation is meaningless since books of different subject fields are placed next to each other; and without special notational provisions individual volumes of a work, or monographs in a series, are not kept together. This practice is directly opposed to that used in American libraries where books are classified and available on open shelves.

The Tradition of Open Shelves

Historically, open access to shelves, where books are placed together by subject, is the oldest and simplest way of providing for the use of a collection. It is a method successfully demonstrated in most private libraries, and is a very economical retrieval device for any small collection. Even though little is known about early practices in library organization, it is obvious that the ma-
Material assembled in these libraries must have been arranged in some orderly fashion if it were to be retrieved easily. In fact, catalogs that have survived from antiquity indicate that some rough subject order already had been maintained for the tablets and rolls in earthen jars, wooden chests, wall niches, and later in the *armaria* of Roman times.¹

The monastery libraries which were dominant during the Middle Ages had very small collections compared with those of antiquity. They served communities of learned monks and lay persons with scholarly interests and religious backgrounds. For ease of use, the vernacular books, the "lay library," were usually separated from those used for study. Since they generally had to be used on location, a rough subject order was the typical form of organization.² For a long time the arrangement itself had to serve as a finding device since there were no catalogs. This was possible because the collections were very small; even medium-size libraries did not have more than a few hundred codices. In larger collections there were headings to guide the user to the location of the literature. Pictures of authors on cupboards or walls would suggest the presence of related books, such as in the library of Isidore of Seville (560-636), or the furniture units themselves were designated, such as an *armario imperiali* in the library of Charlemagne (742-814). The monasteries of St. Gall and the Reichenau provided captions for sub-units.³

A unique medieval custom required a periodic inspection of library volumes and was still mentioned in Richard de Bury's *Philobiblon*.⁴ This practice was probably the reason why lists of the items contained in a furniture unit were compiled. The absence as well as the presence of a work could thus be checked. With growing collections these lists also facilitated the retrieval of the works in the library. Actually, they were early catalogs with a double function: as shelflists they provided inventory control and indicated location; and because related items were kept together, they also served as subject catalogs. It is evident that ease of access to the assembled books was of concern since a typical list displayed the titles in homogeneous groupings. For example, it would begin with the Bible, then list the Church Fathers, theologians, and antique authors, and end with the *artes liberalis*.⁵

After the twelfth century the period of the great monastery libraries came to an end, and universities emerged as the carriers of scholarly teaching and learning. Since their book collections served a more varied group than those of the monasteries, they included the profane disciplines taught at the colleges. The library at the college endowed by Robert de Sorbonne (1250) in Paris set the pattern for others. As in the monastery collections, books were arranged to suit the needs of their users. They were grouped according to the four faculties of the college: theology, medicine, law, and philosophy. Within each group there was a rough arrangement according to the first letter of the author's name. But even this order was not strictly maintained since works were comparatively easy to find in the small collections. In 1289 the Sorbonne library was divided into a noncirculating reference library (*libraria magna*) with 330 volumes, of which the heavily used books were chained to twenty-six desks, and a small circulating library (*libraria parva*) with 1,290 books consisting of duplicates and less valuable items.⁶

The Renaissance and Baroque age could boast beautiful library rooms—architectural gems—in royal and princely residences. Books were stored in alcoves on series of tiers surrounding
great halls. The owners generally allowed a congenial public the use of their collections in these halls, but with the spreading of education there were already demands from a larger public for access to the knowledge stored in libraries. Gabriel Naudé (1600-1653), in his famous treatise on library practice, suggested that libraries should be open for public use and available to "the humblest of those who may reap any benefit thereby." The circle of people admitted became larger when some libraries opened their doors to the "public," which meant at that time learned individuals who were not members of the immediate academic community. The Ambrosiana in Milan (1603) was the first large library adopting this liberal policy, and it was soon imitated by others, such as the Bodleian at Oxford (1612) and the Mazarine in Paris (1643). Cardinal Richelieu (1585-1642) wanted the Sorbonne also to be a "public" library where scholars would be admitted at certain hours daily, as well as "messieurs les curieux et les étrangers," that is, outsiders not known to the academic community. This public still represented a very small and select group of individuals and certainly did not include the average man on the street.

As books in these libraries did not circulate, they had to be used in the library rooms themselves. Catalogs, when they existed, were still unsophisticated; consequently, it was the orderly arrangement that guided the reader to the literature. At the end of the seventeenth century, detailed classified arrangements, already popular in the smaller libraries, spread to the larger ones. With the eighteenth century they became more systematic, a reasonable corollary to the Age of the Enlightenment's preference for encyclopedic thought. A logical and systematic order was considered an indispensable aid for the scholar to guide him to what he needed.

There were sizable collections, such as the library of the Elector of Saxony in Dresden, whose 174,000 volumes until 1796 were accessible solely because of their detailed systematic arrangement. Many theoretical treatises supported such detailed orders. Particularly well known was Konrad Gesner's Pandectae sive Partitiones universales (Zürich, 1548), a subject guide to his Bibliotheca universalis (Zürich, 1545). It followed the existing university faculties and became a model for the arrangement of books on the shelves.

**Abandonment of Open Shelves**

Toward the end of the eighteenth century two practices emerged which created barriers in the traditional reader/book relationship and which greatly influenced modern library practice and theory. One was the fact that until the middle of the nineteenth century, modern conveniences, such as heat and lighting, were slow in finding their way into libraries. To make studying more comfortable, small rooms were made available for reading purposes in the larger libraries. These rooms could be easily heated and, furthermore, allowed observation of readers. Now the user was no longer surrounded by the collection; the needed volumes had to be delivered to the reading room for use there. It was only a small step to close off the book rooms themselves and to admit the users to the reading rooms only.

The other factor contributing to the closing of stack areas was the steady growth in the amount of scholarly literature. The most efficient way to shelve incoming material seemed to be in large multiter stacks with parallel ranges close together to increase the storage capacity. Thus stacks were created as separate areas from the rooms where the books were used. Increasingly, the reading rooms became the only areas open to readers, while the stacks were
closed or, in rare circumstances, open only to privileged users. Closing of stack areas also helped to prevent losses.

Other developments during the nineteenth century also had an influence in this change. Many new universities had been established in Western Europe during the second half of the century. New disciplines were created in which research was encouraged. Academic communities more than doubled in some countries and depended on the university libraries to support their scholarly pursuits. However, as library appropriations did not increase proportionately, large libraries found themselves tied to administrative practices which were inadequate to cope with the many new books to be processed and with greater demands for services. A bottleneck was the shelflist, which had to serve both for location control and as the library's subject catalog. The addition of new volumes necessitated a constant shifting of the books on the shelves, changes of already cumbersome notations, and adjustments in the catalog. As a consequence of such complicated operations, backlogs of unprocessed books developed.

The only solution to this problem seemed to be the abandonment of the prevailing subject arrangement of the literature on the shelves and the employment of the most economical storage possible. Thus the systematic library catalog could be relieved of its shelflist function, and new acquisitions could be integrated much more speedily. The results of this decision were far-reaching. The abandonment of any systematic order on the shelves made it unprofitable for a reader to go to the stacks directly, since similar material would no longer be together. The closing of shelves to readers was a logical consequence of a nonsystematic arrangement. Librarians ever since have rationalized this decision.

The new method, born of necessity, employed a shelf-finding device based on sequential numbering. This method was not actually a new one, as evidenced in the catalogs of Durham (twelfth century), or Canterbury (around 1300), where new acquisitions were added in numerical order after an initial subject grouping. A famous example of this arrangement, heavily criticized by Naudé, was the arrangement of the collection of the Ambrosiana in Milan (1602).

The nineteenth century pacesetter for shelving order by accession number was the Bibliothèque Nationale in Paris, and from there it spread rapidly to other western European countries. As the Bibliothèque Nationale had been unable to process the overwhelming flood of incoming works, a decision was made to close the old stacks where books had been grouped by subject and to start a "classement mécanique," which, due to official instructions, was now de rigueur for the large libraries under the central control of the French government. When Léopold Delisle, who was then also director of the Bibliothèque Nationale, suggested in his influential handbook on library practices a numerical arrangement of new works, the French municipal libraries voluntarily followed these recommendations. Strict numerical order was found to be particularly economical when the material was first grouped according to size. As recently as the 1937 edition of Crozet's standard handbook, grouping into nine sizes for scholarly libraries and into six for public libraries was proposed.

The French pattern of strict numerical arrangement within a size group did not find general acceptance in German academic libraries even though they had experienced the same financial problems and were faced with the same backlogs. There the emerging library profession had developed the "subject specialist-
The librarian, who was responsible for the building and organization of the collection in his field of specialization and in related subject areas. A strict numerical order would scatter the works in his field, separate him from the collection, and prevent him from evaluating its strength and weaknesses. Since collection building was the librarian’s prime responsibility, such an arrangement was not considered suitable. Instead, the arrangement adopted by German libraries was a modification of the French practice, in which the material was first divided into subject groups and then subdivided according to book size and accession number. Numerical arrangement in these two forms spread rapidly among the scholarly libraries in Europe. As a result, with the exception of reference collections in reading rooms, scholarly libraries had closed stacks.

A major debate on the advantages of numerical vs. systematic arrangement and the issues closely connected with it—open shelves vs. closed shelves—then took place. Administrative and economic considerations had the upper hand, and Georg Leyh, the foremost defender of numerical arrangement, pronounced the “dogma of systematic arrangement” as anathema, and created a new dogma of the numerus currens. According to Leyh, Fritz Milkau, then director of the Prussian State Library, had reasoned that 90 percent of all reader requests were for material of the last decade. Leyh concluded, therefore, that an arrangement according to acquisition by the library would be most practical. As new books would be shelved together, the library attendant could find the requested volumes within a small area and could deliver them quickly to the circulation desk. Leyh argued further that because of the continuing lack of funds, space, and personnel, the arrangement by classification created large backlogs and that new acquisitions could not easily be accommodated by the frequently complicated notation systems. He also expounded the obsolescence of existing classification schemes and the great efforts involved in keeping pace with the development in all branches of knowledge required to update the systems. He reasoned that it was impossible to assemble all the literature on a subject in one place, since classification schemes separated works and placed them in many locations in the system according to a variety of disciplines. Consequently, researchers would have to gather material from many locations. They would do much better to find the needed works through the traditional bibliographical sources and thus avoid the wasted time hunting through the stacks.

As Leyh had indicated, a sequential order keeps new material generally together in annual layers, and whole sections can thus be easily removed and placed elsewhere. Following Leyh’s thinking, some large libraries have created separate chronological sections, such as the Vittorio Emanuele in Rome which has ten chronological groups, and the Zürich Zentralbibliothek where there are four such sections, two already transferred to a storage facility.

The adoption of a mechanical arrangement and the resulting exclusion of students from the stacks isolated the European university library and fostered, especially in Germany, the development of institute libraries. These latter are characterized by open shelves and quick acquisition of special literature. They receive strong financial support from the university administration because the faculty, recognizing the value of open shelves which bring the students into immediate contact with the literature of their field, present strong cases for them.
OPEN SHELVES IN AMERICAN LIBRARIES

While most prominent European university libraries excluded their students from direct access to their collections, the public library movement in the United States prospered and had already begun to influence public library theory in Scandinavian countries. The American brand of democracy determined the development of a philosophy of public library work which was different from that in central European countries. Within this movement "open access" to the collection was the most radical and tradition-breaking innovation. It emerged as a library technique which again had the needs of the reader in mind and thus signified a return to the direct book/reader relationship of old. Many sociopolitical developments contributed to its general acceptance, but the influence of a few factors was particularly strong. Some college libraries which allowed their students free access to their collections may have served as examples for public libraries. As these libraries and the student bodies served were both small, it was natural to use the available books directly in the library rooms. At Brown University this practice had begun in 1848; Cornell was another early example; and at Mt. Holyoke Seminary, teachers and students could study in comfortable alcoves in which the books were arranged.22 The democratic concept of equal opportunity for all citizens demanded the acceptance of this policy in public libraries. In addition to teachers and clergymen who already had access to the shelves of public libraries,23 extensions of this privilege to others now became reasonable.24

Not all librarians, however, subscribed to this belief. The idea of extending library services to an "unknown public" generated arguments, which can be followed for several decades in the editorials and articles of the Library Journal and in the reports and debates of the ALA conferences. Many pessimistic prophecies were made for libraries if book stacks were opened. It was feared that theft, misplacements, and mutilations would be rampant. However, there seemed never to be any doubt that open shelves would contribute significantly to the self-education of interested citizens. Librarians were well aware that open shelves were not a panacea for everyone. The general reader would be at a loss in a large collection and would not know where to turn, whereas the serious student, knowing what he wanted, could find it quickly.25 At the conference of librarians held in London in 1877, the majority spoke against open access; even forward-looking Melvil Dewey was one of them.26

The subject was again debated at the ALA conferences at San Francisco in 1891 and at Lake Placid in 1894. However, at Atlanta in 1899 and at Montreal in 1900, members were now overwhelmingly in favor of open access.27 The tide had turned.

Many foreign visitors to American and British public libraries, where similar practices had emerged, were impressed with open shelves, "le grand avenir des bibliothèques," and described them enthusiastically.28 But, except for the Scandinavian countries, the impact upon European continental librarianship was not great. Open access libraries were the exception in France and Germany, not to mention southern European countries. A British writer, Derrick J. Bott, called the German practice—which he considered general throughout Europe—the most highly developed closed system.29 Its purpose was to educate, and this was thought to be best accomplished when the staff had close contact with readers. Closed stack collections were characteristic of all types of libraries in continental Europe. As
shown earlier, in university libraries this practice was the result of administrative considerations.

THE IMPACT OF WORLD WAR II

World War II had a great impact upon continental librarianship. It marked a new beginning and brought about drastic changes in library philosophy and services. Many buildings and catalogs were destroyed and valuable collections and treasures dispersed or lost. Much work and thought was necessary to rebuild and reorganize libraries. The library situation in Germany presented a particularly interesting case, because destruction from the war and the influence of the political ideologies of the occupying powers gave a new orientation to the reconstruction efforts.

After the war, German academic libraries were much concerned with making the remaining collections available as quickly as possible. To expedite this process, prewar administrative methods were chosen again because they had already proved to be efficient and economical. Books were arranged in most libraries by size, with a numerical suborder. Philosophical considerations were postponed for later exploration.

However, public libraries in Germany were in a different situation. They had been of little importance and influence, but now a new era had begun. As a part of the democratization process introduced by the occupying powers, a new comprehensive school system was created with equal educational opportunities for all. Information programs were set up and cultural exchanges established to demonstrate in a most practical way accomplishments from abroad. As a result, different attitudes developed, and they created new demands for reading and information. In turn, they also had a strong impact on the development of public libraries. Well-publicized examples of American librarianship in major German cities were the Amerika Häuser with their open stack libraries. The impressive Amerika Gedenkbiobliothek in Berlin, established with United States funds, was a highly visible and advertised German library which demonstrated American practices soon imitated by a generation of new public libraries.

The open shelf policy is a natural practice in a public library where the collections are current and small enough to be meaningful to a browser. Even though German academic libraries could no longer remain insensitive to the open shelf policy demonstrated so effectively by the American example and by the new emerging public libraries, the academic libraries had large, specialized collections which were not classified and which were frequently housed in buildings unsuited to change. Their strongly defended tradition gave priority to collection building rather than to service.

German visitors to the United States observed, however, that the openness of the American research library had made it more and more a center of study. The open shelves and study cubicles had brought scholars and books together rather than separating them. It seemed obvious that the American library was oriented towards its clientele and that its services were determined by the needs of its users. Several papers read at the 1956 conference of academic librarians in Berlin surveyed the situation and explored the function of the academic library in postwar Germany. It had become evident that the general university library had isolated itself because of its closed stack policy and its restricted rules of access, and so institute libraries grew rapidly. These latter, because of their open shelves and ease of use, had developed at such an astounding rate that in 1966, according to Pflug, 80 percent of the acquisitions budgets of two
North German universities had been allotted to them rather than to the general university library. It was argued that, if the university library again wanted to assume its role as a center of research, it must give priority to new research requirements and to needs of its clientele.

Open shelves, the historically natural relationship with library users, appeared now as the pivotal point which could again regain for the library its central role within the organization it was supposed to serve. It was also recognized that, because German traditions and conditions were different from those in the United States, foreign practices could not be adopted without scrutinizing their suitability and adaptability.

The old arguments concerning closed shelves and open shelves were once more the center of debate. It was agreed that administrative considerations could no longer dictate library practice and that new approaches had to be explored. In order to bring the readers back into focus, they had to be identified. The German academic library served two distinct groups: the research worker and the student. The researcher still sought access to a highly specialized literature primarily through traditional catalogs, bibliographies, and indexes; the student, particularly the beginner, was part of a rather homogeneous group that relied heavily on general literature to satisfy class requirements. A solution had to be found that would meet the needs of both of these groups.

THE COMPROMISE

Open access as demonstrated in Anglo-American countries did not seem to be an ideal solution for German research libraries. For some time it had been evident that there is a maximum size for an open shelf collection beyond which open shelves become a liability and a luxury, and even a disservice to readers and staff. The concept of free access, which was originally conceived as an aid to the user, had in the transition from the small library to the large brought with it many of the difficulties which it had proposed to eliminate.

A compromise has evolved in the practice of German academic libraries. In order to serve both groups of readers, closed stacks are used to house the specialized research material, and divisional reading rooms have been developed for students in their first years of study, as well as for general readers. Closed stack areas are dictated by the architectural plan of the older library buildings, by the sequential arrangement of the collections which would be very costly to classify, and mostly by the belief that browsing is not a profitable activity for the research worker. The reading rooms, which originally housed primarily the noncirculating reference collections are now enlarged to include a scaled-down version of the entire library collection. This practice has become the subject of much discussion: How large should the open collection be? What should it contain? How should it be arranged? How should the reader be instructed in its use?

The character and size of the library itself must determine the number and size of the divisional reading rooms. The purpose of the open collection is to put students into immediate and direct contact with a well-selected basic body of literature in their fields of study. The collection could be rather large, with 100,000 volumes still considered acceptable. The literature assembled must always represent an integral unit and must not be a collection of disjointed small subject groups. Users must be able to perceive their subject fields in their entirety, both in their organization and in connection with related areas. This is true whether there is a large reading room or several smaller reading rooms. In the university library at Constance, for example, there is no
general library collection but a number of special reading rooms. Kluth suggested that the open collection should contain a good representation of the literature most frequently used, works of established value on a given subject, and important new relevant titles, but excluding historical works. The currency and relevance of the assembled literature must be scrutinized daily; requests received at the reference desk and titles popular in circulation should guide in this task. This maintenance of the collection is an important responsibility for librarians, providing another dimension to their work. In order to keep like material together, the reading room collections should not be divided into several groups according to size. Because open shelf collections are designed with the general reader in mind, teaching is an important activity for the librarian involved. As in all defenses of open access, the fact that it also supports academic teaching has not been overlooked.

Just as German librarians in their consideration of the concept of open access have evolved the above compromise, librarians in the United States and England, traditionally the strongest defenders of open shelves, are beginning to reexamine their ideas. In many cases open shelves have become an anachronism no longer serving the needs of the modern research worker. Critics are aware, for example, that the large number of books assembled in a university library on a given subject defeats browsing. Furthermore, in his recent study George Pitenick concluded that "it is no longer realistic to hope to provide the same degree of accessibility to every item in [the university's] ever growing stocks."

Several developments indicate the desire to restore to the user a manageable body of literature. This is evidenced in the transfer of little-used material from open access into storage libraries, in the formation of departmental and divisional libraries, and in the growing number of undergraduate libraries on large university campuses. Leyh's argument of sixty years ago, pointing to the impossibility of keeping all of the library's holdings on a subject together, has been emphasized today by the tremendous overlapping in modern disciplines. The prevailing classification systems scatter subject matter widely. Journals are at the heart of research in many disciplines, and their contents are retrievable only through bibliographical sources, not through browsing. A further fragmentation has arisen because of information available in new formats that cannot be easily interfiled in a regular shelf sequence. This is the case not only for audiovisual materials, such as tapes and cassettes, but also for the increasing number of publications in microform.

Another modern development which makes browsing for the researcher impossible is the fact that no longer can the large library present the universitas litterarum. As these libraries are forced into greater specialization, the universality of knowledge must be reconstructed cooperatively through coordinated acquisition plans, reference networks, and costly interlibrary loan activities.

The need to control the growing amount of data in the sciences, which could no longer be accessed through traditional classification devices, has resulted in externally produced data bases in machine-readable form. Access to such data bases is provided through terminals located in libraries. According to a recent survey of the Association of Research Libraries, computer-based bibliographic searching has already become a viable and effective research tool in university libraries. In this process, material of high interest potential can be retrieved in great specificity and in many combinations and much more
effectively than through traditional browsing in the stacks.

As a result, the arguments for browsing on open shelves for the sake of serendipity, are no longer convincing. Through browsing, the researcher can access only a small portion of the library's potential information resources with a great expenditure of his time. In terms of modern efficiency, the high costs of classifying an entire research collection and of housing it in a systematic manner are, therefore, seemingly out of proportion to the alleged benefits a relatively small group of users may derive.

CONCLUSION

The solution worked out by German research libraries is interesting and may be adopted by other large research libraries: closed stacks, employing compact shelving, for research literature and modern reading rooms tailored to the requirements of general readers. The traditional retrieval method via catalogs and indexes for the library-owned specialized literature could be supplemented by computer technology that allows access to an enormous amount of data in machine-readable form at remote locations. The librarian will work closely with the researcher in the formulation of the search procedure and exploration of informational sources available. Consequently, there would be a "far more flexible interaction than would result by wandering through the stacks, as if one were shopping in a supermarket."45

With specialized collections made available through catalogs, bibliographies, indexes, and terminals, the general collection housed on open shelves could be arranged according to traditional classification schemes or perhaps by more functional methods to meet user needs. As some modern studies have indicated, these differ widely in various areas.46

The above considerations indicate that the practice of making the entire holdings of a research library available on open shelves may no longer be justifiable in terms of economic efficiency and reader needs. In times of budgetary stringencies it is always beneficial to look to history, to inquire into practices used elsewhere, and to reexamine current methods. The provision of a combined closed and open shelf arrangement can reconcile a library philosophy of service with the requirements of modern administrative principles.

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Istoričeskie Zapiski. Index
Compiled by Angelika Schmiegelow Powell.
1 vol. Nendeln, 1976. clothbound SFr. 54.00

The index is in two sections. The Author Index is in the Cyrillic alphabet; listed in it are approximately 1000 authors with the titles of the articles to which they refer. The Subject Index contains about 2630 entries which follow the Library of Congress Subject Heading List. Each heading is followed by the transliterated name of the author, the volume and page numbers which identify the article. The Library of Congress transliteration system is used throughout.

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Marshallsay, Diana, and Smith J.H.
Myrick, William J., Jr. Coordination: Concept or Reality? A Study of Libraries in a University System, reviewed by Glyn T. Evans 469
Welsch, Erwin K. Libraries and Archives in Germany, reviewed by Kurt S. Maier 470
Clack, Doris H. Black Literature Resources: Analysis and Organization, reviewed by Jessie Carney Smith 471
Borko, Harold, and Bernier, Charles L. Abstracting Concepts and Methods, reviewed by Jessica L. Harris 472
Harvey, Joan M. Specialised Information Centres, reviewed by Edwin T. Coman, Jr. 473
Information Revolution, reviewed by Richard J. Talbot 474
Information Roundup, reviewed by Richard J. Talbot 474
Cave, Roderick. Rare Book Librarianship, reviewed by John F. Guido 476
Edwards, Ralph M. The Role of the Beginning Librarian in University Libraries, reviewed by Leslie W. Sheridan 477
Adamovich, Shirley Gray, ed. Reader in Library Technology, reviewed by Barbara R. Healy 478
Evans, Frank B., comp. Modern Archives and Manuscripts: A Select Bibliography, reviewed by Nicholas C. Burokel 478
Metcalfe, John. Information Retrieval, British & American, 1876–1976, reviewed by Wayne W. Wiegand 479
Verona, Eva. Corporate Headings: Their Use in Library Catalogues and National Bibliographies, reviewed by Åke I. Koel 480

BOOK REVIEWS


This is an important book, not so much for what it tells us about City University of New York (CUNY) as for what it tells us about library cooperation. If libraries in a multicampus university system find coordination this difficult, how do looser consortial groups fare?

This book, based on Myrick’s doctoral dissertation, is an account of CUNY’s attempts to “coordinate the activities of the libraries, and of establishing uniform practices among them.” The early chapters report the development of CUNY and its libraries from the opening of the Free Academy in 1849 (later to become City College in 1886) and Hunter College in 1870, through the period of the College of the City of New York (1929–61 when the main member colleges were City, Hunter, Brooklyn, and Queens) to the creation of CUNY in 1961 and the period of growth from that time. The detailed account ends with activities taking place in 1972, with a status report and the occasional footnote reporting data from 1974. There is not, of course, a report of the recent dramatic events following the fiscal crisis of the city (and the state) and their impact on the libraries.

From this base, Myrick then examines the attempts at coordination of the libraries, with chapters on the coordinating agencies, union catalog and interlibrary loan, further aspects of coordination, an account of the office of the dean for libraries, 1969–71, and a chapter on the affiliation with New York Public Library.

By and large, the tale is a sorry one. Myrick reports four major factors which have impeded the development of coordination.
They are institutional autonomy, librarians' negative attitudes, lack of library support by the university: central administration, and the lack of a full-time central coordinating agency empowered with line authority, direct access to appropriations, and recourse to statistical data. These conclusions emerge inescapably from the evidence in the narrative. For example, Myrick reports that in 1971 a simple one-card union catalog was started at Hunter, a procedure which is, as Myrick notes, almost identical to a proposal made by Margaret Rowell in 1955. Four reports from different consultants (and a proposed resolution from the CUNY Librarians' Association [LACUNY]), submitted over a period of five years, proposed the creation of some form of coordinating office.

All were, in the first instance, rejected. When the dean's office finally was created, it lasted less than two years, 1969-71, and the post has not been filled since. In 1966 the university commissioned a study by Felix Reichmann and Irlene Stephens on the feasibility of centralizing technical processes. The resulting report listed sixty-seven specific recommendations. By the time it had been revised and rewritten in response to comment and criticism by the Council of Librarians, "there were now thirteen recommendations, not one of which had any direct connection with technical services. Of the remaining 66 recommendations, only three had been implemented by July 1974," LC conversion, application to (and denial by) ARL, and the union catalog at Hunter.

What of CUNY libraries now? All the senior colleges are in OCLC, and technology will clearly solve many of the mechanical problems which so beset the early attempts at library coordination. But the real problems will remain. How will the libraries respond to the crisis? By pulling together or by tugging apart? Will the university (librarians and administration) now realize and act on the need for strong central coordination?

Libraries must coordinate their activities if they are going to survive, and it is my view that libraries in a multicampus university have a better chance or opportunity than anyone else. Not that the problems are less difficult or the politics any easier, they are not. But at least the goal should be more clearly definable. Multicampus libraries should be the pathfinders, not the laggards, for if they can make library coordination work, then there is hope for the independent campus library. If they can't, our fate is deserved.

But it is easy to be critical. The terrible truth is that while there are heroes and heroines, there are no villains (although some are shaded grey); only doubt, fear, unawareness, disdain, and other human frailties.—Glyn T. Evans, Director of Library Services, State University of New York Central Administration.

Welsch, Erwin K. Libraries and Archives in Germany. Pittsburgh: Council for European Studies, 1975. 275p. $4.95, U.S., $5.95, foreign. (Order from: University Center for International Studies, University of Pittsburgh, G-6 Mervis Hall, Pittsburgh, Pennsylvania 15260.)

For American researchers planning an itinerary of German libraries and archives, Welsch's "handbook" will become as much part of their baggage as a railroad schedule or the Michelin Guide. Those who have studied in Germany can only regret that this work was not available earlier, for Welsch's book can save the student much time and inconvenience.

The author lists almost every major research library and archive in the Federal Republic and, to a lesser extent, in East Germany. While the emphasis is on the social sciences, the author touches upon all disciplines. A seven-part format for each institution includes the address and the name of its director (it is advisable to write in advance and state one's special needs). The American traveling abroad will appreciate information concerning library hours and the vacation periods observed. The author tells us which libraries have Sachreferenten (subject specialists) who can render helpful and expert assistance.

In the U.S. we have become accustomed to quick access to the resources in libraries and archives, but public admittance to stacks is still relatively unknown in Germany. It has only been in the last decade that German institutions have adopted our philosophy of "readers' service."

There is a location guide listing the subject-area responsibilities of German librар-
An example of the author's time-saving advice: In order to obtain authorization to use the pre-1945 files of the German Foreign Office (now located in Bonn), the researcher must present a letter of introduction from the U.S. Embassy. Similarly, the reader is advised as to the best procedure for gaining access to politically sensitive material in West and East Germany.

This book is a prerequisite for the scholar who wants to know all about the many libraries and archives in Germany, the size of their collections, and their outstanding holdings. A comprehensive bibliography following each listing enables researchers to do in-depth background readings on the institution they plan to visit. This volume will be a most useful addition to the reference collection in college and research libraries.—Kurt S. Maier, Leo Baeck Institute, New York.


The concern for proper organization of black resources is not new. As Arthur Spingarn assembled his vast personal library of black literature during the first half of this century, he knew early that bibliography, like book collecting, is never an end in itself. Nor is it ever complete. He simply mirrored the concerns of many collectors or scholars of black literature during his period and after. This small volume which Doris Clack has written is an extension of a continuing concern for the proper organization and analysis of resources in black history and culture.

In preparing the volume, Clack cites two areas as significant and worthy of addressing through the work. First, the text aims to fill at least a part of the void which exists in professional attention given to the problems of bibliographic organization of black resources and to inspire examination of other areas of bibliographic organization in search of applications suited to black resources. Second, the text aims to facilitate the search for classification notation and index terms which have already been developed and which are used for arranging materials.

The author's primary concern is with the treatment of black themes in Subject Headings Used in the Dictionary Catalog of the Library of Congress. To address this issue, she attempts to define the rationale for the work in Part I, which is devoted to a brief historical look at subject analysis of black materials through citations to a few published works on the subject. Clack cites the work of Frances L. Yocum, pioneer in this area, whose subject headings for black themes had a marked influence on the development of black subjects in the Library of Congress list. While the author recognizes that the literature on this subject is limited, there is a conspicuous absence of reference to the work of Atlanta University and Annette H. Phinazee in sponsoring a conference which partially embraced this issue. In 1967 proceedings of the conference were published under the title Materials by and about American Negroes and included a number of recommendations worthy of consideration.

Part I of the Clack volume continues with brief discussions on "The Development of Black Literature Resources from an Historical Perspective" in which the author follows some of the paths of black history, attempts to show the nature of black literature from 1761 through the New Deal era of the 1930s, and discusses various conditions of the times which had an effect on black writings. Part I ends with "The Influence of Black Studies on the Development and Use of Black Literature Resources," which summarizes various studies and concludes that far too few libraries are providing personnel and finances required for the adequate support of black literature resources.

"Subject Analysis Schedules" is the focus of Part II and, for the most part, includes a list of all relevant subjects on black themes which were included in LC classification schedules, a list of relevant LC subject headings, and nonrelevant classification notation and subject headings which have
been used in organizing black literature, as found in the Dictionary Catalog of Negro Life and Literature, New York Public Library. When Clack studied LC’s treatment of black subject headings, she concluded that its subject analysis “is not adequate to accommodate black literature in a systematic array as a unique body of literature,” that there were inconsistencies between headings listed in the index and those listed in the outline, and that use of the system often fails to lead to the retrieval of relevant documents. After page-by-page review of the LC subject analysis system, Clack pulled all subjects together in a single listing that the librarian may see the picture as a whole. The nonrelevant list is designed to complement the relevant materials within a public catalog and to show the array of specific subjects on which published documents exist.

Those who know black literature well will conclude that this book is incomplete. What is lacking most is a list of headings useful to the comprehensive collection which extends the LC list and the nonrelevant list. Even then, headings which Clack terms nonrelevant may well be relevant in a comprehensive collection.

Part I is a mixture of short, but vital topics that might well have been expanded into separate volumes. It might have been better to omit this section altogether and expand Part II, which appears to be the main thrust of the volume. More critical subject analysis of headings, showing patterns in their establishment, might also have been given. Although the volume is arranged in two parts, the overall plan and progression of the work is confusing. So is the language used in the text.

More than it does, the volume should stress that the LC subject headings list and classification schedules were designed to fit materials which are in the Library of Congress. Because LC does not collect all materials published, it has a built-in system for eliminating subject classifications which might be useful in more specialized collections.

It is unfortunate that this book was published just at the time that LC was revising its subject headings list for black themes, substituting the word “Afro-American” for “Negro” when relating to blacks in the U.S., the word “blacks” for “Negro” when referring to blacks in other countries. Numerous changes also appear within the new list.

The strength of the work is that it pulls together in a handy volume lists of relevant and nonrelevant headings on black subjects which may be found in library catalogs. Librarians and library school students who are less familiar with black history and culture and its literature may also find Part I of some value.—Jessie Carney Smith, University Librarian, Fisk University, Nashville, Tennessee.


The authors have filled the long-standing need for a good text on abstracting with a well-organized, readable work. While the stated audience is library school students, it should also be more broadly useful for self-teaching and as a supplementary tool for training in abstracting services. Furthermore, this is not the kind of text the reader trudges through because it is good for him; it is actually readable and interesting. This judgment was confirmed by use of the book with a course in abstracting and indexing.

There are three sections: background on the nature of abstracts and abstracting services, with criteria, instructions, and standards; abstracting procedures; a miscellany on management, automation, and personnel; the purposes of journal literature; a good projection of future trends; automatic abstracting; and career opportunities.

The section on evaluation of abstracts in the chapter on automatic abstracting could well have been placed elsewhere; it is a sad commentary on the field that most of the formal work on evaluation of abstracts has been done in research on automatic abstracting.

Abstracts are placed in their context as a major type of document surrogate, and the historical review of abstracts and abstracting services shows the use of this form over the millennia from the earliest written
documents. Organization and procedures in abstracting services today are described with a variety of well-chosen examples.

The sections on preparation of abstracts cover the numerous variations in style and content, always emphasizing standards where these exist, with many illustrations and examples. The major emphasis is on abstracting of journal literature, using the conventional complete sentence form; the extremely terse form of abstract exemplified by the New York Times Index and its Information Bank, where articles, capitalization, etc., are minimized, is not covered.

The section on organization, management, and publication of abstracting services carries the reader through the stages from document selection and assignment to layout and final printing. While some attention is given to definition of the scope of a publication, such a vexing subject could have been covered more thoroughly.

A wealth of examples is given, of abstracting instructions used by a variety of services, of types of abstracts and of different types of indexes to abstracts. As a result, the book could be used as a "how-to" manual, but the reader would almost unavoidably learn "why" at the same time.

Exercises, some with possible answers, provide further guidance in editing, selection of clear, unambiguous terminology, and reduction of verbosity. They seem well chosen and useful, and an informal test with volunteers led to positive results.

Two general features of the work deserve special comment. First, it is readable and interesting. Second, the balance between emphasis on present procedures and future developments is excellent. The authors describe both research in abstracting and innovations in journal and secondary service production which influences the way abstracting is done. The picture would have been more current if it had included a description of the system now used by the American Institute of Physics, where the front matter for journal articles is prepared in machine-readable form, and copy for both the journal and later abstracting and indexing coverage is produced from the same keying.

The index is well prepared to serve its purpose, and there are a current bibliography and a useful glossary of terms. Technically, the book is well produced, with a minimum of typographical errors and quality reproductions of example pages of abstracting services.—Jessica L. Harris, Division of Library & Information Science, St. John’s University, New York.


Although these two books cover somewhat divergent fields, they do in a way supplement each other in supplying information of value to readers in the U.S. and will be reviewed together.
While there is little new in Harvey's *Specialised Information Centres* for readers in the U.S., the author does give sound directions for the selection, organization, and dissemination of specialized data which transcend national boundaries. She emphasizes over and over again the reliance which must be placed on various specialists for the selection and evaluation of material. The omission of any reference to the part a librarian with a command of a subject can play seems to be an oversight to this reviewer. The lack of communication between British centers and those in the U.S. seems strange in this age of cooperation among scientists.

The author has tried to remedy this lack in a small way by describing some of the more important centers in the United Kingdom and the U.S. Since many of these British centers are not well known in the U.S., this is probably the most useful part of this book for readers in this country.

The Campbell book gives many sound principles as to the organization, staffing, and operation of business libraries. In addition, the authors supply much information on British business libraries and sources of information.

The initial chapter describes a number of British business libraries and compares them to some of their U.S. counterparts. One point that is brought out is that British business libraries stock directories very heavily. This is occasioned by the many overseas connections of British firms. With the rise of so many multinational companies in the U.S., there should be a similar demand for the information available in directories in this country.

The three chapters by Frank Cochrane on statistics and market research sources are especially useful. Cochrane has supplied a complete listing of British government bureaus with their publications dealing with marketing. In addition, he lists pertinent European publications.

This book is obviously aimed at the library school student or a junior librarian starting his career in a business library. The principles and methods put forth are sound and could apply to a business anywhere.

U.S. librarians should find this a useful reference work for the location of British government publications and selected European statistical reports. It is a pleasure to use a book with such an excellent index.— *Edwin T. Coman, Jr., Retired University Librarian, University of California, Riverside.*


These two sets of proceedings present, as one might expect, a panoramic view of developments in information science. In a brief review it is impossible to analyze such publications in a detailed way, but the impression they give is that the information science community is maturing. There is evidence of a greater sense of realism about what can be accomplished within the immediate context of economic constraints. In other words, the papers manifest a more pragmatic approach to information utilization and a clearer matching of potential to possibility than seemed to be present in earlier conferences.

A reading of the *Information Revolution* still remains an exercise in serendipity, an opportunity for intellectually tasting the familiar as well as the obscure. The effort, however, is tantalizing. The papers whet the appetite but are too short to satisfy the curiosity. To further their knowledge, readers must depend upon the citations at the end of each article which vary rather considerably in number per article, and consequently in their usefulness to the reader. But perhaps that's the function of proceedings: to encourage further exploration.

The papers are organized into twelve sections whose subjects range from information transfer mechanisms and library networks to library management and applications in biology and chemistry. The format of each paper is well organized, complete...
with index terms, brief conclusions, and references. The table of contents is extensive, and there are author and subject indexes. All of these make the volume very easy to use. Abstracts of selected keynote, general, special, and special interest group (SIG) presentations appear on a microfiche which is enclosed in a pocket.

The Information Roundup has a narrower focus. It is billed as "a continuing education session on microforms and data processing in the library and information center: costs/benefits/history/trends." In most respects it lives up to its billing, although it is largely concerned with libraries. One cannot expect a fully balanced presentation from a set of conference proceedings, but some of the papers do seem to be somewhat particular to the author's own application. Nevertheless, even this can be valuable. The index, while not as detailed as that of its sister publication, provides the reader with easy access to subjects of special interest. The papers by themselves are somewhat longer, more self-contained, and therefore, to me, more satisfying, though not necessarily more valuable, than those in Information Revolution. Some of the data and the citations on which the papers are based are a little dated, but it is useful to have a review of this subject in one volume.

One troubling note is Ralph Shoffner's introductory article on comparative cost analysis. This is well written and really rather cleverly done, but it is pitched at a rather low level of statistical expertise. If Shoffner's implied assessment of the ability of librarians to cope with figures is accurate, the profession has a lot of catching up to do. As Fairthorne says, the librarian of the present and future must be numerate as well as literate. Almost every page of Information Roundup emphasizes the need for at least a modest level of mathematical skill. If these proceedings imbue only a few librarians with the zeal to acquire these techniques, they will have served a useful purpose.—Richard J. Talbot, Director, University of Massachusetts Library, Amherst.

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Two apparently mutual irreconcilable concepts characterize rare book librarianship—custodianship and exploitation. The one can be best explained in light of the historical precept of entail; the other, in terms of restrained or responsible utilization, rather than selfish or base utilization. Actually, the congruent factor, common to both concepts, is that of responsibility. It holds them together in an uneasy balance and is what rare book and special collections librarianship is all about. A consideration of some of the problems associated with these two concepts is what *Rare Book Librarianship* is all about.

For some years now Cave has been associated with the Department of Library Studies at the University of the West Indies, Jamaica. This book, however, is said to be distantly related to a series of lectures delivered at Loughborough University in England before Cave took up his post on this side of the Atlantic. As such, the orientation is decidedly British, but it speaks to students of American librarianship as well. After all, if one agrees that rare books and special collections constitute a special category of materials requiring different treatment from the mass of library materials as to acquisition, processing, preservation, and exploitation, then problems are seen to emerge which are indigenous to the material, not endemic to a geographical point in space and time.

Cave devotes short chapters to discussing "the nature of the rare book," acquisitions, processing, care and restoration, housing (custodianship), organization, "publicity and publications" (exploitation), and the "training of rare book librarians." Perhaps some of his bias is evident in dismissing the role of the book scout in the antiquarian trade (perhaps in England, not necessarily in this country) too summarily; in omitting the *AB Yearbook* as a source for dealers' specialties; and in dismissing almost in a sentence the handling of manuscript material—a class of materials a good number of American rare book and special collections librarians are faced with, where the distinctions between print and nonprint resources are not always recognized and acknowledged by administrators as much as they might be abroad. Visual archives of a pictorial nature and, of course, that once, but no longer, distinctly American phenomenon—oral history collections—are completely neglected.

The chapter on the "training of rare book librarians" is alarmingly brief, but this speaks more to the poor state of affairs obtaining both here and abroad in terms of training and the uncertainties ahead concerning this speciality within the field than it does to Cave's treatment. An uninspired bibliography, an appendix (extracts from the report, *Book Thefts from Libraries*) of limited value, and a rather perfunctory index round out the small volume.

In spite of these reservations, the book is not without value. It brings together in a short and easily readable manner many of those problems which are unique to and which will become the daily routine of rare book and special collections librarians. It
should be of interest, therefore, to prospective specialists and novices, rather than to experienced practitioners already involved in maintaining the delicate balance between custodianship and exploitation. If nothing else, Cave’s *Rare Book Librarianship* reminds those beyond the pale that even today, in the time of the “now” generation, some of us continue to regard our professional responsibilities as threefold in nature—to the past, to the future, as well as to the present.—John F. Guido, Head of Rare Books, Archives, and Special Collections, State University of New York at Binghamton.


“What do librarians do when they are doing well as librarians?” Out of this general perspective the author conducted a study of beginning librarians in eight University of California libraries to learn about the nature of their work. Among other questions he asked them, “Which of the tasks you are asked to perform on your present job would you define as less than professional?” The survey was conducted in early 1970; the dissertation which grew out of it earned a Ph.D. in 1972; and the book was published in 1975.

Four of the seven chapters report that survey; the other three are an attempt to place the study in a larger historical perspective. The canvassing results are interesting though hardly surprising; the larger perspective is very surprising though not terribly interesting.

The larger perspective is, in fact, nothing else than a review of the literature concerned with library professionalism. The weakness in this, of course, is that one faces the very real possibility of capturing a somewhat limited view of the real library world. What would happen years from now, for instance, if someone attempted such a perspective on university library administration largely based on all the articles on this subject by library science faculty?

I have other criticisms of the work. For one, the author has on too many occasions proffered conclusions which are wider than the premises established in the survey. What is true of beginners is not necessarily or even often true of seasoned veterans. Neither can one conclude that the computer is not playing a significant role in the professional work at the University of California libraries just because it is not significantly part of the beginner’s role (page 66).

For another, in dealing with a definition of professionalism, he spotlights the sociologist’s criterion of a body of knowledge in any valid profession. The author asserts that the only valid body of knowledge which would fulfill the definition of professional for librarians is that which a subject specialist would have.

The book has value in its limited area of concern, viz., the types of functions which beginning librarians are allowed to perform. It raises serious questions for those beginners, their supervisors, and administrators, just as it does for library educators. The author suggests that the beginner’s inaugural period be clearly established as an

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The book has value in that one can analyze the methodology of an interview research procedure. The questions used are in an appendix and the results are clearly offered to the reader in the text. Readers can allow themselves to think of other questions that might have been asked. And they can provide themselves the luxury of second-guessing the conclusions. The review of the literature in chapters 1, 2, and 7 highlights the problem of professionalism for librarians. But as a larger historical perspective it leaves much to be desired.

We will continue to wait for the final answer about such professionalism, what it means, how one achieves it, and the means of getting others to accept it. This book makes one small contribution toward that answer. Hopefully, it will encourage others to continue the research so we will no longer have to ask, "What do librarians do when they are doing well as librarians?"—Leslie W. Sheridan, Director of University Libraries, The University of Toledo.


This volume successfully continues a series aimed at presenting a comprehensive overview of contemporary library concerns. It is primarily about library technical assistants—their history, rationale, education, and use—and their relationship to the library profession. To some their existence is a thorny problem, to others a cause to espouse and a way of life. These points of view are reflected in the fifty-one pieces in the book, which include articles and statistical studies. They have been selected mainly from recent periodical literature written by authorities in this area, from library educators and librarians to the practitioners themselves and a student.

The collection touches most of the aspects of subgraduate education in library techniques and the use of such trained nonprofessionals in diverse library situations. It is hoped that those seeking this information will not be deflected from their aim by the title. This is not a book about library technology. It is a book about nonprofessionals in libraries who have had training in library techniques and their impact.

This does seem an area beset with concerns over terminology, probably because of the very disparity of its parts. In one of the articles, Lester Asheim answers a list of ten, "I don't like the term ——," by saying, "Suggestions for ideal terminology are always welcome" (p.60). A better title for this book would be "Reader on the Library Technical Assistant."—Barbara R. Healy, Management Library, University of Rochester, Rochester, New York.


This volume is a revised and enlarged version of the author's earlier bibliography
The compilation of the bibliography is an outgrowth of work Evans has done for courses he has taught in the administration of modern archives. Although the author modestly subtitles his volume, “A Select Bibliography,” it is the most comprehensive single source of English-language publications on archival theory and practice in the U.S. The book is broadly divided into four major sections: (1) archival administration, (2) archival functions, (3) American archival agencies, and (4) international archival developments. Each chapter begins with a list of basic readings on a general topic, followed by bibliographic citations on related subtopics. Within each subtopic, entries are arranged chronologically by date of publication and printed in paragraph format. Each topic has a decimal notation to which the index of authors and subjects is keyed, a system that is both accurate and easy to use.

The heart of the book is the section dealing with archival functions. Here the user has easy reference to chapters on appraisal, preservation, arrangement, description, automation, and reference service for archival material. In addition, the section includes information on nonprint material such as still and motion pictures, sound recordings, cartographic records, machine-readable records, microphotography, and oral history.

Evans’ Modern Archives and Manuscripts is a standard reference for any college; its comprehensive list of books, articles, proceedings, and published sources through December 1973 is the starting point for information about archives. The fact that it will receive frequent use makes it regrettable that the book was published only in a paperbound edition.—Nicholas C. Burckel, Director of Archives and Area Research Center, University of Wisconsin-Parkside, Kenosha.


The book’s strengths are obvious. Because Metcalfe possesses a reasonable understanding of information retrieval as it developed since the mid-twentieth century, the reader will find the last three of the book’s eight chapters most useful. Here the author analyzes H. E. Bliss and S. R. Ranganathan, “Pre-Coordinate Indexing with Permutations and Combinations,” and “Post-Coordinate Indexing and Mechanization” in a discourse sufficiently supported by existing source materials.

But the strengths of the last three chapters contrast sharply with the striking weaknesses of the first five. Metcalfe judges early information retrievalists like Melvil Dewey and Charles A. Cutter not on the basis of problems confronting them in 1876, but on the basis of problems confronting contemporary catalogers in 1976. Such tactics make for poor history, and as a history this book has serious shortcomings. For example, analysis of the Dewey and Cutter systems derives almost exclusively from secondary sources. The author visited no manuscript collections to bolster his research.

Particularly distressing is Metcalfe’s prac-
tice of arriving at conclusions which, though challenging existing schools of thought, are supported only by citations to the same authors he is disputing. Then there are conclusions which are supported by no evidence at all, such as Metcalfe’s belief that Herbert Putnam’s predecessor as Librarian of Congress, John Young, was more responsible for LC’s existing thought patterns on information retrieval than Putnam (p.91-92).

The book has similar shortcomings in style and accuracy. All too often the reader finds individuals discussed in the text introduced by last name only. On pages 62-63, Metcalfe begins the first three sentences of one paragraph as follows: “As Comaromi said . . .”; “As Comaromi says . . .”; and “Comaromi said . . . ” Such tense-hopping and structural monotony is hardly indicative of scholarly writing. On page 90, Herbert Putnam is appointed Librarian of Congress on April 5, 1899; yet on pages 108-9, the date curiously jumps to April 5, 1900. Perhaps this might be passed off as mere oversight, but Metcalfe cites the latter date to show how much Young had accomplished with LC information retrieval before Putnam had arrived. Similarly, in Metcalfe’s discussion of Bliss and Ranganathan, the reader is informed twice (p.152 and 168) of Ranganathan’s habit of reading his rival’s books between ten and midnight to put himself to sleep.

Except for the last three chapters, the book is hardly worth the reading effort.—Wayne A. Wiegand, College of Library Science, University of Kentucky.


As a part of the effort to bring about international standardization of the conventions of bibliographic control, the IFLA Committee on Cataloguing (now the IFLA International Office for UBC) commissioned Dr. Eva Verona to undertake a study of the current usage of corporate authorship in various countries. Seventy-three (!) codes are compared, many of which have appeared after the 1961 International Conference on Cataloging Principles.

Verona has gone beyond the stated objective in also offering her own views, interpretations, and recommendations throughout the text. Thus the work covers more ground than its title and subtitle indicate.

A study of this type is bound to become rapidly dated. However, the inclusion of Verona’s comments and analyses of cataloging problems, such as the evaluation of the current German code (RAK), with its interesting approach to personal and corporate authorship (Verfasser/Urheber), are of lasting value and will likely lend permanence to what would have otherwise been a “state-of-the-art” presentation of corporate authorship problems in various cataloging codes.

The work is recommended to all those who are interested in the theoretical aspect of cataloging.—Åke I. Koel, Associate Librarian for Technical Services, Yale University Library, New Haven, Connecticut.
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In Honour of Severo Ochoa

Editors: A. Kornberg, B.L. Horecker, L. Cornudella and J. Oro

This book illustrates many of the major advances in biochemistry during the past 50 years. It is written by some of the distinguished students and collaborators of Severo Ochoa, and covers the main research areas to which Ochoa has contributed. The authors provide a fascinating autobiographical and historical perspective of the development of their own subjects, and include a summary of present research and indications for future study. The book will be of interest to all undergraduates, postgraduates and research workers studying or researching in the field of biochemistry.

The fifty contributors include 10 Nobel Prize-winners, who are listed below under the main subject headings.

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Lipids, Saccharides, Cell Walls
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S. Ratner; C. ASENSIO.

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